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An Industry of Indies:
The New Cultural Economy of Digital Game Production

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by

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John Vanderhoef

PREFACE AND ACKNOWLEDGEMENTS

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Solidarity.

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2014 "Masculinity," co-authored with Michael Z. Newman, in *Routledge Companion to Video Game Studies*, edited by Mark J.P. Wolf and Bernard Perron (New York, Routledge), 380-387.

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2013 "Casual Threats: The Feminization of Casual Video Games." *Ada: Journal of Gender, New Media, and Technology* 1(2): http://adanewmedia.org/2013/06/issue2-vanderhoef/

ABSTRACT

An Industry of Indies: The New Cultural Economy of Digital Game Production

by

John Robert Vanderhoef II

An Industry of Indies builds upon foundational questions concerned with the constitution, operations, changes, disruptions, and borders of the global digital games industry. Although scholars have engaged with the dynamics of the video game industry, few have analyzed the emergence of indie games over the last decade and the impact of these small games on the always already shifting terrain of this industry. During this period, the video game industry has been confronting a wave of changes wrought by continually emerging technologies, player expectations, and a generation of small game developers who have challenged particular industry practices and dogmas, even as they also provide value to the industry's largest video game publishers and platform holders. *An Industry of Indies* examines a range of independent, marginal, and alternative digital game production cultures across the globe, from commercial indie games to radical avant-garde games, and delineates the cultural and economic relationship of each to the global economy of digital game production and consumption.

This dissertation argues that despite the desire for real subversion amongst various indie development communities, an underlying neoliberal logic drives many of their entrepreneurial business practices. Even as many commercial indie developers distinguish their workplace practices, design approaches, and development ethos from the mainstream,

corporate industry, most still rely on the same ideologies of bootstrap individualism and free market politics that undergird the dominant industry. Furthermore, even those developers who distance themselves from the industry, usually accompanied by a feminist and/or Marxist critique of industry practices or output, necessarily have to rely on venture capital funded startup companies like Patreon in order to connect with their fans and earn a living within a capitalist system with which they disagree – a sad irony not lost on them. Within this greater context, the indie developer becomes a point of struggle between notions of the counter-hegemonic creative artist and the idea of the success-driven technology startup company, with the concepts of passion, art, and sustainability suturing the two perspectives together.

This project employs a middle-range media industries approach to describe and analyze the operations of indie developers within the global digital games industry, specifically an approach that combines interdisciplinary elements of cultural studies, discourse analysis, political economy, and feminist media studies. That is, this dissertation articulates the organization, operations, and agents of the commercial video game industry, in its largest and smallest forms, in order to describe how independent and alternative development cultures fit within larger systems of capital exchange, from commercial shops to solitary producers. It offers three significant interventions, primarily in the areas of media industries studies and game studies. *An Industry of Indies* examines indie games not only as alternative art or politics but as cultural products within complex, global ecologies of exchange; it focuses on the industry's smallest companies rather than its largest corporations; and it interrogates the boundary-policing strategies within media industries, arguing that commonly conceived barriers between amateur and professional media producers are, in fact,

fluid and wavering, dependent on constantly shifting discourses and industrial practices, policies, and standards.

TABLE OF CONTENTS

Introduction

Video games have been called the medium of the 21st century (Zimmerman 2014). This position assigns to games many of the qualities that now define our interactions with media and society, such as interactivity, user-creation, simulated systems, a cultural turn toward play, and the apotheosis of design and technology. While the purpose of *An Industry of Indies* is not to engage with arguments that claim we are living through a ludic shift in culture and society, I do want to foreground the fact that digital games matter in the world. They matter economically, culturally, socially, and technologically. First and foremost, digital games are a leading engine of economic growth worldwide. By 2019, the global commercial video game industry is expected to generate over $100 billion in revenue (Brightman 2016). In the United States, the video game industry's annual growth rate between 2005 and 2009 exceeded 10 percent compared to 2 percent of the entire U.S. economy over the same period (ESA 2015). In 2015, the U.S. games industry employed more than 146,000 people across 36 states (ESA 2015). Notably, this number only reflects people directly employed by video game companies and does not account for outsourced labor, including development and marketing. By comparison, in 2011 the U.S. film and television industry employed 284,000 people in the core business, according to a MPAA report; however, major blockbuster games are developed in offices across the globe and a comparison to the centrality and power of Hollywood, or its many U.S. offshoots (i.e. New York, Atlanta, New Orleans), cannot be made fairly (MPAA 2013). North America, East Asia, and Western Europe dominate video game software development and publishing, with cities like Los Angeles, San Francisco, Boston, Austin, Vancouver, Montreal, London, Paris,

Seoul, and Tokyo acting as central nodes in global video game production networks. Moreover, in the last fifteen years Eastern Europe, South America, and China have also emerged as significant, but under-researched, production locations. Digital games have become an engine of global capitalism and a central entertainment technology.

Video games also matter culturally and socially. More people than ever now regularly play digital games. In America, more than 150 million people play video games, and almost half of these play for at least three hours every week (ESA 2015). Almost 75 percent of American players are over the age of 18, with the average age being 35. Far from the dated stereotype of the basement-dwelling teenage male player, in today's media environment everybody plays video games. Indeed, recent data suggests almost half of all players are female, and women over the age of 18 make up a greater percentage of the overall gaming population than boys under the age of 18, the group discursively linked to the medium (Everett 2009; Vanderhoef 2013). Of course, it should be noted that while the demographics of game players have shifted over the last 20 years, the cultural discourse remains a white, masculinized and contentious one, even in seemingly more progressive independent development communities.

The logic of digital games, what might be called a ludic logic, has also migrated to our greater culture. The most visible sign of this is the gamification of everything from exercise to workplace meritocracies. Gamification refers to designing and applying a system of goals and rewards to specific tasks. Using utopian rhetoric, Jane McGonigal (2011) discusses gamifying philanthropic, humanitarian work in order to improve the world, while others have critiqued the gamification of culture for the way it dresses up capitalistic consumerism under the guise of productive play (Bogost 2014). Smart phone applications are

available to gamify weight loss or household chores for children. In this sense, gamification is simply the latest iteration of neoliberal ideology (Harvey 2005) that emphasizes individual, free market solutions to societal problems rather than governmental or collective ones. While tracking the confluence of ludic logic and neoliberalism in popular culture is vital, this dissertation takes seriously the scope and influence of neoliberalism on the culture of video game production, particularly on commercial indie game developers. On the opposite site of the political spectrum, the ludic structure and propensity for games to simulate systems has also encouraged some leftist critics and designers to turn toward games in order to represent and critique complex systems like capitalism or the war on terror, under the moniker of "persuasive games" or "games for change" (Dyer-Witheford and de Peuter 2009; Bogost 2010). The old adage, life is a game, is becoming increasingly a maxim for our contemporary culture and society.

Finally, the video game industry significantly contributes to the development of technology in order to continue to produce the most photo-realistic simulated environments. In the 20th century, most of the greatest technological advancements were the result of military research and development. This is true of video games themselves, which were birthed using military contract funds at MIT in the 1960s. However, some have argued these same advances in technology are occurring today thanks largely to the entertainment technology industries, including those with deep ties to video games (Kessler 2011). For instance, as virtual reality slowly advances and becomes ubiquitous, we have to recognize that one of its major drivers, the company Oculus, began as an organization trying to make virtual reality video games a possibility before Facebook purchased the company in 2014 for $2 billion. Facebook recognizes that virtual reality has applications far beyond the scope of

entertainment and digital games, and indeed virtual reality technologies, much like smart phone technology today, will very likely occupy our everyday lives in the next 10 to 15 years; but the technology nonetheless derived from the impulse to produce new kinds of digital game experiences.

So, video games matter. Yet this foundational statement needs to be unpacked further. If video games matter, then their production, distribution, and consumption matter. The kinds of digital games being produced and the structures, constraints, and affordances under which they are produced matter. *An Industry of Indies* takes seriously the dynamics of the video game industry, especially the way those dynamics shape and are shaped by this industry's diverse and prolific army of independent developers. This is a project about how small game developers in the 21st century have been able to steer the mammoth ship, if ever so slightly, of the global games business. However, while this project aims to explain, through brief theoretical mediations and robust, concrete examples, the emergence of a viable commercial indie games sector that now occupies the heart of the industry, it also seeks to complicate celebratory discourses by revealing the same underlying neoliberal logics animate the indie and dominant game development sectors alike. Indeed, when we turn our attention to the latest margins of the games industry, at amateur and hobbyist developers, we begin to see just how similar commercial indie game developers are to the industry they claim to oppose.

Held yearly in San Francisco, the Game Developers Conference (GDC) offers a place for game creators from around the world to gather and share insights into craft, design, business models, audiences, and other factors important to the global video game industry. Yet while the biggest games and emerging technologies certainly encourage conversations at these events, a different breed of developer arguably stole the spotlight at GDC 2013:

independent game developers, called indies for short (Suellentrop 2013). While indie games have had a presence at GDC since the Independent Games Festival became part of the conference in 1998, the last several years have seen the presence of indies at the conference expand considerably. For instance, while attendees occupied only a quarter of the room for a big budget, blockbuster game workshop in 2013, almost 1,000 people started lining up 30 minutes early for a panel called "indie soapbox" that gave up-and-coming indie devs the chance to share their perspectives on game design and the industry. Moreover, the Game Developers Choice Awards, voted on by the development community, overwhelmingly favored "indie darlings," including *Journey* (That Game Company 2012), a game that skirts the definitional line of indie because of Sony's investment in the project, and *FTL: Faster Than Light* (Subset Games 2012), a game funded through the crowdfunding website Kickstarter. In another example of indie games stealing the convention and stepping into the spotlight, designer and teacher at the NYU Game Center Eric Zimmerman announced that he would discontinue the yearly Game Design Challenge meant to inspire quirky and innovative ideas. "The idea of doing strange, bizarre, experimental games is no longer strange, bizarre or experimental," he told the *New York Times* (Suellentrop 2013). Moreover, according to GDC General Manager Meggan Scavvio (2016), in 2016 indie games have outgrown the Indie Games Summit portion of the conference and are seeping into the main conference, and indie game developers now sit on GDC's Advisory Board.

Many in gaming culture have framed the exponential growth of indie developers in the new century as an indie game renaissance (Kohler 2014). This position suggests that this renaissance coalesced in 2008 when indie game designer Jonathan Blow released his quirky, time-shifting puzzle game *Braid* for Microsoft's Xbox 360 game console. *Braid*'s critical and

commercial success brought "blockbuster" status to the genre of independently-produced video games and inspired thousands of developers, amateur and professional, to start indie development studios. Of course, independent games have been produced for decades, as this project repeatedly acknowledges. However, the word "indie," rather than independent, did not start circulating in gaming culture until the early years of the 21st century (Nooney 2015), and few in the industry or consuming public put a spotlight on this cottage industry until around the time *Braid* released to much fanfare. Significantly, this revelation coincided with the growth of the smart phone market, led by Apple's iPhone and Google's Android platforms, and the ascendance of digital distribution in the PC and home console markets. This emerging digital market provided small developers with tens of millions of potential players – and now increasingly billions of potential players – a digital retail space before unimaginable for indie developers.

Yet even as some indie games went mainstream, others became more niche. In 2010 a small Californian company called RetroUSB released *Battle Kid: Fortress of Torment* (Sivek 2010) for the outdated Nintendo Entertainment System, a game console originally released in North America in 1985. *Battle Kid* fits into a subfield of indie game development concerned with creating games for obsolete hardware and challenging the industry logic of planned obsolescence. During this same period, games also became much easier to make. In 2011 designer and writer Anna Anthropy (2012) called attention to DIY games when she published her book *Rise of the Videogame Zinesters*, encouraging people traditionally alienated by video game culture to take advantage of free or cheap development software to create games that speak to their personal experiences. In subsequent years, this movement, whether identified as DIY, craft, personal, or in this project as "everyday development," has

grown under the shadow of commercial indie games, working from the margins to take back video games from a hegemonically masculinized culture that repeatedly proves to be intolerant to difference.

The diversity and growth of indie games might look familiar to those in the film business. What the 1980s and early 1990s were to independent cinema, the 2000s and early 2010s were to independent video games. In the 1980s home video created demand for content that bolstered the production of independent cinema; for video games, it was the spread of broadband Internet and the growth of digital distribution platforms like the Apple Store on mobile platforms and Steam on the PC that created a larger demand for digital games, a demand indie developers have been more than happy to satiate. Within this comparison, then, we might consider titles like *Braid*, Castle *Crashers* (Behemoth 2008), and *World of Goo* (2D Boy 2008) as crossover successes, much like the indie films *Sex, Lies and Videotape* (McDowell 1989), *Pulp Fiction* (Tarantino 1994), or *The Blair Witch Project* (Sanchez and Myrick 1999) were in the 1990s.

As the scholarly literature illustrates (Bennett 2014; Newman 2011; Staiger 2013; King 2014b), indie is a shifting, mercurial, discursive category. It has been since its origins in the music world (Hesmondhalgh and Meier 2014) and its subsequent adoption in other media cultures. With this in mind, I want to make clear the dominant definition of indie that this project adopts. With its central concerns couched in the relationship of the cultural economy of indie games to the dominant video game industry, this project embraces the industrial distinction of indie games. The dominant digital game industry is comprised of a handful of platform holders or console manufacturers, including Sony, Microsoft, and Nintendo, and a small number of multi-national game publishers, including Activision-Blizzard, Electronic

Arts, Ubisoft, and Deep Silver. For this project, independent or indie game studios are broadly defined as those developers that are not owned by nor in a long-term, exclusive contract with these major platform holders or publishers. Of course, as *An Industry of Indies* reveals, even this distinction proves unsatisfactory and pregnant with contradictions and compromises. For instance, some self-proclaimed indie studios are openly traded on the public stock exchange, like Poland's CD Projekt, while others rely on credit cards and crowdfunding in order to keep the lights on. Yet each also has an investment in the idea of creative and financial independence from major platform holders and publishers.

I have built the arguments in *An Industry of Indies* upon foundational questions concerned with the constitution, operations, changes, disruptions, and borders of the global digital games industry, which has been confronting a wave of changes wrought by continually emerging technologies, consumer desires, and a generation of small game developers who are simultaneously mounting challenges while also providing opportunities to the industry's largest companies. What is the relationship between indie game developers and the dominant global video game industry? How does indie development reflect the dominant industry and how does it challenge long-held practices? What underlying cultural and economic assumptions animate the indie development sector? If commercial indie games have become a central part of the global games industry, what developers and projects now occupy the periphery of the industry? What constitutes a media industry and how are these lines defined and/or policed? How does marginal development challenge, disrupt, or resist conventional industry thinking, and how does it reaffirm or reproduce it? In order to engage in these questions, the scope of *An Industry of Indies* involves examining a range of independent, marginal, and alternative digital game production cultures across the globe,

from commercial indie games to radical avant-garde games, and delineating the cultural and economic relationship of each to the global economy of digital game production and consumption.

This project employs a media industries frame to describe and analyze the operations of indie developers within the global digital game industry, specifically an approach that combines interdisciplinary elements of cultural studies, discourse analysis, political economy, and feminist media studies. This interdisciplinary approach is necessary in order to discuss how issues of power and identity manifest themselves through the operations of the digital game industry, both at its center and margins. Unlike many studies that might be described as high theory, my approach adopts what has been called a middle-range approach (Merton 1949; Bordwell and Carroll 1996; Curtin 2003; Cunningham and Silver 2014), which seeks to gather on-the-ground evidence and then contextualize these findings through explanatory frameworks and theories. This hopefully avoids the pitfalls of what has been disparagingly called SLAB theory, or the application of high theory, particularly the influential continental philosophies of Saussure, Lacan, Althusser, and Barthes, onto a number of social and cultural phenomena without first understanding the minutia of the phenomena. Cunningham and Silver (2014) in particular argue that a middle-range approach is useful for studying rapidly changing media industries and helps scholars steer "between unbridled optimism ('all-change') and determined skepticism ('continuity') concerning the potential for such change" (149). That is, this dissertation articulates the organization, operations, and agents of the commercial video game industry, in its largest and smallest forms, in order to describe how independent and alternative development cultures fit within larger systems of capital exchange, from commercial shops to solitary producers. In this way,

I am concerned with the underbelly, shadow, or constituting periphery of the commercial games industry, even as I argue that commercial indie games have migrated from the shadows to the industry's proverbial center. Moreover, this dissertation takes seriously the vast web of relationships and production practices already established in the video game industry and attempts to examine how change might be driven by the development activities outside the purview of the industry's most visible companies, even as these most powerful, visible companies work tirelessly in order to incorporate and exploit the latest wave of disruptive indie games and indie developers.

One central thread that runs throughout *An Industry of Indies* is the tension created within indie game communities as they navigate the complex terrain between their genuine desire for subversion and the underlying neoliberal logics which drive many of their entrepreneurial business practices. By neoliberalism, I mean the ideological project that swept the world starting in the 1970s, defined by commercialization, globalization, deregulation, bootstrap individualism, and an emphasis on market-driven and individual rather than governmental and collective solutions to socio-economic problems. As David Harvey (2005) puts it: "Neoliberalism is in the first instance a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade. The role of the state is to create and preserve an institutional framework appropriate to such practices" and nothing more (2). As a "hegemonic discourse," neoliberalism has been adopted all over the world by corporations, governments, non-governmental organizations, financial institutions, and individuals (Harvey, 2).

Neoliberalism gains much of its purchase because it is a philosophy founded on the ideals of individual liberty and human dignity. Thomas Streeter (2010) provides an historical account for the rise of neoliberalism within early Internet culture where it took root particularly because of the romantic notions of creative individualism that go hand-in-hand with its free market economic philosophy. Video game developers, like the early hacker culture that influenced them, are products of both a 1960s countercultural mistrust of authority and corporate structures and the sweeping neoliberal reforms of the 1980s, spearheaded by Ronald Reagan and Margaret Thatcher (Barbrook and Cameron 1996; Frank 1998).

As a philosophy that celebrates both entrepreneurialism and a certain kind of freedom, it is easy to see how commercial indie game developers have adopted many neoliberal tenets, particularly when navigating an economy and industry that have equally been shaped by neoliberal policies over the last 30 years. Even as many commercial indie developers distinguish their workplace practices, design approaches, and development ethos from the mainstream, corporate industry, most still rely on the same ideologies of bootstrap individualism and free market politics that undergird the dominant industry. Furthermore, even those developers who distance themselves from the industry, usually accompanied by a feminist and/or Marxist critique, necessarily have to wrestle with the fact that they rely on venture capital funded startup companies like Patreon in order to connect with their fans and earn a living within a capitalist system with which they disagree. Within this context, the indie developer becomes a point of struggle between notions of the counter-hegemonic creative artist and the idea of the success-driven technology startup company.

Owing to all of this, *An Industry of Indies* contributes to the growing fields of media industries and game studies in a number of important ways. First, it employs a media industries approach to study independently-produced video games, treating them not only as examples of alternative art, design, or activist politics but as cultural products within complex, global ecologies of exchange. Here especially the project critically examines indie development practices and deviates from studies which tend to celebrate indie efforts as creative and diverse alternatives to their mainstream counterparts (Wilson 2005). Second, this project shifts the focus from the world's largest media corporations to some of its smallest, illustrating how individuals, entrepreneurs, and small groups operate in a digital era of global production and commerce. Finally, following Nitin Govil (2013), this project interrogates the boundary-policing strategies within media industries, arguing that commonly conceived barriers between amateur and professional media producers are, in fact, fluid and wavering, dependent on constantly shifting discourses and industrial practices, policies, and standards.

Media Industries

An Industry of Indies attempts to not only examine the discursive borders of the gaming industry and how they are or are not defined, but also the defining of borders around the category of indie games themselves and their place within the dominant games industry. Therefore, this dissertation engages with scholarship on media industries in general, the video game industry in particular, and the shifting definitions and approaches to independent, indie, and alternative media production, distribution, and consumption.

Media industry scholars argue that since media pervade society and shape our economies, social structures, culture, and politics, understanding how these industries operate helps us intervene and transform the very conditions of our daily lives. Although a relatively recent field of study, media industries research owes it origins to foundational work on Hollywood film and television studios by scholars like Hortense Powdermaker (1950), Leo C. Rosten (1942) David Bordwell et al. (1985), and Todd Gitlin (2000). While these scholars' approaches range from anthropological to sociological, they share an interest in delineating the social structures, production practices, divisions of labor, and general dynamics of Hollywood as the center of film and television production around the world. In the last twenty years, however, a number of scholars have called for a more global understanding of contemporary media industries, looking past Hollywood to other creative clusters working both for and against Hollywood hegemony.

Contemporary media industries research tends to focus on the issues of convergence, globalization, policy, and the digitization of content in today's dynamic media landscape (Holt and Perren 2009). This work is critical of the American-centric nature of past media industries work and recognizes the globalized nature of capitalism and media production in today's world. For instance, in *Global Hollywood 2*, Miller et al. (2005) adopt a critical approach to the national and international success of Hollywood. They argue that Hollywood holds a relative hegemony and influence over the rest of the world, exploiting ambitious countries eager to receive Hollywood investment in an attempt to cultivate creative economies of their own (Florida 2005). Unfortunately, this mad dash to attract Hollywood productions through strategies like tax incentives and cheap labor can result in a race to the bottom in terms of wages and working conditions for media labor. Miller et al. deploy the

concept of the New International Division of Cultural Labor (NICL) to describe the globalized and disbursed process of media production. NICL illustrates how Hollywood outsources the various aspects of a film's production to cities all over the globe, forcing these burgeoning creative clusters into a system of self-imposed exploitation. The authors argue that NICL ultimately lowers working conditions in even unionized locations, like the US, since they now have to compete on a global scale with non-union labor in other locales. Studies on the dispersion of video game labor (Dyer-Witheford and de Peuter 2005; Johns 2006) have made similar arguments. Yet few studies have considered indie games in a global production context, particularly the ways digital distribution has provided indie developers with opportunities for success without necessarily exploiting local labor populations or holding taxpayers ransom.

While NICL offers a valuable critique of the globalized nature of today's media production, it sacrifices careful analysis for political rhetoric, so much so that the authors regard any country that offers tax incentives to Hollywood productions as a dupe and any production communities within the countries that might benefit from such an arrangement are framed as a powerless, exploited mass. In other words, while its critique of contemporary Hollywood production tactics (offshore production) is useful, I eschew such hyperbolic rhetoric, instead choosing to address the complex benefits and shortcomings that result from the dispersal of video game development across nations, cities, and indie game studios. *An Industry of Indies* delineates the proliferation of choices now available to indie game developers, even as it tempers any enthusiasm by acknowledging the array of serious challenges that indie developers confront and the unchallenged, underlying neoliberalism that animates these dynamics.

Early scholarship on the video game industry provides the foundation for the study of the industry's complex global organization that includes hardware manufacturing, game development, platform maintenance, and product marketing. Scholarship in the 1990s provided classic but limited studies of gender dynamics and video game development (Stone 1996; Cassell and Jenkins 2000); however, *Digital Play* (Kline et al. 2003) offered one of the first foundational studies of the video game production process. Kline et al. couch their analysis in a neo-Marxist critique of the circuit of capital to divide the gaming industry into three sub-circuits that include the technology circuit, the cultural and development circuit, and the marketing circuit. Although separated for the sake of analysis, all three act in an interconnected, dynamic process that, Kline et al. assert, produces the games industry (23). By using these categories, the authors investigate tensions within the industry between the qualities of enclosure and access, violence and variety, and commodification and play (Dyer-Witheford and de Peuter 2009). The authors frame the video game industry almost exclusively as a vehicle for capitalism and exploitation, rightly pointing to the problematic areas of "militarized masculinity" and rampant labor abuses while at the same time largely ignoring examples of resistance or counter-hegemonic practices (247). Kline et al. have little to say about independent, indie, or alternative games, nor the potential of these games to reproduce, or more importantly disrupt or challenge established industry expressions and practices.

Although less invested in cultural critique, a number of scholars have concentrated on articulating the macro dynamics of the gaming industry. Much of this work, including Aphra Kerr (2006) and Randy Nichols (2014), offers a macro breakdown of gaming markets, developers, publishers, and platform manufacturers (Williams 2002; Izushi and Aoyama

2006; Deuze et al. 2007; Kirkpatrick 2013). However, many of these studies tend to concentrate on Japan, North America, and Western Europe. Jennifer Johns (2006) stands out here for her attention to global networks of hardware and software production, focusing on the creation of value, locations of power, and how industries embed in particular regions, not unlike the media industries work on media capitals (Curtin 2003). Johns uses her research to critique the weightless, placeless economy rhetoric (Coyle 1999), often associated with software development, by examining the global production of game hardware and software, both of which rely on weighted and placed materials and bodies (Huntemann 2013; Maxwell and Miller 2012).

Scholarship on the gaming industry has also engaged in critiques ranging from the dynamics of gender (Consalvo 2009), race (Everett 2009), and sexuality (Shaw 2009) in the industry to the industry's role in the production of electronic-waste (Maxwell and Miller 2012). However, chief among these critiques have been those that explore the exploitative working conditions of the industry. In a seminal article, Nick Dyer-Witheford and Grieg de Peuter (2005) describe three troubling aspects to gamework that correspond in some ways to other media sectors. First, they identify the reliance on "passionate pay slaves," defined as an enthusiastic young, unattached, idealist, anti-corporate workforce. Second, Dyer-Witheford and de Peuter identify precarious global developers, a concept which speaks to the normalized outsourcing of game development. Finally, they point to free networked labor as another troubling trend in the video game industries, a critique of free labor shared by an array of scholars, such as Tiziana Terranova (2000) and Trebor Scholz (2012). This last category is best exemplified by commercial game companies appropriating the work of amateur developers or the industry's reliance on free beta testing by players more than

willing to donate their time and energy in exchange for getting to play the game before release. All of Dyer-Witheford and de Peuter's critiques, to varying degrees, can be observed across the film and television industries, since they also rely on a young workforce, engage in globalized labor outsourcing, and, in the case of Youtube for instance, extract value from their users by profiting from freely offered user-generated content.

Casey O'Donnell (2014) expands on the plight of game workers in one of only a few (Malaby 2009) in-depth, long-term, grounded ethnographies of game developers, using the industry as a case study to examine the larger phenomena of laboring in the new economy defined by knowledge work. Unlike previous scholarship, O'Donnell examines the everyday experiences and perspectives of rank-and-file developers at independent companies working under contract with large publishers. O'Donnell illustrates how large publishers offload much of the risk of new projects onto contracted developers in a routine O'Donnell calls "the perpetual startup cycle," which leaves small developers vulnerable while reserving the benefits of a potential success for the publisher (153-4). Since the industry's precarious and mobile workforce shoulders much of the risk of game development, O'Donnell frames gamemakers as "adventure capital," echoing Dyer-Witheford and de Peuter's "passionate pay slaves" description (153). Unfortunately, none of these critiques include a substantial examination of the dynamics of "indie" game labor – that is, independent companies not working under contract with major publishers – nor do they leave much agency for individual developers or groups of developers to marshal any kind of resistance or alternative practices within the context of the gaming industry. *An Industry of Indies* recognizes the abusive working conditions in the dominant games industry and notes how these conditions are problematically reproduced in indie contexts. However, it also identifies how particular indie

studios are conscious of these destructive routines and work toward alleviating the worst aspects of working in game development.

Indie Media

As already evidenced in this introduction, when dealing with indie media or indie games in particular, the question of definition looms large. What is indie media? What is an indie game? In its most basic sense, indie media has always been defined as that which is not dependent on dominant companies. In cinema, indie film is defined against Hollywood product (Staiger 2013; King 2014b; Perren 2013). In televisual content, indie TV is defined against conglomerate-owned studios (Christian 2015). In video games, indie is defined against publisher-owned, operated, or contracted studio games (Lipkin 2013; Keogh 2015). However, James Bennett (2014) argues that media independence is only ever an ideal. As an ideal, Bennett asserts, independent media is perpetually in a state of crises or compromise (8). But what is at risk of being compromised? While some scholars lean on industrial distinctions of independence, others focus on formal characteristics. Bennett suggests that indie is in fact defined across sociopolitical, industrial, formal, and discursive sites (2). So, compromise for indies can occur in the context of politics, censorship, production, or the particular way an indie text is discussed in culture and society.

For instance, Michael Z. Newman (2009) defines indie not as an industrial category but as a discursive one. Influenced by the work of Pierre Bourdieu (1984), Newman argues that indie cultures are taste cultures that produce a contradictory discourse whereby they claim to be alternative to powerful institutions but end up recreating power hierarchies through the distinctions they make between mainstream and independent content.

Mainstream content and its consuming audiences are branded as superficial, consumerist, and inauthentic. In contrast, independent content and its discerning audiences are positioned as meaningful, organic, and authentic. The crisis or compromise that indies face under the discursive definition is the corrupting influence of dominant institutions on the authentic expression of the auteur.

However, Geoff King (2009) adds a flip side to the crisis argument. King proposes that because indie media cultures are in a perpetual state of crisis, they are also in a perpetual state of renewal. Indie media is always being coopted or compromised in one way or another while simultaneously promising a resurgence, renewal, or transformative rebellion. This renewal promises again and again to resist cooptation by dominant media. Bennett (2014) likens this continual state of crisis/renewal to Tim Wu's (2011) concept of "the cycle," which argues that media historically migrates from a state-controlled/intervention model to a free market/competition model, and finally to consolidation and oligopoly, with innovation/disruption breaking up the oligopoly and restarting the cycle anew (Bennett, 19-20). We see this cycle occur time and again within media, from radio to film. *An Industry of Indies* chronicles a particular moment in this cycle within the context of the gaming industry.

In 2002 Eric Zimmerman posed a question many scholars, developers and players still ask: Do independent games exist? With the so-called indie game renaissance arguably only just now closing out its first decade, it is perhaps not surprising that more scholarship has not been done on "indie" games. Luckily, this gap in research is quickly being rectified. Scholars working within independent games recognize that indie games have produced yet another discourse rived by power struggles and competing definitions. Scholars tend to define indie games based on how they are discussed in the discourses produced by the

gaming industry and culture, focusing on aesthetic considerations and creative authority. As such, indie games are often discussed as offering alternative mechanics, politics, and aesthetics, which challenge the dominant tropes of the mainstream industry. By contrast, the mainstream industry is discussed as a heartless monolith that puts focus groups and potential profit ahead of authentic artistic expression and innovative game design. As with all things, however, in practice both indie and mainstream games tend to be a mixture of both of these positions. Commercial indie developers are as interested in game revenue as major game publishers, albeit on a much smaller scale, and major game publishers are composed of thousands of creative people who all have various levels of passion and creative energy they inject into the projects they work on, many of which take three or more years to come to fruition.

In contrast to this project's focus, Nadav Lipkin (2013) argues that indie games are increasingly marked by a particular style rather than a production or economic context. In privileging an analysis of style over political or economic critique, Lipkin suggests that "indie" in gaming culture has been depoliticized. However, this posits an era before the current one when "indie," as a developer identity, somehow represented a stable counter-hegemonic ethos. Owing to the fragmented and multiple examples of indie game production over the last 30 years, I find this broad assessment to be somewhat reductive. Indie games have always been radically diverse in design and ambition, with some games interested in mimicking established tropes and genres, some games interested in subverting player expectations through innovative mechanics, and others with a specific interest in spreading counter-hegemonic politics. The same is certainly true of the diverse array of indie games today. Moreover, Lipkin and others perhaps read too much counter-hegemonic politics into

the alternative production and distribution practices of most commercial indie games. Indeed, as Lipkin admits, most indie developers make their design and aesthetic choices out of necessity not a political rejection of mainstream practices. Although there is a distinct enmity for big publishers amidst the indie community, the antagonism is mainly one produced over the struggle for creative control and access to revenue and profits. These concerns are not solely political, but instead are rooted in production and business practices. This project attends to these areas of intense concern within indie development communities.

One particular theme that tends to emerge again and again in scholarship on indie games is the degree to which indie development studios differ in ethos and practice from publisher-owned studios. In this context, Chase Bowen Martin and Mark Deuze (2009) stress that "independent" in the games sector does not hold the same oppositional or radical weight as the word might imply. This is especially true because publishers routinely outsource game development tasks to developers who otherwise proudly identify as independent (227). Indeed, the authors suggest that the emergence and success of indie studios over the last decade is a response to changing needs of the global video game industry, which include routine outsourcing to studios all over the globe. The migration from publisher-owned shops to independent ones is often explained by pointing out that developers are trying to escape difficult working conditions and achieve a sense of autonomy. However, as Martin and Deuze illustrate, many independent firms continue to work with publishers. Indeed, as chapter four in *An Industry of Indies* illustrates, a new generation of born-digital, indie-friendly publishers have emerged that partner with an array of indie developers. Moreover, I suggest that this supposed rejection of corporate control does nothing to essentially change the precarious working conditions of the indie developer. Newman (2016) supports this point

when he points out that indie developers share a lexicon with neoliberal, entrepreneurial communities that are fueling technology startups. Indeed, commercial indie gamemakers are just as likely to deploy terms like "autonomy" and "creativity" as they are "innovation" and "disruption."

Along these lines, Paolo Ruffino (2013) interrogates the discourse of emancipation that surrounds indie game developers, arguing for an understanding of independent game production that recognizes how the sector replicates troubling characteristics of creative industries and immaterial labor discourses. Ruffino argues that according to various narratives circulating in discourse, indie games are expected to be creative, innovative, groundbreaking, free of outside influence or control, intimate and individualistic. Ruffino notes that all of these descriptors are also part of what Barbrook and Cameron (1996) call "Californian ideology," a term that refers to the libertarian politics that have thrived in Silicon Valley and hacker culture since the 1970s (Streeter 2010). My examination of commercial indie games is in direct dialogue with Ruffino's arguments, framing most indie production practices as decidedly neoliberal ones that champion self-sacrifice, bootstrapped entrepreneurialism, and a presupposed meritocracy that espouses the belief that those who work the hardest and produce the best product will be rewarded. Indeed, one of *An Industry of Indies*' central contributions is explicating and unpacking Ruffino's point that "independent gaming, while basing its emergence on a discursive practice that often evokes ideals of freedom and emotional attachment to the final product, very often tends to organize itself on practices strikingly similar to those of the 'dependent' companies" (114).

There is a distinct slippage between the image of the proverbial counter-hegemonic indie artist and the image of an entrepreneurial geek with dreams of supplanting the world's

largest technology companies. Indeed, there is a dissatisfaction and tension in the gaming community over the discourse of indie games, leading to a continual search for a more authentic, non-compromised moniker.

More Indie than Indie: The Indie/Alternative Differential

Even as scholarship on independent games continues to expand, more work is needed that explores digital game production on the micro-scale of hobbyist and non-commercial development. Following Janet Staiger's (2013) suggestion that indie media can recreate the same ideological prism and hegemony of mainstream media, James Bennett (2014) proposes a third category of media that can be defined in relation to indie and mainstream media: alternative media. While indie and alternative are often used interchangeably (Newman 2009) in discussions of media, Bennett differentiates alternative media as texts that challenge mainstream media and the concentration of media power (12). In contrast to indie media, Bennett argues alternative media tend to be "participatory, grassroots, counter-hegemonic, nonhierarchical, one-to-one, small scale and on the margins. Particularly through digital tools and technologies, alternative media – in their utopian visions – promise to provide marginalized and disenfranchised groups with a platform and a voice" (12). As this dissertation contends, the incorporation of commercial indie games into the dynamics of the dominant industry has resulted in a renewed interest in realigning its margins, particularly for those developers opposed to the economics or design dogmas of mainstream game development. Many of these developers have instead rallied around the identity of "altgames," short for alternative games. Writer and game designer Soha Kareem (2015) describes altgames as existing outside of the mainstream and indie binary. According to

Kareem, rather than either bombastic (mainstream) or novel (indie) entertainment, altgames tend to focus instead on being "experimental, autobiographical, or political." Kareem also emphasizes the marginality of many altgame creators, who generally work outside of the formal video game industry and utilize free and available development tools. *An Industry of Indies* incorporates a critical examination of alternative game production, differentiating this model from commercial indie game production. However, this project is also concerned with locating productive linkages between alternative and commercial indie games, as well as between these two categories and the dominant games industry.

As discursively defined against professional games, so-called amateur games represent a predominant form of alternative game development. Another way of describing amateur game developers is as craft gamemakers. Emma Westecott (2013) argues for an understanding of gamemaking as "craft," a decidedly feminist act, in order to challenge the entrenched masculinization and professionalism of for-profit game production. Unlike commercial indie games, which ultimately define success by profitability, Westecott points out that success for craft gamemakers is defined by growing and maintaining a network of support, whether from fellow designers or from players. In *An Industry of Indies*, I refer to amateur, craft, or DIY gamemakers as "everyday developers," because of the everyday context in which they develop games, as well as the ways everyday experiences often influence the design and narratives of these games. In this way, I build off Westecott's work, contributing a brief historical framework to amateur game development, an engagement with the personal and political messages of several notable everyday-developed games, and an analysis of the relationship many amateur gamemakers have with venture capital backed crowdfunding sites they depend on for survival.

Despite an increasing attention to the industrial context for indie game production, what much of the literature on indie games neglects is the incredibly raced and gendered nature of indie game culture. One reason for the abiding marginality of people of color and women in gaming culture is arguably their lack of representation in the video game industry. While women and girls now make up the majority of players, according to recent surveys, the percentage of women in the game industry has only recently grown to a paltry 22 percent, up from over a decade floundering between 11 and 12 percent (IGDA DSS 2015) One of the troubling aspects of indie game culture is how it uncritically reproduces the white, hegemonic masculinity that dominates the mainstream industry (Everett 2009). Fortunately, in the last several years, scholars have begun to critique the reproduction of the dominant industry's exclusionary practices within indie gamemaking circles (Newman 2016; Fisher and Harvey 2013; Westecott 2013; Harvey and Fisher 2015). As Newman (2016) has argued, borrowing from Hesmondhalgh (1999), indie culture gains much of its legitimacy by denouncing the ideologically corrupted mainstream, though in the process it recreates a hierarchy based on gendered tastes the reproduce unbalanced power relations, placing those who possess the (sub)cultural capital on top (i.e. often white heteronormative men). Furthermore, Stephanie Fisher and Alison Harvey (2013) suggest that the rhetoric espoused in indie gaming communities reproduces many of the same exclusions of the dominant industry, especially for women and other marginalized people.

In contrast, the alternative game development space is one of the medium's most diverse. This is both worthy of praise and cause for concern. On the one hand, this is a welcoming space where people traditionally marginalized in dominant and even indie development spaces – women, queer people, people of color – are often welcomed as

creators and players. Owing to its diversity and non-commercial imperatives, the alternative game space is also where the most experimental games are produced. On the other hand, the alternative game space does not provide even the modicum of hope for financial sustainability that the commercial indie game space does. This means that those already marginalized in gaming culture for their identities are doubly marginalized within a development space where they cannot achieve economic success. Couched as they are within a discourse that sees their games as art, or examples of anti-capitalistic craftwork, many of these developers are pressured to release their games for free or, because of the nature of their games, are told their games are not worth selling in the first place.

An Industry of Indies cuts across discourses of media industries, creative labor, indie media, and the politics of difference in media production and consuming cultures. The goals of this dissertation are multiple. It seeks to understand the continually changing global gaming industry and how and in what ways commercial indie games have been incorporated into its central business and content strategies. It also seeks to explicate how commercial indie game creators navigate a complex and evolving series of networks and infrastructures in order to secure development tools, funding, and distribution platforms. In the same breath, this project wants to push on the very outskirts of the video game industry, to interrogate the discourses that separate and define the professional from the amateur, to explore the connective tissue, whether discursive or grounded in actual exchanges of resources, that sutures self-defined anti-capitalistic alternative games to commercial indie games and the $100 billion global gaming industry they are increasingly central to, a project that ultimately connects bedrooms to boardrooms and back again.

Methods, Approaches, Process

An Industry of Indies examines digital game development on the margins through a mixed-methodology approach informed by media industries and cultural studies. I frame these investigations against the adoption of neoliberal reforms across the globe over the last quarter century, as well as the central place of these ideas within video game culture, practices of labor exploitation and disruptive business models, planned obsolescence, and entrenched heteronormativity and hegemonic masculinity. This project examines our contemporary moment to elucidate the emergence of indie games as a discourse, as a set of business and production practices, and as a possible alternative to blockbuster video games. To do this, I have used a number of methods to gather and analyze data for the project, including surveying trade articles, fieldwork, interviews, and analysis of countless examples of indie and alternative games. Yet in order to talk about the years following 2008, this project also demands an examination of the history of independent and amateur game development. This project does not portend to be a dedicated historical analysis, but it does briefly survey the history of independent and amateur game development, particularly the changing nature of funding, production, business models, and distribution.

The field research for this project involved a combination of political economy, discourse analysis, and in-depth interviews with independent game developers around the world. I examined journalistic trade articles, industry and governmental reports, media policy documents, and dozens of indie games for the PC and home consoles. I also attended industry events, like Game Developers Conference in San Francisco, Electronic Entertainment Expo in Los Angeles, and IndieCade in Culver City. Additionally, a travel grant from the Film and Media Studies department at UCSB afforded me the opportunity to

visit indie developers in Warsaw, Poland and Prague, Czech Republic in order to get an international perspective on the incorporation of indie games by the globalized video game business.

This dissertation is concerned not only with the media industries as a set of business and production practices, but also as a dynamic and contested discourse that requires unpacking. I take inspiration from John T. Caldwell's (2008) "integrated cultural-industrial method," an approach that synthesizes textual analysis, interviews, field observation, and economic/industrial analysis. I examine data from four registers: textual analysis of trade articles, news articles, and indie games; interviews with indie, hobbyist, and amateur game developers; field observation of development locations and industry conventions and trade shows; and an economic/industrial analysis of both dominant and indie production cultures. Caldwell stresses the need to keep "individual research modes" in check by holding the conclusions of one approach in tension or dialogue with the results of another (4). I also consider the work I do inspired by Foucauldian discourse analysis (1978), since I am concerned with questions of power and the ways language and practices shape power relations in society and culture, especially concerning the production of media. By engaging critically with media workers and their textual milieu, I try to build a productive tension between my own analysis of the texts/practices I explore and the self-understandings of these production communities.

However, rather than feign an objective position vis-à-vis the production cultures I research, I approach them as a participant observer as understood in Feminist and Critical ethnographies (Duelli 1983; Stacey 1988). In this way, I augment Caldwell's approach by following feminist methodologies that "seek an egalitarian research process characterized by

authenticity, reciprocity, and intersubjectivity between the researcher and her 'subjects'" (Stacey 1988, 21-27). This approach emphasizes the researcher as embedded within rather than somehow outside of the communities and spaces she studies. This approach foregrounds the interpretive and critical position of the communities being researched, so that their interpretations and constructions of meaning are acknowledged as vital to the researcher's own, and the project in a sense is understood as a collaboration. Judith Stacey (1988) has critiqued this approach, first by woefully admitting that conflicts between the scholar's positions as empathetic person and exploitative researcher are inescapable, and second by suggesting that, despite collaborative research efforts, the final product, the article or book, and thus the final word ultimately belongs to the researcher. Stacey recommends continual self-reflection and engagement with questions of power, intervention, and representation, in addition to reducing the claims of ethnographic research and acknowledging the always constructed, partial truth that results from these investigations. These critical practices guide the portions of my research that involve interacting with discrete media production communities. These considerations are especially on my mind in portions of chapter one when I survey the work and struggles of queer and transgender game designers, all of whom are well-versed in cultural studies and are wary of their stories being coopted by a cis white, male PhD candidate. I hope that I fairly represent their stories and allow them, and their games, to speak for themselves.

One aspect of this project that is not as central as in other games studies is the question of audience and consumption of indie and amateur video games. Audiences are addressed throughout the project, but by and large this is not a project that follows the producer-text-audience model of media studies inquiry. This decision was made for a number

of reasons. As James Bennett (2014) suggests, unlike the categories of independent creators, it is not as helpful to discuss consumers as an "independent audience" or the strange concept of "audience independence," at least not when one is concerned with questions of the mobilization of resources, self-imposed working conditions, funding and business models, and distribution (5). Michael Z. Newman (2016) does consider indie and alterative media consuming audiences as distinct audiences, structured around their shared habitus, cultural capital, and tastes, who use their consumption as markers of distinction. As Felan Parker (2013) argues, this is also certainly true for players with vested interests in indie games. As the diversity of indie and alternative development communities illustrates across the core chapters of this collection, there is no one audience for independent games, and certainly not one that can be accounted for within the confines of an already ambitious dissertation project. Instead, I hope this project acts as a springboard off of which others can approach the question of "indie players" or "alt players," including the ways these players use their preference for indie games to distinguish themselves from what they might consider the mainstream.

This project might also raise concerns for not fully differentiating between indie games on PC, console, and mobile platforms, since each serves a distinct market and operates under unique conditions (Keogh 2015). However, while I recognize that development for each platform comes with its particular circumstances, these development spaces are becoming increasingly similar, especially as engines like Unity and Unreal are able to port game projects between all of these platforms with relative ease. Increasingly, commercial indie developers eventually release their games across all of these platforms to reach the largest audience and increase revenue potential. So, while some of my selections may

suggest a cherry-picking of examples of development for one platform or another, I contend that conditions and resources are increasingly more similar than different across PC, console, and mobile, and therefore a platform-specific focus is not particularly productive for this project. If one of the platforms is insufficiently addressed, it would be mobile, since that space is so large and expansive (in 2016, there are over half a million game applications on the App Store alone), and comes with so many of its own unique factors, from audiences to companies to contexts of engagement, that I take up its role only in relation to mobile's impact on market sizes and digital distribution, and in relation to indie development on PC and home consoles.

Chapter Breakdown

This introduction has established the emergence of indie games within the dynamics of the global video game industry. It has sketched a few key definitions and highlighted how ongoing discourses shape and re-shape our understanding of independence in video game production. Rather than a project that concentrates on these discourses, however, I am instead interested in interrogating the operations and industrial logics of a handful of diverse indie game production cultures. It is through the careful attention to the on-the-ground operations of these developers, their mobilization of available resources, their relationship to major industry companies, and their options for funding, distribution, and revenue, that I hope to illustrate their complex and integral relationship to the dominant games industry. The dissertation is organized in a logic that travels from the periphery of the video game industry to its core. This optic first illustrates how the passion of game developers and players animate the industry at all levels, both marginal and central, while also highlighting the various

companies, strategies, and networks that have emerged to incorporate indie game development into the core operations of the dominant industry.

Starting with the margins of the industry, chapter one illuminates what have been called DIY or craft game developers -- what I call "everyday developers" -- people with little to no experience with game design using free and accessible software to create a diverse set of game projects. Chapter one argues that even as contemporary amateur games offer critical, alternative modes of production, play, and representation, they necessarily imbricate the mainstream industry in their critiques of hegemonic masculinity, gender identity, and the politics of professionalism. This discursive interplay illustrates the impossibility of separating the efforts of one group ("professionals") from the other ("everyday developers"). In an era where digital labor is increasingly precarious, freelance, and outsourced, everyday developers reflect the workplace practices and labor conditions of the formal, dominant games industry through a mirror, darkly. These developers often make tangible the personal anxiety and financial insecurity rampant in the dominant industry but rarely shared with the public at large for fear of being alienated by a culture that accepts many abuses as the status quo. This chapter concludes by complicating the counter-hegemonic politics of many everyday developers with an analysis of the Patreon platform, a crowdfunding service many developers depend on for revenue even as they lament their dependence on a venture capital-backed technology startup that benefits from their precarious position as alternative creators.

Along with chapter one, chapter two explores the passions of marginal game developers who engage in game development as a hobby. Here I focus on hobbyist developers creating games for decades old, "obsolete" technology. This chapter recognizes retro hobbyist development for proprietary platforms – also called homebrew development –

as existing within the greater economy of the formal retrogaming industry. It also proposes that informal retro development differs considerably from industry interests in that it insists on the continued value of aging technology in the face of rapid innovation, preserves historical development practices, and encourages a sustainable and eco-friendly model of game development and consumption. In this way the hobbyist community indirectly challenges the larger cultural myth of the technological sublime and opposes the consumer electronics industry practice of manufactured obsolescence.

In chapters three and four, I pivot from an analysis of the passionate margins of indie game development to an analysis of its equally passionate core, consisting of commercial indie developers who now occupy a key place within the global video game industry. Chapter three in *An Industry of Indies* serves as a response to the emergent and prevailing discourses which frame independence in game development as a predominantly or unproblematically positive alternative to working in the corporate, mainstream games industry. First, it interrogates celebratory discourses around emerging alternative funding models for indie gamemakers. On the one hand, emergent funding opportunities like Kickstarter have given indie developers options outside of traditional and often exploitative partnerships with major game publishers, preserving their creative autonomy and forming more intimate connections with players. On the other hand, emergent funding models are too often celebrated without critically engaging in their shortcomings or the fact that such models are not so much challenges to the neoliberal logics undergirding the contemporary media and video game industries, but instead operate in ways that are part and parcel with larger and ongoing transformations and realignments. Along similar lines, the second half of this chapter interrogates the assumption that indie studios are structured in ways that eliminate

the infamously harsh working conditions in publisher-run studios. On the contrary, this chapter illustrates how difficult working conditions often travel from corporate to independent production contexts and that indie developers routinely wrestle with the same difficult decisions that major producers in regards to creating a healthy balance between work and life.

Chapter four continues the themes of the third chapter by exploring the transformation of the indie moniker into a marketing label, used not only by commercial indie developers but also by a new breed of game publishers focused on small titles. Here I examine the emergence of boutique indie publishers who seek to engage with the dominant industry while sustaining themselves in a liminal space. The arguments in chapters three and four do not condemn commercial indie games for their production and distribution contexts, but they do reposition indie games as less oppositional or alternative than they are framed in popular and industry discourses. Indeed, these chapters reveal that most commercial indie developers are structured in the entrepreneurial style, with ambitions to become the very corporate companies they claimed to be opposing in the first place. In other words, these chapters posit that commercial indie games have been successfully incorporated into the machinations of the dominant video game industry, and that their alternative status has been largely reduced to a brand or marketing scheme.

The final chapter in *An Industry of Indies* synthesizes the arguments presented in its central chapters, examines the parallel discourses of revolution and doom within the indie development community, and reframes the current indie moment as just the latest iteration of independent media producers shaping their respective industries. Drawing from the work of Tim Wu (2011), Daniel J. Czitrom (1983) and Brian Winston (1998), this chapter makes

brief comparisons between the growth and change in the video game industry and other media industries throughout the 20th century, particularly the cyclical nature of media that flows from independence to consolidation and back again in a predictable cycle of concentration and disruption, power and resistance. It furthermore elaborates on the influence of neoliberal capitalism on these cycles as well as the nature of power in cultural industries. The chapter concludes with an overview of the process whereby indie games have passed through periods of innovation, incorporation, crisis, and rupture, ultimately making a case that, despite the so-called indie revolution, there remains a sense of continuity within the video game industry, even as it continues to rapidly change and respond to innovative disruption from within and outside its always permeable borders.

I. Everyday Developers
Amateur Game Development on the Borders of Industry

For over two decades now video game critics and scholars alike have offered formidable critiques of the gaming industry. Chief among these critiques are those that engage with issues of gender (Kafai et al. 2008), race (Guins 2007; Everett 2009; Gray 2014), sexuality (Shaw 2009), and labor (Dyer-Witheford & de Peuter 2009; O'Donnell 2014) in the products, industry, and cultures of digital games. These critiques tend to point out the hegemony of masculinity, whiteness, and heterosexuality in the gaming milieu, and those social and cultural forces that delimit the ability of women, people of color, and queer peoples from either entering the industry or feeling comfortable in many of its circles. Yet other than joining the industry in a creative or decision-making role, doing the careful and precarious work of building bridges with the industry as an academic, or hoping blindly for industry leaders or rank-and-file workers to start acknowledging and acting upon these subcultural and scholarly critiques, there have been scant avenues for direct impact and change. While these critical voices have grown in number and volume over the years, establishing a prominent place in industry conferences like Game Developers Conference (GDC) or on industry websites like *Gamasutra* or *Polygon*, the same problems of hegemonic masculinity and whiteness at the textual and production levels continue to persist across commercial digital games. Recent International Game Developers Association (IGDA) surveys indicate women now make up almost 22 percent of the industry (the highest in recorded history), but these numbers are still far below representative populations, and the number of transgender developers and people of color remain in the low single-digits (IGDA DSS 2015).

Rather than trying to change risk averse, industry behemoths like leading publishers Activision-Blizzard or Electronic Arts, which are motivated by quarterly earnings reports and beholden to stock holders and an imagined, masculinized "core" player base, a generation of people are instead directing their critical energies to changing games by example. These solo developers are doing this not through participation in the industry directly, per se, but through the development of small games that reflect their own visions and voices, so many of which have never been given shape in the form of a digital game. Most significantly, many people enacting this change are not, as a whole, experienced game developers, nor are they embedded in the emergent commercial indie game sector explored in the second half of this dissertation, which is, despite its alternative bravado, merely a new brand of commercial games to be marketed and sold as commodities. Instead, as writer, artist, and game designer Anna Anthropy (2012) argues in her book, *Rise of the Videogame Zinesters*, these amateur gamemakers are "freaks, normals, amateurs, artists, dreamers, dropouts, queers, housewives, and people like you," who, according to Anthropy's enthusiastic book title, "are taking back an art form." In other words, although video games have become associated with large, corporate-backed, high-profile entertainment products that cater to a masculinized demographic in the console space through particular genres like first-person shooters and action-adventure games, or a feminized demographic in the mobile space through genres like hidden item and puzzle games, so-called amateur developers are approaching games instead more like personal art projects or creative endeavors. Through their efforts, these developers are illustrating that a video game does not have to be any one thing; instead, video games can be treated as a versatile medium capable of manifesting in any one of thousands of digital, interactive, rule-based systems with a diverse array of visual styles. Scholars like Ian Bogost

(2011) have long argued for an understanding of video games in this manner, with critiques that point out the lack of diverse designs for a medium capable of countless design permutations.

Emma Westecott (2012) utilizes the work of cyberfeminists in an effort to reframe and pivot current approaches to feminist game studies, and joins Susanna Paasonen (2011) in calling for an adoption and deployment of cyberfeminist tactics, including DIY culture, shared with the riot grrl movement and the production of numerous counter-cultural zines. In her work, Westecott directly links the work of Anna Anthropy with the riot grrrl tradition. Furthermore, Westecott connects contemporary amateur gamemaking with the history of DIY and craft movements, noting that craft cultures have always existed in the shadows of dominant, capitalist production cultures and have been devalued by their association with the domestic (feminized) setting.

This burgeoning flock of amateurs and artists use cheap or free game development software like GameMaker or Twine that are easy-to-learn and allow anybody with a computer and some free time to build a digital game or interactive story. Circa 2012, the games press called this burst of amateur development the "Personal Games Movement," owing to the intimate subject matter many of these games address. However, as amateur game designer, writer, and critic Mattie Brice has expressed, this is a problematic title. First, Brice argues, this label assumes a history of digital games that have not been personal to their creators, whether solo developers or large, corporate-backed teams (Alexander 2013). Second, Brice continues, it partially homogenizes and misrepresents the diversity in amateur game development as some kind of coherent movement with a stable ethos. Indeed, as discussed in the introduction to this dissertation, there are multiple communities doing this

work that identify with many names, and these labels are in turn subject to continually shifting discursive forces. Depending on a developer's political disposition or aspirations, he or she might identify more with the moniker of indie, small, alternative (alt), art, queer, or amateur game developer, among several others. Quite like the form of the Youtube video or the zine before it, amateur game development today resists any overarching labels. Furthermore, more so than the bounded page and the video project, video games are a versatile, malleable, mercurial medium, and while their most visible commercial forms have coalesced around a handful of recognizable genres and aesthetics, the medium itself is only limited by the imagination of the game designer and the technical specifications of the hardware running it.

Owing to the problems with the moniker "personal games movement," I instead refer to amateur gamemakers as "everyday developers." By "everyday developer" I mean amateur game developers who do not have extensive professional training in key development areas like coding, art, 3D modeling, or other highly skilled positions, but still pursue game development projects on their own time. Moreover, even if these everyday developers do have experience in one of these fields, they often keep the formal, commercial games industry at arm's length, purposefully inhabiting its margins or claiming spaces outside of its purview. As a result of their skill levels, these everyday developers rely on user-friendly software meant to aid in the game-creation process by streamlining a lot of the backend coding operations and offering flexible templates and options to, with a little effort and patience, create a digital game.

Of course, one critique of using a single term like "everyday developer" to refer to a diverse set of amateur development practices is that it still contributes to a homogenization of

amateur and alternative video game creators, in the same way Brice critiques the application of the "personal games movement" moniker. However, built into the definition of the everyday developer is an embracing of difference -- at the level of the creator's identity, production experience, and daily life, but also at the level of the kinds of game experiences produced. The most significant unifying factor that everyday developers share, then, is how they normalize video game development, divorcing it from its exceptionality and making game creation part of everyday life. It is for this reason that I propose and embrace the term.

Moreover, my use of "everyday" here as a replacement for "amateur" is not to join those who view the term "amateur" as a mark of denigration or inadequacy. Recovering and valuing the production of so-called amateur media creators is indispensable to this project, not least of which because amateur and professional identities are products of discursive constructions meant to reserve power for the latter while dismissing and delegitimizing the efforts of the former. There is social, cultural, and political power embedded in the identity of the amateur just as it is embedded, following the work of Michel De Certeau (2011), in the culture and practices of everyday life. Therefore, I use "everyday developer" to better highlight the working routines and rhythms of this particular subset of amateur game producers, which are couched in the ebbs and flows of everyday life.

Many everyday-developed games indeed feature as their topics the minutia of everyday life, from taking medication to walking to a coffee shop to having a conversation with a friend, activities that amateur game creators have historically looked to for inspiration. Jaroslav Švelch (2013) argues these points in his work concerning hobbyist computer game developers in 1980s Czechoslovakia. In related work, Švelch (2015) examines the game *Demon in Danger*, developed by Martin Maly, a 15-year-old Czechoslovakian boy, who

based the map of the game off of the layout to his own apartment. Švelch suggests games like *Demon in Danger* illustrate how games and everyday life were intimately connected in historical hobbyist development practices.

The term "everyday," with its unremarkable, almost banal connotations, offers a sharp contrast to the hierarchical language of professionalism that permeates both blockbuster and commercial indie game development. This language works to render as exceptional the production of digital games, foreclosing the possibility that small games made with free tools about ordinary events by people traditionally considered to be outside the industry can and do matter. This is especially the case since the everyday and professional contexts of game development remain in dialogue with one another through the culture of gaming. Brendan Keogh foregrounds this point when he writes:

> "Such games . . . have already drastically impacted mainstream videogame culture. They're often discussed and written about on game journalism outlets such as *Kotaku* alongside Triple-A and indie releases. They spark extensive (and occasionally vicious) formalist debates among veteran developers and critics about just what a video game 'is' as these new developers ignore the standards imposed by a hegemonic culture that marginalized them" (159).

Even as contemporary everyday-developed games offer alternative modes of production, play, and representation, they necessarily imbricate the mainstream industry in their critiques of hegemonic masculinity, gender identity, and the politics of professionalism, illustrating the impossibility of separating the efforts of one group ("professionals") from the other ("everyday developers"). Moreover, in an era where digital labor is increasingly precarious, freelance, and outsourced, everyday developers reflect the workplace practices and conditions of the formal, dominant games industry through a mirror, darkly. Everyday developers often make tangible the personal anxiety and financial insecurity rampant in the

dominant industry but rarely shared with the public at large for fear of being alienated by a culture that accepts many abuses as the status quo.

Progenitors and Antecedents

Citing Maya Deren's influential essay from 1965, "Amateur Versus Professional," Broderick Fox (2004) highlights that the Latin roots of "amateur" refers to an individual who does something for the love of it, not necessarily for commercial or even practical reasons. The idea of doing something for free, or at least not-for-profit, gets taken up in discourse and assigned a value equal to its economic potential – that is, because the amateur works for free or does not charge for his or her efforts, the product is considered of little monetary value, especially vis-à-vis the product of the professional. In his essay, Fox goes on to argue that the identity of the amateur is often defined in the negative, not by what qualities describe it, but instead against the qualities that people consider professional. In other words, amateur work is all that is "not sophisticated, not technically adept, not pretty or polished, not of popular interest, or perhaps most frequently and opaquely, 'not professional'" (5). Furthermore, Fox contends, the terms amateur and professional are themselves constructed by an array of "social, economic, technological, political, and ideological forces," the purpose of which is to maintain power imbalances (5). This method of constructing social and cultural binaries through language for the purpose of domination is a familiar one, and can be seen in any number of examples, including low/high in regards to art and culture, feminine/masculine in regards to gender, non-white/white in regards to race, and homosexual/heterosexual in regards to sexuality. It is no surprise, then, that all of these same hierarchies have, along with

amateur/professional, been perpetuated in the industry and culture of gaming as ways of producing and maintaining power for select groups of people.

In filmmaking, Fox traces the origins of the amateur/professional divide to the establishment of early Hollywood production standards, including 35mm film stock, as markers of industrial professionalism, and the subsequent framing of other film stock, like 16mm and 8mm, as the tools of amateur producers. He also implicates the discursive separation of public and private space/time, a splitting which associated work conducted during public (read: employed) time with professionalism and work endeavored during private (read: unemployed) time with trivial amusements meant for little beyond self-satisfaction. Finally, Fox argues, trade and journalistic discourses shored up these emerging distinctions and helped cement the now commonsense differences between professional and amateur film production. By discursively establishing these distinctions through technological, social, industrial, economic, and political means, amateur output was positioned not as legitimate production but as merely an extension of private consumption, with the most popular example of such production being the home movie (Zimmerman 1995).

Yet over the last two decades, many – though importantly not all – of these distinctions between professional and amateur film production have broken down. This breakdown is largely due to the availability and ubiquity of high-quality recording technologies, like HD digital cameras. For instance, the breakdown of concrete distinctions between amateur and professional work in film can be seen recently in the film *Tangerine* (2015), premiered at Sundance in 2015 and purportedly shot entirely on director Sean Baker's iPhone 5s. That *Tangerine* focuses on the story of two transgender women, a group

almost non-existent in most mainstream produced and distributed films, is a notable parallel to many prominent amateur video games, which also focus on transgender issues that are equally almost entirely absent in dominant video games. Of course, while the gap between the so-called amateur and professional in film production has narrowed, thanks to accessibility of high-quality, HD digital cameras and affordable production equipment, distribution remains a fundamental challenge for amateur films and something that, along with access to large sums of capital, ultimately defines the power, resources, and reach of professional versus amateur film productions.

In any case, Fox's history of the construction of the amateur in film production raises the question: what factors contributed to the construction of the professional/amateur divide in video games? Certainly, as with film, it is a combination of technological, social, cultural, industrial, journalistic, and economic forces. While this chapter does not portend to be a historical analysis of this issue, it does offer a brief review of the discursive construction of the amateur/professional divide in video games before going on to discuss the contemporary content and creators of everyday-developed games in the years following the "indie boom" (circa 2008) in the gaming industry. This history is meant to frame today's amateur development as part of a long trajectory of often-unrecognized and un-archived amateur game development while also allowing for a discussion of the particular historical differences and contingencies of current marginalized everyday game development.

Amateur game development has existed alongside commercial game production since the mediums earliest days. In his examination of amateur Japanese RPG developers, Kenji Ito (2007) reminds us that, in the area of video games, "everyone used to be an amateur in the time of William Higinbotham or Steve Russell," two designers of the earliest computer

games, *Tennis for Two* in 1958 and *SpaceWar!* in 1962, respectively (129). However, it should be noted that despite being new to game design, these two designers were hardly amateurs in their relation to the burgeoning fields of computer science and programming. It is because there was no professional sector yet developed in the early days of video games that everybody could be considered an amateur. Nonetheless, it did not take long for people to realize the commercial potential for video games. An industry soon emerged around coin-op arcade machines like *Pong* (Atari 1972) and home console game systems like the Magnavox Odyssey, both debuting in 1972.

As the commercial games industry bloomed, the discursive construction of the hobbyist or amateur game developer began. One locus of this construction was around the use of particular development tools and the tinkering of existing source code rather than the writing of original code. For instance, in the early decades of video games, one mark of the professional was the creation of original source code for every new game project. This production standard marked the coding experience and skill level of the game designer. In contrast to this practice, many amateur and hobbyist game creators reused the source code of existing games, instead choosing to tweak rule-sets and graphical elements to modify existing games and create new experiences from the original games' underlying structures. These source code tinkerers essentially created early versions of game modifications (or mods), a practice well-documented by scholars like Hector Postigo (2003), who have argued that video game modding communities represent pools of what Tiziana Terranova (2000) calls "free labor." For Terranova and Postigo, free labor provides risk-free value for technology and entertainment industries. In the gaming industry, Postigo and others have argued that modding communities, consisting of hobbyists and amateurs, have long been a

source of value for the formal games industry, which often appropriates hobbyist efforts that prove popular and successful.

In addition to tweaking source code, we can trace everyday development back to at least the early 1980s when games like *Load Runner* (Smith 1983) were some of the first to ship with level editors that allowed players to build, save, and exchange levels of their own design (Foddy 2014). These level editors were built with approachable user-interfaces, consisting mainly of tile sets that players could swap out with one another. So, for instance, a user could swap out a floor tile with a blank space to create a deadly pit into which the player could fall. By the mid to late 1980s, all-in-one software that allowed for the creation of original game concepts were available. These software packages fueled the development of commercial and amateur games alike. Some examples of all-in-one game creation software include *Pinball Construction Set* (1983), *Adventure Construction Set* (1984), *Garry Kitchen's GameMaker* (1985), *Shoot-'Em-Up Construction Kit* (1987), and *Adventure Game Construction Kit* (1988). Similarly, Anna Anthropy (2014) chronicles the development and distribution of *ZZT* (Epic 1991), an ascii-based[1] adventure game with a robust game editor of its own.

[1] Ascii-based means the game uses numbers, letters, and symbols for graphics. See Figure 1.1.

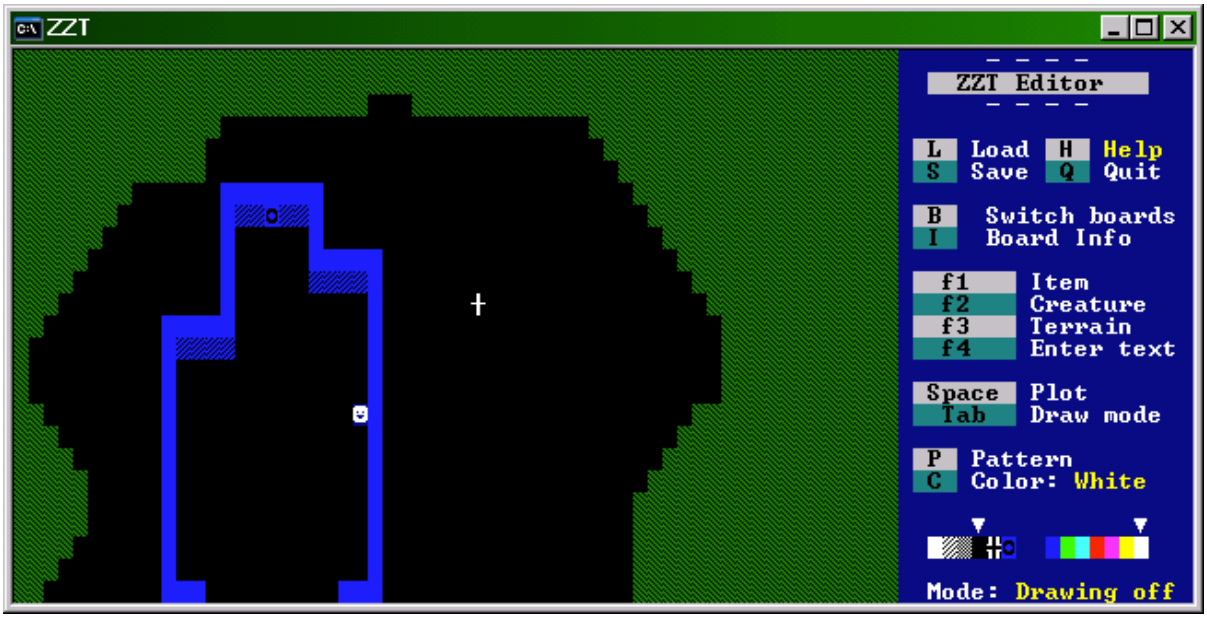

Figure 1.1: ZZT Level Editor

Developed by Tim Sweeny, original founder of what is today Epic Games, *ZZT* featured a popular level-editor so versatile that it became *the* game-making engine, according to Anthropy (2014), for a small but enthusiast subculture of hobbyist developers in the early 1990s [Figure 1.1]. Notably, in terms of amateur development, Sweeny later released *Best of ZZT* and *ZZT's Revenge* (1992) based on mailed-in submissions from fans as part of a design contest. As Anna Anthropy argues, *ZZT*'s level editor helped usher in a horde of amateur game developers in the early 1990s, continuing the underground creation of everyday-developed games that had existed throughout the 1980s.

In a similar timeframe, Apple's HyperCard program, packaged with Macs starting in 1987, also encouraged early amateur application and game development. This body of simple-to-use game creation software inspired a generation of young software and game developers. Anecdotally, I can recall working with classmates on HyperCard afterschool in 1996, at the age of 11, to create my first video game. Many professional developers began with programs like HyperCard before transitioning into more advanced software

development later in life (Phin 2014). The most popular example of this is the massively successful point-and-click adventure game *Myst* (Cyan 1993), which was originally built on Hypercard for Macintosh. *Myst* was an early example of how tools designed for amateurs or everyday computer users could produce experiences players associated with professional development. *Myst* was so popular at the time, in fact, that some argue it helped sell CD-ROM drives for computers, since the size of the game demanded the emerging CD-based distribution format (Kohler 2008). Amateur development continued throughout the 1990s, again buoyed by the launch in 1999 of the first version of the wildly successful GameMaker software (Foddy 2014). The latest iterations of GameMaker continue to be used by everyday developers today. Altering source code or using specially designed level editors and game creation software once discursively marked the work of the amateur.

In recent years, the dominant industry and everyday developers have used increasingly similar tools, including the most popular game development engines. The price of certain development tools and game engines used to cost tens of thousands of dollars and were prohibitive for independent or everyday developers. However, sophisticated, commercial development tools like Unity and Unreal 4 are now free to use for everybody. As a result, Unity has become the de facto game engine for many amateur and indie developers, and the availability of tools no longer contributes to meaningful distinctions between the everyday developer and the professional. Nonetheless, the skills needed to fully exploit these robust tools are still specialized and extensive, so many everyday developers continue to exploit more accessible options like Twine and GameMaker. While versatile, these simpler toolsets produce output that cannot as easily be mistaken for the photorealistic, high-fidelity product of major publishers and developers. It is possible to "pass" for professional now

more than ever, but the fact that players still strongly suture visual and audio fidelity to definitions of amateur and professional illustrates the enduring strength of the binary. In addition to development tools, access to large audiences has also changed over the last 20 years.

While not talking about digital games in particular, Kyle Conway (2004) challenges the typical utopian rhetoric associated with the supposed democratization of media production in the wake of more accessible production equipment. Conway emphasizes that distribution, not the means of production, represents the greatest obstacle to amateur media producers. Conway suggests that limited distribution dramatically limits the potential audience for amateur media, and as such, while the production of media may be more of a possibility than ever, accessibility and appreciation of this media is far from democratic.

One central historic barrier that limited the cultural impact of everyday developers has been the problem of widespread distribution. Although digital distribution has been an option for independent and everyday developers since the Internet became available for public use, the ability to reach a critical mass audience has been a lingering problem, even in today's much more robust digital distribution environment. As noted throughout this project, the lack of a game publisher once meant most independent or amateur games had no chance of reaching a mass public of consumers. Large audiences could only be found through brick-and-mortar retail outlets, to which large publishers had access. Lacking the necessary means of distributing one's digital game to a mass audience became another marker of the amateur. Most amateur creations were rarely shared. Many amateur developers distributed their games on floppy discs, which would be passed and copied from one friend to another. The unfortunate result of this informal network of distribution is a grand erasure of much of this

work across local game creation communities around the world, from the US to Czechoslovakia to New Zealand (Swalwell 2009). However, some methods for distribution of amateur software were available.

Everyday developers with access to the Internet in the late 1980s and early 1990s could post their games on IRC (Internet Relay Channels) or bulletin board systems (BBS) that users could dial into remotely. In order for this to work, the user would have to know the phone number of the BBS in the first place, which limited the reach of this method of distribution. Other amateur developers would send their games to magazines, which would collect them and distribute them on floppy discs, bundled with each issue. Other amateurs with access to more capital advertised in trade and hobbyist magazines, imploring interested players to send money in the mail in exchange for a floppy disc containing the game. However, none of these methods were able to reach the same number of people as major publishers who had product in computer and software stores and dedicated budgets for marketing in the most popular trade and enthusiast publications (Anthropy 2014; Kirkpatrick 2015).

Today developers large and small also have potential access to the same distribution platforms. Indie developers now have the option to distribute their games through mobile app stores on Apple and Android platforms, as well as on various PC distribution portals, including Steam, the world's largest dedicated digital game distribution portal with over 125 million registered users. Despite these options, we need to be wary of suddenly declaring the problem of distribution solved for independent and everyday developers. The problems of marketing and discoverability that vexed everyday developers in the 80s and 90s continue to vex developers in the digital distribution environment, although for different reasons.

While early everyday developers lacked the means for wide distribution and product awareness, even amidst a decidedly far less crowded marketplace, today's everyday developers have the means for wide distribution but must now compete for attention with tens of thousands of other games. Even as Steam continues to ratchet up the number of games it adds to its service each month, most everyday developers, lacking an established audience or a corporate PR firm, are unable to distribute their games through the popular service. This is because Steam uses a voting system to determine whether a game can be distributed through the service or not. In response to these problems, lesser-used distribution platforms have emerged that are dedicated to small games by independent and everyday developers. These services include itch.io, Game Jolt, and Warp Door, as well as the game archiving sites Glorious Trainwrecks and Forest Ambassador, both of which are discussed later in this chapter in regards to the problem of promoting everyday developers' games. Everyday developers often prefer these smaller services, especially those developers that do not necessarily want to charge for their games, or those that are politically opposed to entering into capitalist systems of exchange, which their games openly critique.

The most popular of these alternative marketplace options is the website itch.io. Started in 2013 by Leaf Corcoran, itch.io is an open alternative game marketplace that allows anybody to distribute games. Some of these games can be downloaded or played in-browser for free, while developers also have the choice of charging whatever they want for the game. As of March 2016, there were over 28,000 games available on itch.io, according to a Twitter update from Corcoran, many of which are created by amateur or everyday developers. Furthermore, as of 2014, the website had already paid out over $170,000 to game developers based on purchases (Ww 2014). While some commercial indie developers use the website as

an additional marketplace to distribute product, others use the service merely as a distribution portal for games that they make available for free. For instance, I use itch.io to host my personal game projects and games I have built with students in class.

For those that do want to earn money for their development efforts, funding and business models have historically been another means by which the amateur and professional were defined against each other. Professional games were associated with game publishers that bankrolled development and then sold mass quantities of boxed software through catalogs and brick-and-mortar retailers to generate a profit. In contrast, amateur developers struggled to find ways to fund and then monetize their games. In an effort to earn some money from their game development, early everyday developers devised or adopted new business models. For instance, many BBS game authors asked for "tips" or "donations" to be sent via the post to the developer's home address if people enjoyed his or her games. However, as might be expected, this method produced little income for developers.

What did produce a significant return was the "shareware model." Pioneered by Scott Miller in 1987 with his company Apogee, the shareware model involves giving all or most of a piece of software away for free and then asking for user payments to either unlock the full features of the software or disable solicitation screens that would pop-up each time the application is loaded (Plante 2013). In games, the shareware model usually involves giving away several levels for free and then locking the rest of the game's content behind a shareware "paywall." A paywall prevents users from accessing content (in software or on a webpage) until they have either paid a onetime fee or a subscription fee. Miller developed the shareware model – at the time he called this the Apogee model – after publishers continually rejected his game pitches and he decided to distribute his games himself (Plante 2013). After

failing to earn money using the donations model, Miller split his game *Kroz* (1987) into three level packs and gave the first pack away for free through a BBS. In order to access the other two level packs, users had to send Miller a check. Once he implemented his version of shareware, Miller was earning over $1000 per week, a number that would exponentially skyrocket with subsequent releases of popular titles like *Commander Keen* (id Software 1990), *Wolfenstein* (id Software 1992), and *Duke Nukem 3D* (3D Realms 1996) (Plante 2013). The shareware model persisted for many years, used by independent companies such as Apogee and id Software, as well as many smaller, obscure everyday developers. Today, commercial games and amateur games share similar pricing models. They either charge fixed prices for complete games or utilize the free-to-play model, a model that gives away the base game for free but then charges the player for upgrades, power-ups, and additional levels. The free-to-play model is arguably a contemporary development of the shareware model, albeit with more nuanced (what some might call exploitative) pricing options.

As an amateur-turned-publisher, Miller at first ran the fledgling Apogee out of his parent's home. This is important to recognize because the spatial/temporal orientation of development work has also historically been used to differentiate the amateur from the professional. In the early years of the gaming industry, professional work became linked to work outside of the home, typically in an office setting, and usually between the hours of 9am and 6pm. Conversely, amateur and hobbyist work was largely linked to the domestic setting – the bedroom or garage developer, as Scott Miller could have been described in Apogee's early years. Unlike the daytime temporality of professional development, the amateur game developer is most often associated with evening hours after many everyday developers get home from their day jobs.

Increasingly, however, the spatial/temporal distinctions between the everyday and the professional developer have eroded due to changes across the media industries such as the push for a more flexible, mobile workforce. In terms of spatiality, many developers are now employed as freelancers or work as independent contractors. As a result, the home has become the de facto office for many. In fact, according to results from the 2014 IGDA Developer Satisfaction Survey, 17 percent of developers are "For-Hire" and 48 percent of developers identify as "Independent" (Edwards et al. 2014). Accordingly, rather than the location of work, the key differentiator between amateur and professionals is increasingly whether or not the work being conducted at home is part of a salaried position, a freelance contract, or whether it is "merely" a personal project. The time each group spends working also increasingly overlaps. For professionals, the demand to be in the office has perhaps manifested itself most visibly in "crunch time," when developers remain at the office for large portions of their days, sometimes staying overnight, in order to finish games on deadline. Essentially, the standard workday has given way to a perpetual workday during certain periods of game development. While working from home, this can be no less true for everyday developers, especially for those who may not have day jobs. For many working from home, whether identified as professionals, hobbyists, or amateurs, digital game development can quickly become an around-the-clock activity.

This has admittedly been an abridged recital of the history of amateur game production and the way everyday practices have been picked up in discourse in order to differentiate the professional from the amateur game developer. However, its purpose is to illustrate how the amateur and professional have been co-constituted in the games industry from its earliest days. Similar to the film industry and other media industries, this distinction

has been discursively structured around the possession of highly specialized skills, the software packages and technology used, the means of distribution, funding and business models, and the place and purpose of development. Over time, these distinctions are rehearsed, reproduced, accrete, and become commonsense. On the one hand, the amateur/professional distinction is useful for the industry and allows for the easy recognition of experienced, skilled, and specialized development talent, from programmers to artists. The distinction aids in the creative management of large development studios with hundreds of employees, sometimes spread across the globe and working on staggeringly complex digital games. On the other hand, this distinction also does the cultural work of imbuing the professional designation with value, prestige, and polish while defining the amateur against these qualities. This valuation hierarchy manifests in the limited kinds of opportunities, rewards, and recognition afforded to everyday game designers. This hierarchy also encourages players to view everyday-developed games as experiences that are lacking in comparison to their professional counterparts in terms of graphical or audio fidelity, game mechanics, or other features. Yet as I have discussed, the historical and discursive distinctions between the professional and amateur have weakened, at least on a material level. Everyday developers and industry professionals increasingly use the same development tools, share the same distribution platforms, and face similar economic uncertainty.

Of course, all of this is not to conclude that significant differences do not still stand. For instance, professional games and their creators still have access to enormous capital, either through corporate game publishers or venture capital. Professional game developers also operate on a scale that requires enormous teams and specialized labor that is increasingly

geographically dispersed across multiple locations and studios. These two factors decidedly differentiate the mode of production between the so-called professional and amateur sectors. Yet despite their differences, the relationship between the two remains dynamic. As scholars like Christian McCrea (2013) and Hector Postigo (2003; 2010) have shown, there is a trajectory from the amateur to the professional in video games, one that we can see in the historical example of Apogee's Scott Miller who developed from an amateur developer into a significant game publisher thanks to the success of his shareware model. While questioning the distinctions we collectively make between the amateur and professional game developer, I want to stress that, regardless of where developers fall on the amateur-to-professional spectrum, they increasingly share the same precarious economic conditions as a result of the changing nature of work under globalized capitalism. But more than a path toward professionalism, a pipeline for the creation of value, or even the shared working conditions between the informal and formal development sectors, we need to recognize the discursive relationship that exists between the so-called amateur and professional developer.

In addition to resources and working conditions, one prominent place this discursive relationship manifests itself is in the content of the games themselves. For instance, whether intentionally or not, everyday-developed games respond to the dominant tropes and design dogmas in the formal industry. If most big budget, publisher-backed games are about power fantasies and narratives centered around saving the world, then most everyday-developed games are about the opposite: small, intimate, quirky stories, or games that eschew narrative altogether. If most big budget, publisher-backed games privilege a white, heterosexual, masculine game avatar, or include different identities only through player-created characters, then most everyday-developed games decenter the white, straight male perspective and

feature a variety of protagonists with whom the player can identify, empathize, or simply inhabit. The next section addresses the content and form of everyday developed games directly, illustrating the ways these games respond to, critique, ignore, or reject that dominant content and form of the mainstream global games industry.

The Amateur and the Everyday

Amateur media production is often associated with political activism or dissent. As a result, it faces continual threats from dominant forces that try to defuse its political edge or trivialize its products. Patricia Zimmerman (1995) argues that this trivializing process can be seen in the domestication of amateur video creation in the form of home movies. For Zimmerman, the radical potential of video represented a threat to the status quo, since it could be produced cheaply and disseminated widely. Linking video to the domestic sphere and the production of home movies trivialized its political potential and individualized the format. Rather than a revolution in public communication, video became the means by which people chronicled their personal milestones, something meant for individual, not public, exhibition. Another example of amateur media's radical potential being stripped away is the commercialization of Youtube. While Youtube began with the idea that anybody can create and share video content, entertainment companies have colonized the space, marginalizing amateur video producers and shaping the distribution platform to be much more in line with traditional commercial structures. Like other forms of media, everyday-developed digital games also harbor the potential for radical politics; consequently, they too are often dismissed for their low-fi visual and aural presentations.

In his chapter "Web Zero: The Amateur and the Indie-Game Developer," Christian McCrea (2013) suggests amateur game production challenges and shapes commercial game production. However, McCrea tends to discuss amateurs as proto-professionals who have yet to transition into the industry, men and women who start on small, personal projects and then use the skills learned on these projects to secure a job in the formal industry. On the contrary, the everyday developers I highlight in this chapter generally do not have such ambitions. Transitioning into an industry position would be the exception, not the rule, for these practitioners, who see the industry as a force to critique, refute, or ignore through their often more personal or political game projects.

In terms of content and form, amateur games built with easy-to-use development tools tend to be small in scale, short in duration, and make use of simple text-based, pixel-based, or repurposed graphics. As a consequence of their skill levels, everyday developers largely adopt retro or bricolage aesthetics out of necessity, not necessarily nostalgia or artistic significance. In this way, they illustrate what Michel de Certeau (2011) calls "making do," a tactic employed by the powerless in society to use or re-use everyday objects and spaces in subversive, counter-hegemonic ways. In this case, the use of free and available amateur tools by marginalized gamemakers to produce unique digital games. In many ways, the majority of amateur games might be described as game poems, with the same economy of language and emotional resonance. Of course, I do not mean to imply that everyday developers, as a whole, lack competency in the technical aspects of game creation. Many everyday developers have competencies in art and coding, or they acquire these competencies through the act of everyday development. However, competencies in these areas need not be a prerequisite. Moreover, many everyday developers exhibit other competencies that professional game

developers may lack or do not have the option of expressing; some everyday developers illustrate a complex understanding of cultural theory, identity politics, and power relations in society. In other words, they have a critical perspective on culture and society. Without the need to appeal to a market demographic, everyday developers can translate this critical perspective directly into their game design and narratives.

Aesthetically, everyday developer games tend towards abstract visuals and text-heavy narratives. This is the case because many of the free tools everyday developers use – GameMaker, Twine, etc. – do not support the creation of photorealistic 3D worlds. While amateur developers are increasingly turning toward more advanced game creation engines like Unity and Unreal 4, these programs have much steeper learning curves and thus tend to deter rather encourage everyday game development. In indie film, Geoff King (2014b) describes the particular look and feel of low-budget digital films that have come to define indie cinema in the 21st century as the "desktop aesthetic." Since games are, even more than digital cinema, born on the computer desktop, this might be a transferrable term to denote the shared sensibilities of everyday-developed games, which again rely more on unique, DIY aesthetics than verisimilitude in visuals and physics. As a result, many everyday developer games focus on stylized aesthetics, especially if the everyday developer has a background in art or graphic design. For instance, *Delve* (2014) by Conor McCann, who formerly worked in the advertising industry, features hyper-stylized, vibrant geometric shapes that bounce along with a musical beat; but player interaction is limited to scrolling the mouse along the screen and looking for a secret portal on each screen that transitions players to the next colorful area [Figure 1.2]. Other games might instead focus much more heavily on the narrative, such as projects created using the interactive storytelling tool Twine. An example of a narrative-

heavy, everyday-developed game is *Depression Quest* (2013), discussed later in this section, which chronicles the hardship associated with living with clinical depression [Figure 1.3]. Still other everyday developers might try to engineer a unique game design or mechanic that asks players to engage with the digital game in ways other games have not. Game designer and archivist Merritt Kopas arguably achieved this in her experimental game *Lim* (2012). In *Lim*, players control a blinking, multi-colored block that must navigate a series of monochromatic blocks by holding a button down to blend in with the abstract crowd [Figure 1.4]. The catch is that the longer players hold the blend button, the closer the camera zooms in on the player's block, obstructing the player's view, until eventually the player block returns to its state of blinking, revealing itself to the other homogenized blocks.

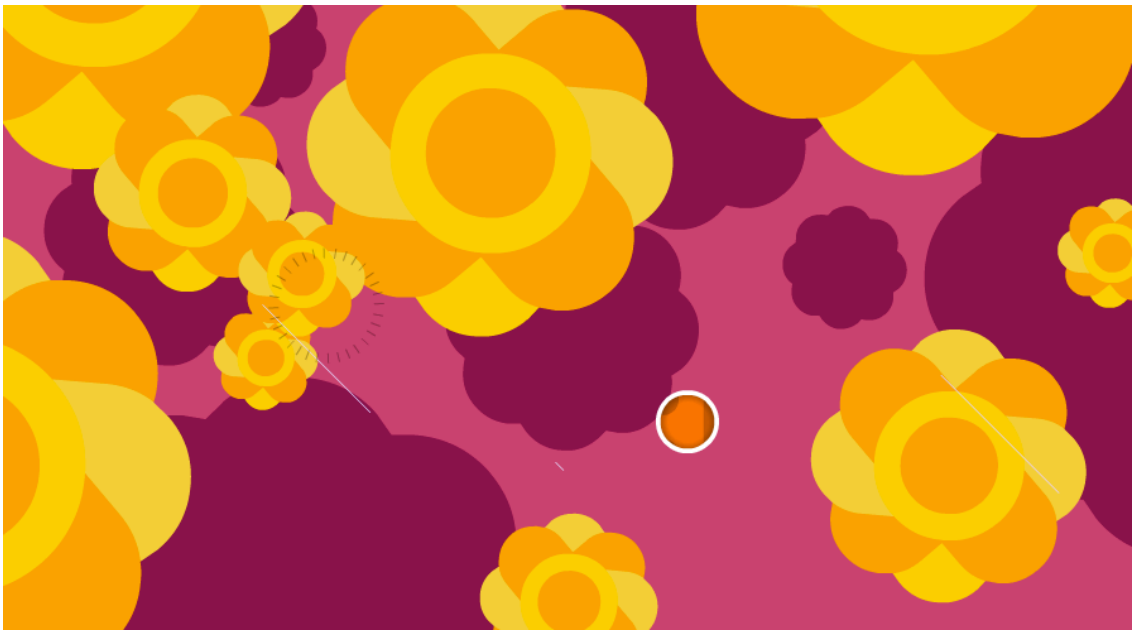

Figure 1.2: In *Delve* (McCann 2014), players search for the hole in the image that will lead them, like a portal, to the next visually stunning area.

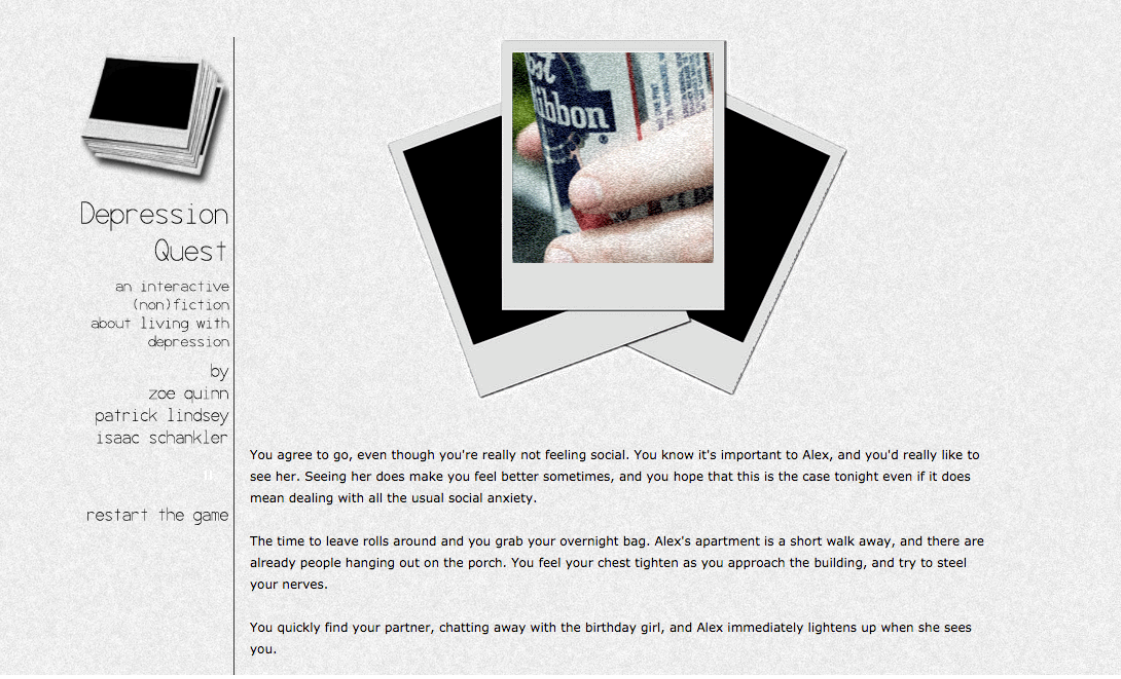

Figure 1.3: In *Depression Quest* (Quinn et al. 2013), players navigate an interactive story about a person suffering from depression.

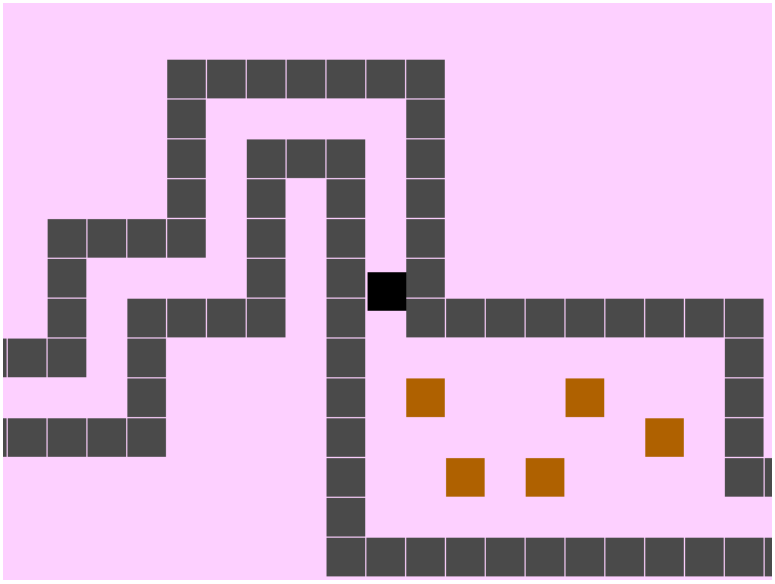

Figure 1.4: *Lim* (Kopas 2012) features abstract representative visuals that challenge players to "pass" in homogenous groups and punish players for standing out from the crowd.

As might be evident, everyday developers attempt to differentiate their games from others using many of the same strategies as commercial indie games. However, the biggest

difference is that, unlike most commercial indie games, amateur developers do not tend to consider their audience nor the potential marketability or profitability of their projects. Their design decisions remain divorced from the changing tastes of gaming audiences. Indeed, important to this chapter is the fact that amateur games are free to challenge the tropes, tendencies, and tenets of the commercial gaming industry, specifically the specter of straight white masculinity that haunts it and the overwhelming emphasis on games that use violence as their principal mode of engagement. Accordingly, the subject matter, presentation, mechanics, and general shape of everyday-developed games vary widely, not only from commercial games, but also from each other. When games become separated from commercial imperatives, their forms, structures, and narratives manifest in myriad and unique ways.

Based out of Oakland, California, critic, writer, and game designer Anna Anthropy has made many small games that communicate personal messages or experiences. *Dys4ia* (2012), an autobiographical game about Anthropy's experiences with hormone replacement therapy, provides an example of the kinds of games that are possible when game development is divorced from commercial imperatives. *Dys4ia* is one of Anthropy's most popular games, and has featured widely in festivals, the gaming and popular press, and has been taught in university game courses, much to Anthropy's chagrin. This is because Anthropy is critical of a pattern of cis white men claiming that their engagement with the game proves some sort of ally status with trans people despite not helping out the cause in any other way. After initially providing the title for free, Anthropy decided to start charging a small amount of money from most people for downloads of the game. Despite Anthropy's salient critiques of the ways her game has been appropriated, I nonetheless want to highlight

Dys4ia as an example of everyday game development on the margins of the video game industry. I do so not to prove or benefit my status as an ally but because it is a prominent everyday-developed game and provides an example of the possibilities of such games, illustrating that, despite the highly developed language, photorealistic visuals, and learning curve of big budget commercial games, digital games can also feature personal experiences, abstract visuals, and accessible controls easy enough for anybody to pick up and play.

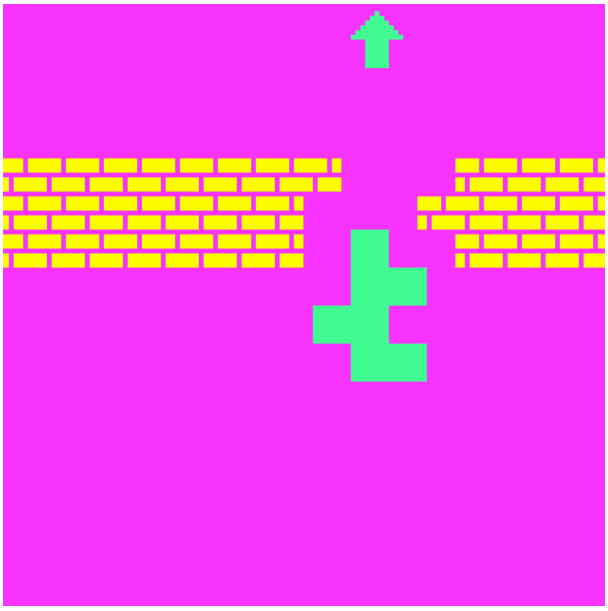

Figure 1.6: In one of *Dys4ia*'s (Anthropy 2012) many vignettes, players try hopelessly to force a unique shape through an impossible opening.

Anthropy designed *Dys4ia* as a short experience that unfolds over four chapters. The first chapter, "Gender Bullshit," illustrates a series of events that encouraged her to try hormone replacement therapy, including her negotiations with certain feminist discourses and feeling like a spy when entering women's bathrooms. The second chapter, "Medical Bullshit," chronicles her travels through the bureaucracy of the healthcare system. "Hormonal Bullshit," the game's third chapter, communicates the trials and tribulations associated with going through the early stages of hormone therapy, including dietary and

emotional fluctuations. *Dys4ia*'s final chapter, "It Gets Better?" phrased as a dubious question, notes the small but significant changes to her body and life while still acknowledging the ongoing social and personal challenges of hormone replacement therapy in a society and culture that does not understand or recognize the therapy.

Visually, *Dys4ia* uses abstract pixel-based art, colored dominantly with solid purples and greens. This abstract, stylized look is paired with simple, arrow-based controls across its dozen or so mini-games mapping Anthropy's journey. One moment the player struggles to fit a Tetris-like block shape through an impossible opening [Figure 1.6], the next moment she navigates a shield up and down on the screen trying to block the accusations of women who doubt her status as a woman. Every few seconds the game scenario shifts, jolting the player from one emotional moment to the next, asking her to think quickly and adapt. The rapid pacing and sudden jumps in *Dys4ia* disorient the player, reinforcing the game's themes of confusion, struggle, and self-doubt. Yet none of the scenarios are meant to be challenging from a mechanical or ludic perspective. The controls are always one of four arrow directions, and the goal of each screen, if there is one, is to communicate one aspect of Anthropy's experience through rote, almost banal player actions. In fact, some screens merely ask the player to wait, a kind of strange agony in traditional video games, which privilege direct action and manipulation of the gameworld over stillness and contemplation. The end result of these design decisions is a six-to-ten minute interactive journey, a digital narrative, or the video game version of poetry or personal essay. It's a game that could almost certainly never exist in the commercial games industry but one that matters to games as much as or more than the latest blockbuster game like *Grand Theft Auto* or *Call of Duty*.

Other prominent amateur gamemakers produce work that is just as remarkable, strange, poignant, or alluring. Christine Love, Merritt Kopas, Robert Yang, Haitham Ennasr, and Mattie Brice, among others, are all well-known everyday developers, many of whom have taught themselves to code after initially experimenting with tools like GameMaker, Construct, or Twine. While some emphasize the artistic potential of games more than others, all produce small games that communicate focused ideas through stripped down visuals, design, and mechanics.

Mattie Brice used a program called RPG Maker to build her game *Mainichi* (2012). RPG Maker allows players to build role-playing games using drag and drop graphical tile sets, event triggers, and dialogue trees. Accordingly, *Mainichi* is a two dimensional game featuring a bird's eye perspective and simple, cartoonish graphics. The game's story involves the player walking around her apartment, getting ready to go out, walking to the coffee shop, ordering drinks, and sitting down to have a heart-to-heart conversation with a friend [Figure 1.7]. The entire experience is consciously mundane, but touched up with ruminations about personal appearance and social interactions, trading on the rhythms of everyday life. The player in *Mainichi* can move her avatar around her house and interact with objects via the ENTER command, resulting in small bits of dialogue. Any kind of aesthetic changes, such as applying makeup or putting on a new outfit, barely register visually onscreen. Yet even as the game communicates the humdrum routine of life, the smallest of decisions like bathing, choice of clothing, and makeup become meaningful when the player exits her house and people on the street begin to scrutinize her, wondering out loud whether the player is a man or a woman or asking to touch her hair. The game recalls the setting and rhythms of domestic life, but unlike popular titles like *The Sims* (Electronic Arts, 2000-present), which simulates

domestic life and places players in an omnipotent, detached role, *Mainichi* tells a very specific story that encourages players to identify with the everyday struggles of a transgender woman.

Figure 1.7: *Mainichi* (Brice 2012)

Appropriately for the concept of the everyday developer, *Mainichi* translates to "every day" in Japanese, a title fitting for the everyday activities the player performs in the short game, and the everyday struggles transgender individuals face when confronted by a society that obsessively reads and writes gender and sexuality onto every body. Moreover, this furthers the usefulness of the term "everyday developers," since the concept refers not only to the way game production fits into peoples' everyday lives but also to the way the everyday informs the content and execution of these games.

For instance, something as simple and as intimate as somebody's daily struggle with depression can become the focus of a game. Zoe Quinn, Patrick Lindsey, and Isaac Schankler's *Depression Quest* (2013) presents an interactive, text-based narrative that explores the trials and tribulations of struggling with clinical depression. Quinn et al. built

Depression Quest using the Twine interactive game engine, a program that makes creating interactive, hypertext fiction as easy as using a typical word processor. Essentially a choose-your-own-adventure novel in digital form, *Depression Quest* includes over 40,000 words that place the player in the shoes of a person struggling with depression while trying to navigate social circles, an unfulfilling job, and various family relationships. As the narrative progresses, the game tracks the player's depression level, therapy progress, and whether or not the player is taking any medication for her illness. Throughout the interactive story, a somber piano tune plays in the background, lending an aurally emotional weight to the otherwise text-based experience. Despite constructing a harrowing story of the vagaries of clinical depression, *Depression Quest* is notable for being one of the most successful games created using the free and open Twine creation tool. *Depression Quest* also happens to be one of the most financially successful games on the alternative game distribution platform itch.io, according to the service's founder (Ww 2014). However, an unfortunate legacy of *Depression Quest* is how the game unwittingly sparked the GamerGate online harassment campaign in 2014 which continues to target women and progressives in gaming on social media to this day.

After an ex-boyfriend of game designer Zoe Quinn accused her of using her contacts in gaming journalism to garner positive reviews of *Depression Quest*, a contingent of self-identified gamers marshaled a campaign of hatred and harassment against her – and eventually against many other female, queer, and transgender game critics and designers. This campaign, which claimed righteousness under the guise of "ethics in games journalism," eventually found its rallying moniker after actor Adam Baldwin named the controversy #gamergate on the social media service Twitter. Despite the fact that the entire basis for the

campaign was based on misconceptions, falsehoods, and interpersonal matters most would consider unequivocally private, the #gamergate mob continued its campaign to discredit and terrorize Quinn and others, going so far as to publish Quinn's home address so that she was forced to move. Anita Sarkeesian, prominent media critic and founder of *Feminist Frequency*, was another central target of this harassment campaign. The members of GamerGate resented the Youtube videos Sarkeesian and her crew made that deconstructed the sexist tropes of major video game franchises. As the #gamergate phenomenon grew, recruiting new members on sites such as Reddit, it waged a vitriolic campaign that almost exclusively targeted feminist and progressive critics, developers, and scholars (Chess and Shaw 2015) engaged in critiques of the gaming industry and culture (Shaw et al. 2014).

I began this chapter by highlighting the problems of racism, sexism, homophobia, and transphobia that haunt the games industry and suggested that rather than wait for major publishers to create commercial games that address issues of representation or marginalization, everyday developers have started to create games that speak to the experiences of those traditionally marginalized in the gaming culture and industry. As the #gamergate controversy illustrates, the concerns of scholars, players, and critics are not without merit. Moreover, the controversy illuminates just how threatened a particular contingent of self-identified gamers feel by alternative voices in the gaming industry and by alternative forms of digital games. This is especially the case for those alternative games that feature material that clashes with the political perspectives or worldviews of self-identified hardcore gamers, a group that adopts a perspective that privileges a cis, white, heterosexual, masculine subjectivity, even if certain members of this group identify as women or people of color. Perhaps more importantly, though, the extreme forms of harassment and vitriol that

have come out of the GamerGate community illustrate the importance of everyday developers and the games they make. *Depression Quest* no doubt gained a lot of notoriety because the #gamergate campaign focused much of its ire on the game's author, but this notoriety came at the expense of its creator's quality of life and safety. In the case of *Depression Quest*, the rhetorical device used to disarm and discredit the amateur game was that it represented a threat to the coherency of the medium.

Most everyday-developed games are not perceived as a threat, per se, but instead as a triviality, something that can safely be ignored at the margins of the medium. As a result, most amateur game creators do not garner the same level of attention as games like *Depression Quest*, for better or worse, and those developers that do want to cultivate an audience and earn even a meager living from their development efforts have to engage in concentrated and ubiquitous social media and self-branding campaigns.

Ubiquitous Marketing and the Post-Industrial Era of Patreon

More people than ever now have access to everyday-developed games in all forms. Yet as everyday creations without formal avenues for distribution, concentrated marketing campaigns, or in most cases established audiences, the majority of amateur games unfortunately go undiscovered, unplayed, and unarchived. Cultivating an audience is not impossible, but it does take dedicated public outreach, a concerted effort to attend gaming festivals and conferences, perpetual self-as-brand management, and an online presence for which most amateur developers do not have time. Nancy Baym (2014) has described this tireless work as the "relational labor of connection," an essential form of labor for amateur and indie content creators that is tacked on to the labor involved in media creation itself. For

successful independent and amateur artists, this labor involves engaging with current audiences and seeking out and welcoming new audiences on a perpetual cycle through the meticulous management of a social media presence.

The need for ubiquitous branding and marketing arguably link the work of amateur game developers to the products of the formalized, corporate games industry. Today game publishers, developers, and marketing departments must continually cultivate and nurture brand awareness. Popular franchises have an array of media that reinforces their brand, including films, TV shows, comic books, video games, websites, social media pages, and mobile applications. Admittedly, the stakes for corporate brands and those for the individual brands of everyday developers are quite different. For instance, corporate brands require an ever-growing mass audience to generate profits for the publically traded companies that own and produce them. Everyday developers, meanwhile, are simply trying to reach a critical mass of fans willing to play, purchase, or otherwise support their game creation efforts. Here, a critical mass is either the number of players the developer feels content with having engaged or, in cases where developers try to make a living from their work, the number of people needed to earn enough money to pay the bills each month. While everyday developers or everyday artists of all kinds cannot hope to match the kind of widespread brand presence of a corporate-backed intellectual property, they still have access to a number of promotional avenues.

Key areas of outreach for everyday developers include Twitter and Facebook accounts, Tumblr pages, personal websites, and generating media attention through participation in alternative game festivals and conferences. Many small game developers also find audiences and exposure at alternative game festivals and conferences like IndieCade in

Culver City, CA and New York, Different Games in Brooklyn, NY, Lost Levels in San Francisco, CA (coinciding with the annual Game Developers Conference there), and the GameLoop Un-Conference in Cambridge, MA. These festivals help small developers connect with their peers and an enthusiast press that can help amplify the potential audience for their game. Everyday developers rely not so much on distribution to reach their audiences but instead on the concept of circulation.

Henry Jenkins, Sam Ford, and Joshua Green (2013) have shifted the discussion on the movement of media away from distribution and toward the idea of media circulation. Whereas they characterize distribution as top-down and controlled, they argue circulation provides a hybrid model that encompasses the centralized and de-centralized movement of media in formal and informal, consumerist and participatory ways. While this perspective tends to ignore decades of grassroots, informal, and participatory media circulation, particularly in historically underserved media communities, it does illuminate the online infrastructures and emerging technologies that people, including everyday developers, have used to build circulation and support networks with fans across the world.

Other ways of distributing and gaining exposure for everyday-developed games include being featured on dedicated archiving and curatorial sites like Glorious Trainwrecks or Forest Ambassador. Both of these sites purport to make visible amateur development efforts that might otherwise never find an audience, but each approaches the problem of archiving and discovery in its own way. Glorious Trainwrecks, for instance, cultivates an aura of nostalgia for a time, the website claims, in the early 1990s when people would experiment with game development on their computers without a worry about polish or player expectations. The site claims to be “bringing back the spirit of postcardware” that

encouraged a sense of bricolage game production, where developers might reappropriate graphic and audio assets from existing media like TV shows, photographs, or other video games ("Glorious Trainwrecks" 2016). Postcardware evokes the shareware business model popularized by Scott Miller; however, rather than money, under this model creators ask only that players send them postcards in the mail or express their thanks through an email message. The reward for creating software under this model is not monetary but instead social and emotional -- the pleasure that comes with receiving messages from people all over the world and knowing you are reaching players globally. Glorious Trainwrecks offers a game archive, a developer diary section for developers to discuss their ongoing projects and craft, a forum for members to collectively discuss topics, and a Wiki page that attempts to define the various aspects and mission of the website.

The curator and developers of Glorious Trainwrecks appear motivated by a lost sense of the past, a time when "true indie gaming" supposedly reigned, and situate their efforts as if in homage to an earlier period in amateur game development, before the current era of commercialized indie games. This site evokes an emotional response common in the discourses surrounding contemporary indie games, which are often framed as somehow compromised by their market-focus. Indeed, a cursory look at the games featured on Glorious Trainwrecks reveals an array of creations with patchwork or underdeveloped graphics and audio, games that have value not because they represent polished gamemaking but because they revel in the gamemaking process itself. Indeed, the critique Glorious Trainwrecks offers is not one of content, necessarily, but of the clean, almost sterile, error-free productions of games that compete in the marketplace today (of course, this critique ignores the incredible amount of bugs and glitches so-called triple-A blockbuster games ship

with in an effort to meet strict release deadlines). The site privileges the process of creation, the actual act of amateur game design, not necessarily the final finished artwork.

Forest Ambassador provides a similar, yet more accessible, curated space for amateur games, one that also privileges an inclusive, queer, and feminist perspective. Founded and operated by Merritt Kopas, a multimedia artist, game designer, curator, and writer, Forest Ambassador is a curated space built on the Tumblr platform that highlights free, short, and accessible games by obscure gamemakers on a regular basis. Kopas describes the space as "artist-oriented," a way to bring visibility to other gamemakers that do not have the following that she enjoys after years of building, writing about, and promoting everyday-developed games. As Kopas writes, "Whether it's because they're short, 'unpolished,' or don't look like what we typically think of as 'videogames,' these works don't often get spotlighted by games media, who tend to focus on larger, commercial releases" (Kopas 2016). Rather than the traditional website features of Glorious Trainwrecks, Forrest Ambassador is a paired down website that features an ever-expanding, scrolling list of updates. The site features four new games every week and as of April 2015 had featured over 270 different small and unique games. As a result, Kopas's work with Forest Ambassador begins to address the issue of visibility for everyday developers, and the emergence of more stable institutions for their games' curation and distribution. The site also goes out of its way to address how video game cultures tend to alienate many people who are not immersed in the world of the newest and biggest video games, cultures which privilege expertise or mastery and a white, straight, masculine gamer subjectivity. In contrast, Forrest Ambassador strives to be an inclusive space that celebrates the accessibility and humanity that digital play can explore. While neither Glorious Trainwrecks nor Forrest Ambassador have solved the problem of

discoverability for non-commercial games, they represent a model from which other everyday developers or people interested in everyday game development might improve and grow.

In his analysis of amateur Japanese RPG makers, Kenji Ito (2007) argues that for amateur gamemakers to be successful, all they require are accessible creation software and a nurturing community of peers. Emma Westecott (2013) has a similar metric for success, although one informed by feminist practices. She suggests, "Success in this sense means the ability to open up and maintain engagement with diverse groups of people." Yet neither Ito nor Westecott specifically mention any kind of financial support as a metric of success for everyday developers. Ito assumes all of the amateur developers he examines have stable employment or income outside of their respective game development efforts. However, some amateur designers are not so fortunate. Thus, what everyday developers need in addition to accessible software and community support is a means of economic survival. This is particularly true in the United States context because of the lack of universal healthcare. While most everyday developers have no desire to join the formal networks of the games industry, some nonetheless would like to earn a living based on their creations, at least enough to pay for rent and food and the opportunity to create another game project. Thus, while we might imagine non-commercial games to be somehow outside of the demands of capitalism, we cannot make the mistake of thinking the same of the game designers themselves. The reality that we are all implicated in the capitalist system changes Ito's criteria for amateur success.

Under a capitalist system, the existential need to find a method for economic sustainability quickly counterbalances the benefit of creative freedom. Again, most everyday

games are built for free, with any budgetary costs being reducible to the cost of living and computer hardware. Yet these are very real costs, and as such, in addition to charging nominal fees for some game downloads, several prominent everyday developers have started to use crowdfunding options like Patreon to survive. Indeed, the shareware models of the late 80s and early 90s have not only given way to the free-to-play model popular with mobile titles, but also to the crowdfunding models of today.

Founded in May 2013 as a venture startup, Patreon "was created to enable fans to support and engage with the artists and creators they love." Through Patreon, fans sponsor individuals and contribute a set amount of money usually once per month. These strategies and opportunities are not limited to the gaming sector, as amateur and indie artists across media have turned to ubiquitous, networked, digital tools in order to produce, promote, and disseminate their creations (King 2014a; Christian 2015). Patreon, for instance, is popular among independent writers, musicians, artists, youtubers, and game creators. Patreon gives fans the option of funding their favorite everyday developers, many of whom would not be able to create games if they had to find an income elsewhere. For instance, Merritt Kopas uses Patreon to support her efforts operating Forest Ambassador. According to Kopas, she basically survives on her work with Forest Ambassador and her regular podcast associated with the curatorial site.

In terms of media production, Raymond Williams (1981) identifies the pre-industrial era as the era of patronage, in which wealthy aristocrats would sponsor artists so that they could dedicate their energies to creating paintings or other works of art. The system of patronage contributed to the creation of a division between craftsmen and artisans. Craftsmen would produce practical products that catered to public tastes, such as chairs or clothing.

Meanwhile, artisans would create unique, singular products that were one-of-a-kind and meant more for appreciation than for use. Under patronage, artisans could work freely without considering the tastes of the mass audience. After the industrial revolution, the development of commodity capitalism and mass-production made it possible for artists to reproduce their works for mass consumption. However, this also put the artisan in a bind. On the one hand, artists no longer needed to depend on wealthy patrons, since they now had access to the market of anonymous consumers that could buy reproductions of their work. On the other hand, artists now had to bend to popular tastes in order to sell enough of his or her artistic product to make a living. In other words, what the artist gained in the ability to reach a mass audience, he or she lost in creative freedom. In our current era of digital capitalism – what we might call, after Williams, "the post-industrial era of Patreon" – crowdfunding websites spread out the position of the single wealthy patron across a group of people who share similar tastes and socio-cultural positionality. This seems to allow for creative autonomy irrespective of market whims while still providing access, if not connection, with an anonymous mass audience.

Having to rely on Patreon also means having to rely on people willing to essentially subscribe to an individual and their work. The reliance on community donations or support to remain active creators arguably shifts these artists from craft gamemakers, as Emma Westecott refers to them, to what has been called DIWO (do-it-with others) media producers (Catlow and Garrett 2007). There is something to be said about the collective nature of this kind of game production, even if the contributions from the community come more as support than production, either through financial contributions or emotional encouragement via posting on Patreon updates. Since many of the games created by everyday developers are

very niche, quirky, or personal in nature, people who support particular developers tend to be those with similar identity makeups, socio-economical status, educational capital, political interests, or a combination of these elements. The result is not so much support from financially secure benefactors, as you might see in traditional patronage relationships, but instead what Kopas and others have described as a "horizontal shuffling of money," or something we might identify as horizontal patronage.

Horizontal patronage is a key feature of the post-industrial era of Patreon under globalized capitalism. Certainly, there are a few successful commercial indie developers that contribute monthly support to a few select everyday developers (indie versions of investor angels), but by and large the support everyday developers receive is from others sharing the same experiences or facing the same financial troubles. In other words, despite the fact that crowdfunding services like Patreon provide a means of economic subsistence, the crowdfunding companies and their escrow partners like Paypal benefit to a much greater degree than creators or patrons. Not only do these companies receive a cut of every donation; they also collect the personal data of supporters and artists that they can monetize through advertising partners. Although an important resource, sites like Patreon remain vexing for everyday developers who see themselves as critical of the market system represented by the dominant games industry.

Addressing these concerns as they unfold, scholars of digital labor have proposed alternative futures for work and crowdfunding that fall in line with the ethos of many everyday developers trying to earn a living from their games. The alternative to privately held, venture-backed platforms, like Patreon or Kickstarter, would be what these scholars call "platform cooperativism," or what Trebor Scholz describes as "experimentation with good

digital work and new forms of solidarity" where workers band together to construct "their own labor platforms and design interventions, rooted not in greed but the needs of workers" (Schneider 2015). While this model is primarily encouraged to replace freelance "share economy" applications like TaskRabbit or Uber, which exploit workers and local communities while earning billions in investment and (offshored, non-taxable) revenue, it can also be applied to crowdfunding services that benefit from the struggles of artists across all media. For example, a hypothetical, cooperativism-run crowdfunding platform would not skim from every transaction, taking money from struggling patrons and artists alike, but would instead exist solely as a support platform, connecting the two communities and surviving, much like Wikipedia, off of the donations of its users and artists. Aware of these issues, Kopas spends a great deal of time thinking about how she can use Forest Ambassador as a platform "that could sustain work outside of more traditional market models" (personal comm., April 2015).

The working conditions and challenges everyday developers face are not unlike other independent media artists under globalized capitalism. For instance, we can see parallels with other groups of independent content creators, like Youtubers, who have to cultivate a brand around their personalities in order to secure financial opportunities outside of Youtube's limited partner program that provides "pocket change" revenue for most fulltime content creators (Dunn 2015). These everyday content creators make use of social media tools, like Twitter, Tumblr, Facebook, Instagram, and the latest popular social apps in order to connect with passionate audiences who are willing to financially support them and their videos. Many Youtubers also rely on Patreon subscribers in addition to Youtube payments in order to make ends meet. What this new generation of young, independent content creators share is a

precarious position that exists at the whim of powerful conglomerates and corporations they depend on for survival. While many are actively trying to infiltrate professional circles and further their burgeoning careers, others see themselves in opposition to the same systems that they must rely on for their livelihoods. In the end, the everyday-ness of everyday game developers can also be seen as the everyday struggle to survive on the margins of capitalism, on the margins of the games industry, and indeed in some cases, on the margins of a society and culture that refuses to invest value in the narratives and forms of those who exist on the very margins of discourse.

In chapter three I more thoroughly examine the difficult working conditions and precarity those working in the commercial games industry must endure, whether at corporate or indie studios. These conditions include long hours, unpaid overtime, job insecurity, and a mobile lifestyle. Professional developers often work 10 to 12 hour days, many of which are not compensated with overtime pay. Most developers stay in their jobs for only two to three years at a time. Many are also put in the tough position of having to uproot their lives and families and move across countries or continents in order to secure work. Although developer salaries may seem adequate, when seen vis-à-vis employment precarity, the elite, glamorous job of a game developer loses much of its attractiveness and luster. In many ways, everyday developers reflect the structural failures of the larger, formalized industry on an intimate level, not to mention the general decline in working conditions across the media industries in general, where the problems of precarity and flexibility loom large. These struggling artists and gamemakers face the same pressures as those developers within the industry writ large, but unlike established industry employees, everyday developers lack the admittedly flimsy safety nets provided by the "professional" status of industry workers, which can be used to

secure future work but guarantees no safety that the coder or artist will not be out of work again in a few months or a few years.

What divides a professional and amateur game developer? Each faces similar precarious financial and employment situations. Each must engage in a continual campaign of ubiquitous self-branding in order to secure work or maintain an audience. The labor of each often remains invisible and unacknowledged. Both groups must navigate an industry, either in its center or margins, dominated by a handful of corporations that own access to the largest, most lucrative pockets of potential customers. Instead, what separates an amateur from a professional game developer are a few notches on a resume, some specialized skillsets, and a professional status gained from employment at a recognized commercial developer or publisher. Shifts in industrial, technological, economic, and cultural processes and practices have dissolved the previously staunch barriers between the amateur and the professional, creating a vast landscape of digital games and digital game creators, all of whom find themselves struggling to find a sustainable position within the shadow of global, post-industrial capitalism that creates and devalues marginal production communities only to then turn around and extract any value they might create once they dare strive to de-center capital's otherwise dominant, yet importantly always fragile, position within media production.

Conclusion: The Amateur as Proto-Professional?

I have discussed the discourses that construct the amateur/professional binary and have offered some evidence to suggest these distinctions conceal similarities (precarity of labor,

distribution platforms) between workers in each discursive category at the same time that they under-emphasize important differences (access to capital and prestige, for instance). Additionally, I have offered the term "everyday developer" and "everyday-developed games" in an effort to overcome the cultural stigma of "amateur media," as well as de-privilege the work of game creation and promote a spectrum of game development with various distances from the formalized, global games industry. This move is to disrupt the amateur/professional binary, which exists only to assign value to one group while denigrating the other. Yet this term also calls attention to the importance of everyday routines, activities, emotions, and struggles that can find shape in games built in the context of everyday lives. Christian McCrea and others have argued that amateur developers or hobbyist modders largely use their individual efforts as a foundation from which to launch their careers in the dominant, global games industry. This correlation between amateur and proto-professional rubs some everyday developers the wrong way. Merritt Kopas, in fact, distances herself from the term, explaining:

> "I'm on a different trajectory than that. I don't see myself moving toward that kind of job. It doesn't seem applicable. I see people use 'aspiring' in the same way. If you're not going for that goal, then you're not 'aspiring,' you're already doing it. If you're making games, then you're already a designer or a developer. So amateur is not a term I would use for myself" (2015, pers.comm., April).

This sentiment, a rejection of the amateur moniker based on its presumed aspirational connotations or status as somehow inferior, echoes the comments of many men and women who might arguably be called everyday developers. There is, at once, a condemnation of the industry and the goal of being a part of its grand machinery, and a demand to be taken seriously as legitimate game developers whose creations are just as whole, complete, or

otherwise valuable as the world's largest gaming franchises churned out annually by multinational game publishers.

As Broderick Fox (2004) wrote over a decade ago regarding the role of emerging digital technologies and amateur media production, "[W]hat constitutes an 'act of media production' is rapidly and undeniably changing. From web page design to the simple act of penning an e-mail, media production is becoming an inescapable part of daily life, rather than the domain of a select professional elite" (14). Today people of all skills can exploit free and available toolsets to create digital games that reflect their own life experiences. In doing so, everyday developers are changing our conceptions of video games. Anthropy (2012) argues:

> "Games from hobbyists have the potential to change the dominant format of the videogame: instead of seventy-hour multimillion dollar games that sell for sixty bucks apiece, digital games can be short and self-contained – less than an hour, short enough to fit comfortably into an adult player's day" (19).

Amateur games, then, are the games of the everyday, built in the context of the everyday, played in the interstices of the everyday, and often featuring everyday experiences.

I have focused on marginalized everyday development practices as one avenue of progressive change for the medium of digital games, but I want to join Adrienne Shaw (2015) in her criticism of those that argue that this is the only front on which feminist and social critics should be battling. As Shaw asserts, one theme in the discourse around representational equality in gaming is the demand that marginalized peoples become developers themselves and create the games and the change that they want. As Shaw writes (2015), "It is not an inherently bad thing to encourage more people to use the tools available to them to make their own games. However, to pretend that there are no structural inequalities in who gets to make games (even indie games) is very shortsighted." Indeed, I have addressed these structural inequalities in this chapter with references to economic

sustainability, audience cultivation, and the time needed to invest in development. Shaw is correct to point out that urging for more marginalized development is not the only answer. To think so places an undue burden on marginalized populations and fails to recognize the responsibility the commercial industry has to tell more creative and diverse stories. Despite the fact that achieving change within the dominant industry is difficult and slow-going, it is still worth continuing. It is, after all, the place where such critiques are needed the most.

II. NES Homebrew and the Margins of the Retrogaming Industry

Indie games should not be discussed as a monolithic, coherent category. Instead, independent digital game development ought to be recognized for its varying and diverse production cultures that exist in relation to one another, each with its own platform preferences, aesthetic tendencies, political positions, production practices, commercial imperatives, and differing degrees of intimacy with the dominant commercial industry. This chapter explicitly examines the niche community of hobbyist homebrew developers for obsolete video game platforms, situating such development practices within the larger ecology of the commercial retrogames industry.

In 1983 Atari famously buried millions of game cartridges, including the infamous *E.T.* (Atari 1982), in the Alamogordo, New Mexico city landfill after they failed to sell (*The New York Times* 28 September 1983). In *Game After: A Cultural Study of Video Game Afterlife*, Raiford Guins (2014) chronicles this event in order to call attention to the lifecycle of video games, including what he calls their "afterlife" when game technology drops out of formal channels of exchange and finds its way into junk yards, thrift stores, personal collections, and cultural institutions like museums. Colloquially, the great Atari burial marked the beginning of the 1980s North American video game crash and a loss of faith in the industry (Donovan 2010, 108-9). Following the industry crash, Nintendo entered the North American console market in 1985 with its Nintendo Entertainment System (NES). Thanks to strong initial sales in New York, word-of-mouth, and games like *Super Mario Bros*. (Nintendo 1986), the NES revitalized a dwindling video game market. However, after several successful years, Nintendo orchestrated the obsolescence of the Nintendo

Entertainment System with the release of the Super Nintendo Entertainment System (SNES) in 1991. Over the next few years, development for NES gradually ceased and market attention shifted to the 16-bit era of console gaming defined by Nintendo's SNES and Sega's Genesis game consoles. In 1995, Nintendo abandoned production on the NES hardware completely. Like the Atari VCS before it, the NES became seemingly fixed in history, abandoned to the ravages of the aftermarket at garage sales and thrift stores, thrown away to fester in landfills, or quarantined to private or institutional collections in archives or museums. However, one group of hobbyist game developers did not want the story to end there.

The practice of homebrew development refers to at-home video game or software development, often for proprietary platforms. Homebrew development is often associated with illegal activity such as running pirated software or unofficial operating systems on otherwise restricted computing hardware. One particular subsector of homebrew culture is homebrew retro game development for older and outdated video game consoles, perhaps most notably on the Atari VCS (1977-1992) and the Nintendo Entertainment System (1985-1995). Ostensibly what Sterling and Kadry (1995) have called "dead media," these failed or obsolete platforms and technologies have been abandoned by commercial and popular cultures in favor of newer technologies with increased functionality and fidelity. Retro homebrew games are generally created using development emulators that recreate the technological constraints of older platforms. This is so the games can operate on the original hardware when dumped onto physical media like NES circuit boards incased in game cartridges. For NES homebrew development, as well as other 8-bit systems, that means programming using the 6502 assembly language, code designed to operate with 8-bit

microprocessors introduced in 1975 and used in various home computer technology including Nintendo's first home console. As a practice, therefore, retro homebrew development challenges the obsolete status of older gaming hardware and breathes new life into ostensibly dead media.

This chapter addresses a complex array of historical, social, political, cultural, economic, and environmental concerns that coalesce around the practice of contemporary NES homebrew game development. Scholars like Melanie Swalwell (2007) and Jaroslav Švelch (2013) have written invaluable histories of homebrew development in 1980s New Zealand and Czechoslovakia, respectively, for platforms like the ZX Spectrum. Meanwhile, Casey O'Donnell (2014) has discussed the technological and commercial contributions of homebrew development in relation to contemporary gaming platforms. Yet few scholars have engaged with contemporary homebrew game development for outmoded systems, which raise a different set of questions, including those that deal with obsolescence, residual media, age and value, and nostalgia. Specifically, I foreground the retrogaming industry that commoditizes digital game nostalgia, drawing connections between the formal operations of this industry and its alternative forms exemplified in NES homebrew development. The NES and other forms of retro homebrew exist within the greater economy of the retrogaming industry, but retro homebrew differs considerably from industry interests in a number of ways. In its reverence for both the hardware and software of the NES era, the NES homebrew community insists on the continued value of aging technology in the face of rapid innovation, preserves historical development practices, encourages a model of game development and consumption that indirectly challenges the larger cultural myth of the technological sublime, and opposes the consumer electronics industry practice of manufactured obsolescence. Thus,

this chapter is in dialogue with Nathan Altice (2015) in "critiquing the notion of a platform as a stable configuration of hardware and software," and instead illustrates how the NES continues to see "constant revision, mutating to adapt to new cultures, new play practices, new markets, and new genres" (7).

The Retrogaming Industry

James Newman (2004) has described retrogaming, the playing of older games through emulation or on original hardware, as one of the significant trends in gaming today. The word retro comes from Latin and means backward or backward looking. This fixed attention to what has passed often assumes the form of nostalgia. From Greek, nostalgia implies a longing to return home, either a real or imagined one. Indeed, Jaakko Suominen (2008) argues that the growth of digital culture, including gaming, has involved a continual return to and recycling of past media cultures, a pattern especially visible in retrogaming practices. In addition to the individualized, psychological dimension of nostalgia, Suominen emphasizes the shared, collective nature of the concept, one that manifests in a group desire to return to a shared past. It is this collective nostalgic desire, argues Suominen, which capitalist enterprises seek to exploit through products and services that harken back to the past, or what Whalen and Taylor (2008) describe as the "cultural commodification of memory through consumable media forms" (6). In gaming, this cooptation of social and cultural memory becomes a marketing strategy for the retrogames industry, a subsector of the larger gaming industry dedicated to revisiting the history of the medium, repackaging it, and re-selling it to consumers, many of whom wish to reconnect with earlier periods in their gaming lives.

The retrogaming industry, therefore, effectively exploits peoples' intimate memories of older gaming technology, transforming it into a continual stream of revenue derived from nostalgic consumer products. The most visible form of this practice within the dominant industry can be found in the digital storefronts on all three major consoles where players can download and play classic games on today's hardware through emulation. By "classic games," I mean games from previous console/PC generations that have achieved a certain level of cultural currency, either through sales numbers or critical praise. In fact, Nintendo essentially relies on the classic status of many of its older titles and the nostalgia they inspire as an overall business strategy. The company continues to exploit its library of classic games, characters, and franchises to sell its latest consoles and software. Nintendo not only sells emulated versions of past games through its Virtual Console service on platforms like the Wii U and 3DS line of products; the company also exploits the nostalgia of its fans in many of its new releases, most aptly illustrated with the latest iteration in the *Super Smash Brothers* (1999-present) series, a game franchise that exists as a kind of virtual history museum for Nintendo's intellectual property.

Outside of the major platform holders like Sony, Microsoft and Nintendo, third party publishers have released countless retro game collections, including the series of Namco Museum games, like *Namco Museum Vol. 1* (Namco 1996) and *Midway Arcade Treasures* (Midway 2003). Additionally, various other companies license classic gaming properties to sell a variety of accessories, apparel, and electronics to retrogaming audiences. For instance, AtGames has an entire series of licensed plug-and-play devices modeled after the classic Atari, IntelliVision, ColecoVision, and Sega Genesis game consoles. These living room devices are facsimiles of the original console hardware and contain hundreds of built-in

games for players to access. Even many commercial indie game developers exploit variations on retro, pixel-based aesthetics, inspired by 8- or 16-bit graphics of the 1980s and early 1990s. Just a few examples of this trend include *Cave Story* (Studio Pixel 2004), *Terraria* (505 Games 2011), and *Papers Please* (3909 2014).

One of the major trends in commercial indie game development is a fascination with earlier epochs in gaming history. This reverence can be seen in the design, aesthetics, and countless allusions to classic video games across the spectrum of indie-produced digital titles. In recent years, indie hits like *Super Meat Boy* (Team Meat 2010) and *Shovel Knight* (Yacht Club Games 2014), among dozens of other titles, mimic 8-bit aesthetics and design while also containing an array of allusions to classic NES game titles like *Super Mario Bros.* (Nintendo 1985)*, Mega Man* (Capcom 1987), and *Castlevania* (Konami 1986). *Super Meat Boy* includes many references to classic video game culture, such as a recreation of a scene from *Casltevania* [Figure 2.1], or levels mimicking the graphical limitations of the Game Boy handheld device, originally released in 1989, replete with gray scale visuals and reduced aspect ratio [Figure 2.2]. *Shovel Knight* developer Yacht Club Games similarly used the limitations of the NES hardware as a guiding philosophy when developing its homage to NES adventure games, only deviating when necessary, such as widescreen displays, parallax scrolling, the elimination of sprite flickering, and the addition of colors beyond the NES' 54 color limit (D'Angelo 2014). Furthermore, in addition to graphical limitations, *Shovel Knight* also borrows core mechanics from the NES game *DuckTales* (Capcom 1989), such as a pogo stick ability, as illustrated in Figure 2.3. Commercial indie games adopt a retro aesthetic for multiple reasons, including industrial, technological, economic, and political motivations. Indie developers often choose a retro visual design because it is less resource-intensive to

produce than photorealistic 3D graphics. They might also embrace a retro aesthetic because it represents a deliberate affront to modern blockbuster visuals, a choice predicated on aesthetic and political considerations. However, the choice of retro visuals also suggests that indie developers recognize the robust preexisting market for retrogames into which they can tap.

Figure 2.1: *Super Meat Boy*'s (right) allusion to *Castlevania* (left).

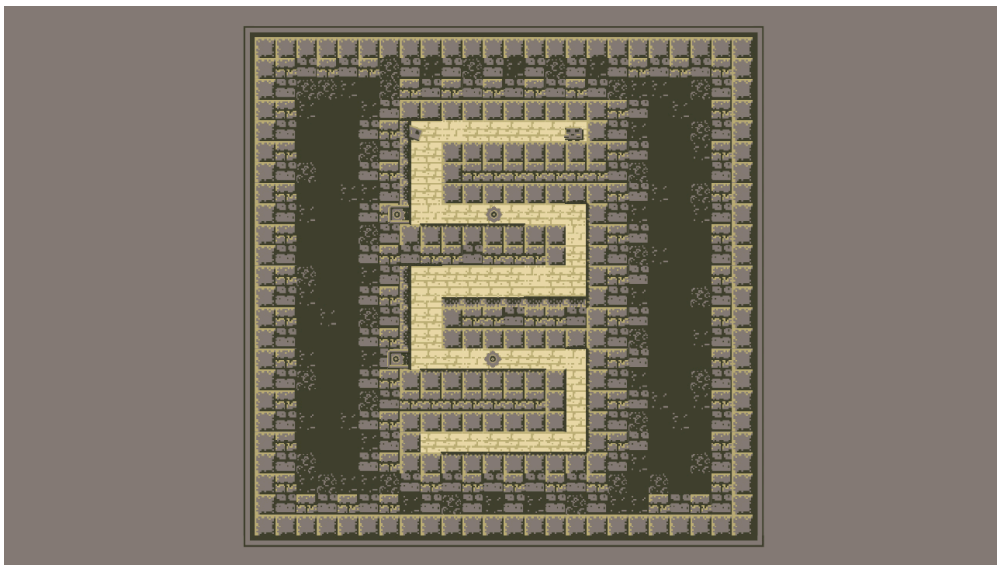

Figure 2.2: An example of *Super Meat Boy*'s Gameboy-inspired levels.

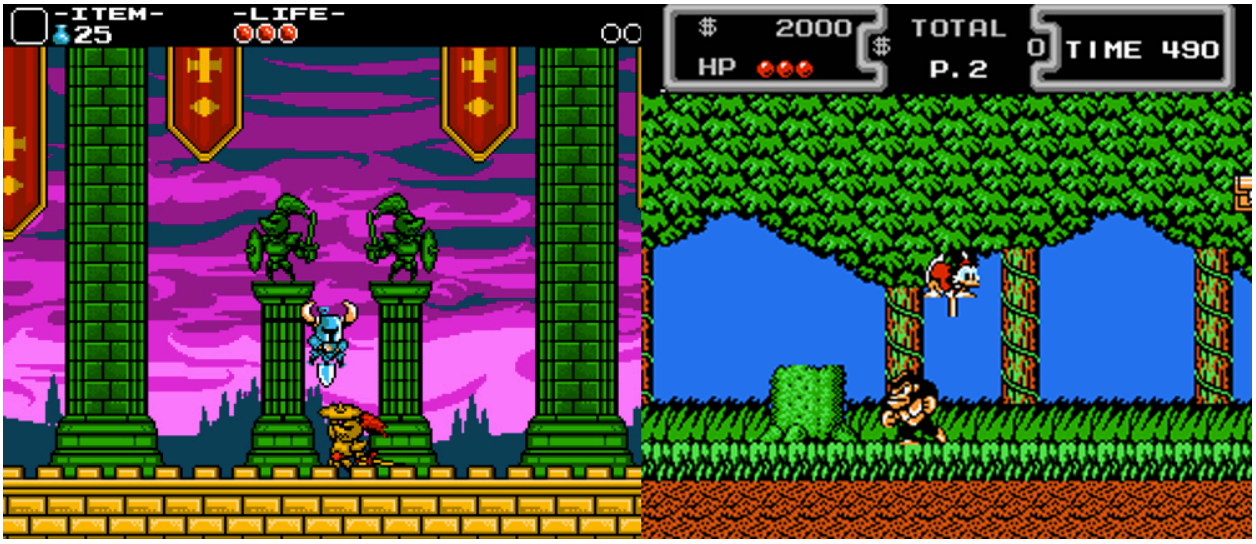

Figure 2.3: A comparison between *Shovel Knight* (left) and *DuckTales* (right)

The retrogaming industry would not exist without an enthusiastic consumer base. According to the Electronic Software Association (ESA), a U.S. industry trade group, the average game player is 35-years-old (ESA 2015). This means the average player in 2016 was born slightly before the release of the Nintendo Entertainment System in 1985 and is part of the so-called "Nintendo Generation" of players (Kline et al. 2003). Additionally, the ESA reports that the average age of the most frequent game purchaser is 37-years-old. This suggests that the audience most likely to be interested in 8- and 16-bit era games overlaps significantly with the audience most likely to make a gaming purchase. The data collected and distributed by the ESA should be eyed critically, of course, considering the organization exists to promote the gaming industry as one that caters to all demographics and has a vested interest in promoting an older, more affluent consumer base. However, these statistics suggest a sizable consuming audience familiar with games of the 1980s and 1990s, the period currently in vogue in the retrogaming industry. It is this audience to which the industry attempts to sell a commercialized form of gaming history by exploiting the nostalgia many of these players have for the games of their childhood.

Matthew T. Payne (2008) examines the commodification of retrogaming nostalgia in his discussion of "Plug it in and Play TV Games" (PNP), like the AtGames products mentioned above. In his work, Payne contrasts profit-minded PNP games with the more participatory Multiple Arcade Machine Emulators (MAMEs), computer programs that allow users to emulate classic video games on their PC. Payne argues the amateur archivists of the MAME community "destabilize the corporate firm's authoritative hold on authoring, distributing, and mediating the classic game experience" by sharing files via peer-to-peer networks over the Internet (56). David Heineman (2014) has framed such contestations as ones taking place between industry-controlled "official" game histories and fan-controlled "vernacular," collective memories. Engaging with the concept of collective memory, Payne borrows James Wertsch's definition as one where "a community's sense of a common past is founded on its shared 'textual resources'" (53). In the case of NES homebrew developers and players, these shared textual resources include the material aspects of NES-era gaming culture, such as the NES system, games, and peripherals. Whereas the retrogaming industry exploits nostalgia for financial gain, the retrogaming community instead uses vintage games as vehicles to nostalgically explore their own past and form communal bonds with others who share their interests and experiences with earlier gaming technologies. Although MAME users share the same enthusiasm for classic video games with NES homebrew developers and players, the latter group also supports the production of new titles for the obsolete NES console and invests in the preservation and use of the original, material hardware.

Recognizing Payne's dichotomy between the corporate, hierarchical, official retrogaming industry and the egalitarian, free, unofficial ecologies of exchange exemplified in the MAME community, I propose that the practice of NES homebrew development and

distribution falls ambiguously between the two. While NES homebrew represents an attempt to carve out a space divorced from the nostalgia industry's control of classic gaming experiences, many of the most popular NES homebrews are nonetheless sold online as packaged goods through small websites akin to kiosks one might find in a street bazaar. NES homebrew developers therefore arguably trade in the same nostalgic currency as the dominant retrogaming industry, albeit on a much smaller scale and within what Ramon Lobato (2012) identifies as a "shadow economy," or an informal system of commodity exchange. Like MAME users, NES homebrew developers destabilize the gaming industry's control over classic video games; however, rather than doing this through the ambiguously legal and free activity of ROM exchange and collection via the Internet, NES homebrew developers create what Andreas Huyssen (2000) calls in the context of film, "original remakes," or new games that share the same format, limitations, feel, and mechanics as classic games but rely on novel, rather than repackaged, intellectual property. Instead of subverting established classic gaming canons, NES homebrew developers desire to create continuity with older games and contribute to the canonical NES library.

This difference, that the most popular NES homebrew games are sold as packaged goods, implicates them within the greater retrogaming industry, albeit at an arm's length; indeed, what sets the efforts of the NES homebrew community apart from the industry's ordinary commodification of retrogaming nostalgia is their establishment of alternative, shadow marketplaces outside of the official industry and, equally as subversive, their fetishization for the original hardware and its limitations. Whereas Nintendo and other corporate gaming firms are more than happy to sell emulated versions of older games on more advanced hardware, the NES homebrew community acts in congress with a network of

people who collect, refurbish, and recirculate classic NES games, hardware, and peripherals. Therefore, while hobbyist NES homebrew developers trade in the same nostalgic currency as the dominant retrogaming industry, they do so, as the following sections examine, through alternative production and distribution networks and for reasons of reverence and communal nostalgia rather than significant – or any – financial gain.

(Re)Capturing the 8-Bit Feel

When official development for some gaming platforms ends, dedicated groups have historically emerged to continue support and development for them, reflecting the unique relationship many video game fans have to specific gaming hardware. This tendency for some users to reject the latest technology in favor of familiar devices, at least in terms of classic game communities, has less to do with the learning curve of adopting new hardware and more with the emotional bonds players form with particular brands and technologies. For the purposes of this chapter, I differentiate between homebrew development and modding communities. In gaming culture, modders are people who alter the base code, engine, or assets of a game to produce a modified version of it. Scholars have examined this cultural practice in terms of a wide variety of motivations, such as playing, hacking, researching, self-expression, and cooperation (Sotamaa 2010), its post-industrial logics (Postigo 2010), and the industry's tendency to exploit this kind of free "playbor" (Kucklich 2005), a neologism that represents the confluence of play and labor on the margins and center of the games industry. Mods can be as simple as changing a game mechanic or as complex as full conversions, which essentially produces a new game from the building blocks of the original modded game. There are examples of modding communities continuing to support older games, like

defunct massively multi-player online role-playing games such as *Ultima Online* (Electronic Arts 1997) or open world games such as *Grand Theft Auto IV* (Rockstar 2008). However, I concentrate on homebrew development communities that, on contrast to most modding communities, coalescence around so-called obsolete or classic video game hardware platforms. Many consoles of the 1980s and 1990s produced hobbyist homebrew communities who went on to develop original games for these platforms following their commercial obsolescence. In addition to the NES, popular retrogame platforms with notable homebrew communities include the Commodore 64, Amiga, Spectrum ZX, and Atari VCS.

Nick Montfort and Ian Bogost (2009), for instance, discuss the Atari VCS homebrew community in their book *Racing the Beam: The Atari Video Computer System.* They highlight the community's commitment to "using and refining emulators, writing disassemblers and development tools, and even manufacturing cartridges and selling them, complete with boxes and manuals," all activities mirrored in the NES homebrew community (155). Montfort and Bogost compare the Atari VCS community to zine authors or unsigned bands, offering free downloads of many of the games. However, these comparisons seem to downplay how the sale of boxed copies for some Atari VCS games implicates the community in the commercial practices of production and distribution, albeit through informal channels. More importantly, though, the sale of boxed copies illustrates the way nostalgia becomes bonded to material objects associated with the past. Homebrew Atari VCS games exist in a liminal space between the fully commercialized life of the Atari VCS, roughly between 1977 and 1983 when the console was kept stocked in most electronics stores, and the free, gift-based economy that followed over a decade later under which games are produced and

circulated for free through digital networks, like the MAME communities Payne explores, or physically sold through hobbyist websites.

Richard Barbrook (1998) traces the lineage of the online gift-economy to the New Leftist politics of the 1960s, which proposed the gift as a replacement for the market commodity in their rally against capitalism. The Internet, argues Barbrook, grew in conjunction with the gift economy and its driving counter-cultural ethos. Researchers, computer scientists, and early hackers freely exchanged ideas over the fledgling Internet. This ethos continued with hobbyist game developers, including retro homebrew developers. Barbrook frames the gift economy in political terms, arguing that, despite constant capitalistic efforts to commoditize all information and digital goods, the gift economy will continue to drive content creation and interpersonal relationships online. Yet, Barbrook also stresses that the "money-commodity and gift relations are not just in conflict with each other, but also co-exist in symbiosis." For Barbrook, a purveyor of romantic neoliberalism, this is because the Internet requires the commercial market, rather than the government, to expand and flourish, particularly when he was writing in 1999. Yet this is also true of retro homebrew games, which are usually provided as both gifts players can download for free *and* as physical commodities that players can purchase. While the majority of retro homebrew games circulate for free as digital files via online archives, some have contributed to the production of alternative marketplaces, informal storefronts that trade in the same nostalgia as the commercial retrogaming industry but privilege reverence, novelty, and preservation over profit. Indeed, the impetus for many NES developers to engage in homebrew is because the possibility exists to create a physical game cartridge, which is seen as both commodity and fetish object. The ethos for retro homebrew players and developers, therefore, is a

compromised one, influenced both by the New Left hacker politics of the early Internet and the neoliberal free market logics that govern the contemporary Internet. With their hybrid gift/commodity economies, Atari VCS and NES homebrew developers both challenge the dominant retrogames industry but also acquiesce to its underlying market logics. Consequently, this cottage industry of online storefronts exists because of the value attributed to physical game objects by the retro homebrew development and collector communities.

The production of material objects that accompany a physical NES homebrew game's release exhibits the reverence the community has for that particular era in video games. Like NES games released in the late 1980s and early 1990s, many NES homebrew games can be purchased in boxes complete with original artwork, slipcovers (like dust jackets for cartridge games) and instruction booklets. The material components associated with the video game experience, which Raiford Guins (2014) refers to as "ephemera" and Carly A. Kocurek (2013) discusses as "feelies," provide significant meaning to NES homebrew developers and players. Placing the actual cartridge in the console, hitting the power button, holding the controller in hand, reading the instruction manual, seeing the art on the game box [Figure 2.4], placing the CIB (complete in box) game on the shelf next to a library of other NES titles -- these practices and experiences all contribute to the meaning and value of the technology for the culture of NES homebrew developers and players. Indeed, if homebrew "feelies" do not evoke a return to the imagined or actual past, they at least create cohesion and continuity with that past, echoing the material qualities of game objects in that era and conjuring a time many view as the origins of their relationship with video games.

Figure 2.4: A comparison shot between an original NES game cartridge for *Super Mario Bros.* from 1988 on the left and a homebrew cartridge for *Battle Kid* from 2010 on the right illustrates the degree to which the homebrew community goes to recreate the industrial designs of the past [Author's Photo].

This emphasis on capturing the original material qualities of the NES also carries over to the design of the games themselves. Titles like *Nomolos* (Gradual Games 2012), *Legends of Owlia* (Gradual Games 2016), *Battle Kid: Fortress of Peril* (2010), and *Super Bat Puncher* (Miau 2011) all draw inspiration from classic franchises on the NES. When discussing his approach to designing the action platformer *Nomolos*, Gradual Games' Derek Andrews (2014, pers.comm., 15 February) admits, "I didn't want to do anything super original. The only thing original I wanted to do was the character or story. The rest of it I wanted to feel very much like *Ninja Gaiden* (Tecmo 1988) or *Castlevania*, for example, but actually with fewer game mechanics." As a result, *Nomolos* features the same walking, jumping, and attack mechanics of many NES games. As a cat dressed in a knight's armor,

players walk along a two-dimensional plane, jump between platforms, and attack enemies that move across the screen in specific patterns.

For Andrews and other NES homebrew developers, getting the "feel" of the games they remember from their youth is paramount when approaching the development of a NES homebrew game. In the case of *Super Bat Puncher*, developer Julius Riecke (2014, pers.comm., 29 January) explains, "Sunsoft games are a huge inspiration. Especially *Gimmick!,*" a Sunsoft game that never saw release in North America until the homebrew community localized the game in 2010.

Indeed, rather than original properties, some NES homebrew games are "demakes," newer game properties that have been reimagined on older hardware, or "reproductions" (repros), new copies of previously released games that are rare or only previously available in particular territories. One popular demake is *Halo 2600* (AtariAge 2010) on the Atari VCS, while the aforementioned *Gimmick!* (Sunsoft 1993) is an example of a reproduction.

Jordan Odorica's *Battle Kid* series (2010; 2012) arguably draws heavily from NES games like *Mega Man* (Capcom 1987) and *Metroid* (Nintendo 1986). There is also a clear influence from 2007's *I Wanna be the Guy* (*IWBTG)* for the PC, itself a homage to classic 8-bit games. We can see these influences in *Battle Kid*'s use of static rather than scrolling game screens, as well as the game's emphasis on jumping and shooting precision [Figure 2.5]. Moreover, like *Mega Man* and *Metroid*, *Battle Kid* distributes character upgrades throughout the game, allowing players to gain new abilities and powers as they progress. As a result, the design logic of *Battle Kid* exhibits a desire to both preserve an idealized 8-bit past and at the same time, improve upon it by implementing lessons learned over the last 20 years. Indeed, the urge to reflect, but also improve, upon canonized NES design dogmas illustrates the way

the NES homebrew community negotiates with its own past and challenges the industry's control of retrogaming content. Notably, this impulse seems to echo that of other retro homebrew communities like hobbyist Atari VCS developers. While acknowledging the central role nostalgia plays in homebrew Atari VCS development, Montfort and Bogost emphasize that homebrew developers are equally driven by the desire and challenge to unlock the untapped potential of older hardware (155).

Figure 2.5: A comparison between *Battle Kid* (left) and *Mega Man 2* (Capcom 1986) (right)

In addition to a nostalgic desire to recreate the conditions of the past, another reason that NES homebrew games stick so close to classic designs is the sheer difficulty of developing NES games as solo projects. One of the common pressures that homebrew developers face is the tendency to burn out or abandon projects. Further exacerbating development challenges, most NES homebrew developers have to balance their labor-intensive hobby with fulltime work and everyday domestic duties. The husband and wife team of Gradual Games, for instance, schedules development for two nights a week (Andrews 2014, pers.comm., 15 February). Andrews does the programming and the music, while his wife provides the art. Additionally, Andrew's friend provides valuable playtesting

and feedback on the games as they progress. This schedule assuages the tendency to burn out but also extends development time to several years. Similarly, a German NES homebrew developer named Julius does all the art and the coding himself for his ongoing project, *Super Bat Puncher*, but outsources the music creation to freelance retro music composer Dave Harris, and relies on volunteer game testing labor gleaned from the forums on the NintendoAge website. Work not handled in-house by a friend or family member for free is usually outsourced to freelance contributors who, according to *Battle Kid* developer Ordorica (2013, pers.comm., 24 December), generally agree to a small sum of money and a free copy of the completed game. In this way, although not always freely provided, the labor of NES homebrew development shares affinities with the gift economy, predicated on free labor (Terranova 2004), often associated with fan communities where compensation is secondary to the act of producing cultural content for the community (De Kosnik 2013).

Owing to the multiple roles NES homebrew developers have to inhabit, work on these projects is often uneven, riddled with disjuncture, and fraught with delays and cancelations. Indeed, as hobbyist ventures with little to no commercial imperatives or hard deadlines, NES homebrew games can take several or more years to complete. As a result, few NES homebrew games have been completed so far, although hundreds of prototypes and demos have been built.

Having to wrestle with the limitations of hardware that is over a quarter of a century old and learn the 6502 assembly coding language significantly contributes to this extended development time. Although some people take advantage of development tools that allow for the use of more common coding languages such as C++, most NES homebrew games are programmed using 6502 assembly code, a machine language designed to operate with 8-bit

microprocessors. Designed to work on machines with very little memory, 6502 requires careful maintenance of memory resources; accordingly, learning to use it efficiently can be difficult. As a result, the websites NESDev.com and NintendoAge.com, among others, offer community-run tutorials in assembly code, a resource that helps transfer essential skillsets from experienced NES programmers to newcomers, helping to maintain the small production culture. To further encourage engagement, people from both of these online communities help organize an NES coding competition, which offers small cash prizes and encourages periods of dedicated development. The contest's best submissions are compiled and sold as a single NES cartridge, the first being a game cart titled *Action 53 Function 16 Vol. 1* (Infinite NES Lives 2013).

Contest organizers chose the name *Action 53 Function 16* for two reasons. First, it parodies an unlicensed multi-game cartridge called *Action 52* released in 1991 by Active Enterprises (Weber 2010). The unofficial cartridge included 52 incomplete and glitch-laden games designed by college students that Active Enterprises employed for three months – indicating the long history of the games industry exploiting young, eager programmers. Second, *Function 16* refers to the number of games, tools, and demos included on the competition compilation cart. With the *Action 53 Function 16* name, NES homebrew organizers pay homage to earlier examples of unofficial NES cartridge production. Yet while Active Enterprises and its founder, a shady Florida-based businessman named Vince Perri, produced *Action 52* to cash in on the rising popularity of video games and the market success of the NES in the early 1990s, NES homebrew developers produced *Action 53* in order to offset the costs of holding the competition and celebrate the best examples of NES homebrew development, particularly the game *Streemerz* (Arthur Lee 2010), a short platforming game

built around a grappling hook mechanic. The first batch of 50 carts for *Action 53* sold out immediately, and the game has since sold every one of the 150 cartridges that have been produced (Molloy 2014, pers.comm).

(Re)Packaging and (Re)Selling the 8-bit

Ramon Lobato defines distribution broadly as "the movement of media through time and space," a move that allows him to take seriously informal channels of media movement, which he suggests are actually the global norm, not an exception to formal, regulated channels (2). Grounding his arguments through an examination of what he calls shadow economies of cinema, Lobato argues that rather than fixed categories of formal and informal, we should look at distribution channels as fluid, with networks consisting of varying degrees of formal and informal elements and with particular networks often transitioning from informal to formal operations over time. In video games, the retail chain GameStop is a great example of a commercial organization that has formalized the once less formal process of buying and selling used games at flea markets or garage sales. In fact, GameStop has been so successful at formalizing the purchase and sale of used games that the games industry now recognizes the importance of game trade-ins to the purchase of brand new product (Campbell 2012). Nonetheless, informal used game stores still exist, particularly in regions like Russia and China, where counterfeit and pirated games can be purchased alongside legitimate copies in many neighborhood shops. Currently, lacking wide distribution and only available through niche online websites, NES homebrew games have much more in common with shadow economies of digital games than with traditional, formalized, commercial distribution channels.

For years following the commercial demise of the NES, what little NES homebrew production existed was distributed through the back channels of the Internet via free direct downloads or torrents. As Nathan Altice contends in his examination of the NES platform, the NES' demise in the 1990s corresponds to the rise of console emulation on PC hardware, leading to "new forms of play, performance, and videogame archiving" in the form of ROMs, or read-only memory files (7). Digital ROM files were hosted on private websites, traded via peer-to-peer technology, and played using emulation software on computers. Indeed, the lack of authentic game carts for NES homebrew games was a large reason that so few people initially engaged in the activity, since the payoff was only a digital ROM file, not something that could be played on the original hardware or put on a shelf next to other NES games.

However, this changed in 2005 when, reportedly, the first physical NES homebrew game cartridge, affectionately called "Garage Cart," was sold online in a limited run of just 24 units. Garage Cart consisted of three games housed in one game cartridge. According to the website NintendoAge, "The Garage Cart is widely regarded as the father of the NES homebrew scene, and is, to the best of our knowledge, the first ever homebrew released in cart form." Garage Cart was produced by Joey Parsell and sold for $42 in June 2005, two years prior to the launch of RetroUSB (sometimes referred to as RetroZone), a storefront that would become synonymous with NES homebrew games, particularly the *Battle Kid* series. Since 2007, a burgeoning shadow economy has developed for NES homebrew games through the sale of physical cartridges online. Driven by a materialist NES collector culture that values game objects as much as or more than the bits and bytes of game software, two

dominant online stores, RetroUSB and Infinite NES Lives, have emerged to centralize the previously amorphous, anarchic distribution of NES homebrew game ROMs.

These two prominent venues represent informal, yet structured, distribution networks for NES homebrew games. As will be illustrated later, the sale and distribution of NES homebrew games indeed begs for the kind of analysis Labato suggests, one that examines informal distribution networks to determine to what degree they are or are not subject to the oversight of legal, governmental, regulatory and other authoritative entities. These stores are individually owned and operated, small businesses, run by a small handful of people and subject to taxation. Therefore, while they are certainly alternative marketplaces that generate very little revenue, they are not entirely outside the purview of scrutinizing governing bodies, such as the IRS. Furthermore, despite their do-it-yourself, scrappy demeanor, each takes advantage of global supply chains in order to secure the parts necessary to produce original NES game cartridges. Moreover, each has revenue sharing models with NES homebrew developers, implying the presence of legally-binding agreements, though most of these arrangements are more fluid and informal than that.

Operated out of Redwood City, California by Brian "bunnyboy" Parker, RetroUSB was one of the first companies to publish new physical NES games since the mid 1990s. This was made possible after Parker bought the rights to the Ciclone chip, a component capable of bypassing Nintendo's 10NES security, which was a chip that prevented unlicensed games from running on the NES console and for years confined NES homebrew to PC-based emulation.

In an examination of the 10NES chip, Casey O'Donnell (2010) traces the dominant business models of today's gaming industry back to Nintendo's policies during the NES era.

As part of its market domination in the mid-to-late 1980s, Nintendo maintained tight control of the content available for the NES through both technological and legal means. Under the pretense of quality control, Nintendo had the final say on what games could or could not be released for its platform. Nintendo prevented developers and publishers from bypassing its quality control through the use of the 10NES security chip. Using its position of power to its economic advantage, Nintendo required publishers to pay for every game cartridge they wanted produced in advance, regardless of whether the game ended up selling or not. Any publishers that tried to reverse-engineer Nintendo's security chip and release unlicensed games were quickly slapped with lawsuits. O'Donnell argues that the system of control Nintendo established, consisting of patents, copyrights, technologies, and business policies, structured the production networks of the NES era for many developers and publishers and laid the groundwork for the gatekeeping policies of today's industry, policies which are only now being significantly challenged by the increasingly importance of indie games to the dominant gaming industry. Fortunately for NES homebrew developers, after Nintendo ceased production of the NES in 1995, the company had little incentive to sue unlicensed developers working on its obsolete console. Unfortunately, despite the 1993 release of the NES-101, a redesigned version of the console that lacked the 10NES security chip, the majority of NES systems in circulation still have the 10NES chip. This technological obstacle discouraged homebrew developers from producing physical carts for many years and indeed seems to have discouraged homebrew development in general.

However, RetroUSB's Ciclone chip revitalized NES homebrew culture, heralded by the release of *Sudoku 2007* (Sialagogic 2007), an NES version of the popular puzzle game and the first homebrew cartridge released through RetroUSB. The release of *Sudoku 2007*

inspired Jordan Ordorica to develop his own NES games under the moniker Sivak Games, eventually culminating in 2010's *Battle Kid: Fortress of Peril* and 2014's *Battle Kid 2: Mountain of Torment* (Wahlgren 2010). Most NES homebrew games are released in small quantities ranging from 50 to 100 cartridges. Once those sell out, which inevitably happens, additional batches are produced based on demand. Despite their status as commercial products, NES homebrew games do not generate much revenue for either the storefront owner or individual developers. RetroUSB's revenue split is 50/50 between Parker and the developer, but only after Parker has recouped the cost of parts, which are usually around $15. So for instance, if RetroUSB sells a copy of *Battle Kid* for $30, Jordan will earn around $7.50. Game sales for these titles run the gamut from a few hundred like Gradual Games' *Nomolos* to several thousand for the most popular titles like *Battle Kid*. In other words, there is not an enormous financial incentive to produce NES homebrew games, especially when the enormous amount of development time and effort is taken into consideration. The lack of financial benefit for their efforts further illustrates that such endeavors represent acts of passion, love, and reverence for a particular era of gaming technology and are not driven by the same motivations as those that drive the dominant retrogaming nostalgia industry. While Ordorica is reluctant to give sell-thru numbers on *Battle Kid*, another NES homebrew developer estimates that the game probably sold between 1000 and 2000 units, more than any other NES homebrew cartridge to date (Riecke 2014, pers.comm., 29 January).

Most of this demand is concentrated in NES collecting cultures that gather on websites like NintendoAge. These collectors regularly discuss games as they are in development, anticipate their release, and view the latest homebrew games as legitimate entries in the NES game library. For instance, in one NintendoAge forum post, many users

asked about the crowdfunding campaign Mojon Twins ran for their game Jet-Paco and about whether they could buy the game as a CIB product or whether it only came as a standalone cartridge in a dust jacket. The Mojon Twins is a prolific retro homebrew developer that has released a few NES homebrews among countless other titles for classic consoles and computers like the Sega Mega Drive and ZX Spectrum. Deep into the topic, users started to post pictures of the games after having ordered them, taking note of how they were shipped and the quality of the materials. User UberArcade (2016) writes:

> "I received my games today . . . Jet Paco and Sgt. Helmet. Not good news so far. They shipped it in a bubble mailer. Both boxes were a little smashed. Boxes are kind of flimsy anyway. Manuals are nice. Labels are cut a little weird. Worse part is I can't play either of the carts in my toaster style NES. The carts are just a little too tall and I can't push the cart down in the NES. I'll probably have to swap the cases out. Hope other people have better luck. It's a shame they couldn't do a better job."

This comment reflects the investment NES collectors have in the quality of the physical game materials, from the cartridge to the manual to the game box. For NES collectors, purchasing each new release is paramount to maintaining a complete, canonical collection. As a result, most completed homebrew games, regardless of quality, will probably sell upwards of one hundred copies to the small but active community. In addition to games, other items the RetroUSB store sells include: 1) retro adapters that connect old game controllers to newer hardware, like the Wii console, in order to play emulated games with their corresponding authentic controller; 2) reproductions of rare game carts or carts that were never released in North America; 3) the PowerPak that allows the entire NES library to be stored on a compact flash card and played on a single NES cartridge; and 4) development tools that allow people to extract ROM (Read-Only Memory) data from NES games and "dump" or upload them onto their computers to distribute online. In addition to Ordorica, the

establishment of RetroUSB and the ability to produce physical cartridges inspired a small but notable community of hobbyist NES homebrew developers, many of which have already been mentioned.

Meanwhile, in 2009 an electrical engineering student in Idaho named Paul Molloy started to build and sell his own custom USB-based classic gaming controllers for use with PC emulators. After initial success on eBay, in 2010 Molloy launched the Infinite NES Lives website to sell modded USB controllers and other NES-related technology that he developed himself. While Paul handled all the assembly of his products early on, after having two children and working 40-hour weeks as an electrical engineer, he eventually trained and enlisted the services of his parents and brother to build and ship his various products. Paul tells me all of this over the course of two nights on the phone while he commutes from work to pick up his kids at school and then heads home for the evening. In the background of our conversation, I can hear his children, a detail which illustrates the hectic schedule in which he must find time for his side business.

After starting Infinite NES Lives, Molloy expanded his offerings to include NES homebrew games, as well as variations of NES cartridge circuit boards. With a stable supply of game circuit boards from a Chinese distributor and the capability to build his own cartridge shells on demand, thanks to a mold Molloy acquired, Infinite NES Lives now provides production kits – consisting of circuit boards, cartridge cases, and data transfer solutions - that allow individual NES homebrew developers anywhere in the world to build and distribute their own physical game carts either on their personal websites or through the Infinite NES Lives website. The idea behind this was to help NES developers get a better grasp of the retro hardware business. As Molloy (2014, pers.comm., 14 February) explains:

> "Most people who code and create Nintendo games don't really have a good grasp on the hardware. You have to translate it between hardware speak and programmer speak. It took me a while coming from the hardware side of things when first getting involved. There were all these software perspectives that were new to me, so it took me a while before I could really connect the dots."

The first batch of games to take advantage of Infinite NES Lives' NES game publishing option include Gradual Games' *Nomolos*, which abandoned RetroUSB in favor of distribution through Infinite NES Lives, *Nighttime Bastards* (One Bit Games 2014), a top-down action adventure game, and *Armed for Battle* (1010 Howe 2014), a real-time strategy game. In essence, by providing the means of physical NES cartridge production to homebrew developers, Molloy is attempting to breakdown the barriers associated with current physical distribution options, which mostly consist of a RetroUSB monopoly. Molloy hopes this self-publishing option will encourage more people to finish their NES homebrew games and grow the number of completed projects and distribution outlets, making for a more diverse and lively community.

Resisting Planned Obsolescence

Unlike some alternative game development scenes, NES homebrew games are not ostensibly oppositional in their aesthetics, politics, or mechanics. This follows for a number of reasons. This production community is overwhelmingly composed of white males between their late 20s and mid-30s. These men were introduced to video games as children through the Nintendo Entertainment System and have an emotional, nostalgic relationship to the hardware and games of that era. Thus, driven primarily by an ethos of nostalgia and the ability to harness untapped potential from older consoles, these developers tend not to enter game development from a place of social, political, or economic critique; instead, they

engage in development with the desire to preserve or recreate the experiences and affect of classic Nintendo games. Indeed, rather than feeling marginalized based on their identities in the dominant games industry, many NES homebrew developers would probably, instead, characterize their marginality based on their tastes for older games amidst an industry that is always looking for the next best, marketable thing. Still, despite their preference toward preservation rather than cultural or industry critique, it is premature to argue that all NES homebrew games lack politics or cannot be read as alternative or oppositional.

As the field of Fan Studies illustrates, the work of seemingly nonpolitical fan communities often takes the shape of political engagement, something Henry Jenkins (2012a) calls "fan activism." In a new forward to his seminal *Textual Poaching,* a book concerned with fans appropriating and reimagining their favorite fictional worlds, Jenkins (2012b) discusses the tension that often arises in fan communities between producing entertaining work that speaks to the object of their fandom and producing work that engages critically in larger societal and cultural conversations. Jenkins describes this as the "play vs. politics" debate, yet stresses that in fandom, in fact, the two often take the form of the other, a position shared by others in fan studies (Penley 1991). As illustrated above, however, NES homebrew production commonly leans more toward the "play" than the "politics" end of the spectrum.

One exception to this rule is educator, artist, and homebrew developer Rachel Weil. Weil's games *Electronic Sweet n Fun Fortune Teller* (2013) and *Track+Feel II* (2012) are part of a larger project that attempts to recuperate the feminine in popular culture, which is so often trivialized in cultural discourse. Instead, Weil's NES homebrew experiments invite us to imagine an alternative history for NES development that catered to feminized video games, rather than the masculinized military and action games that dominated the system

(Weil 2015, pers.comm., 29 April). Presented in a pastel aesthetic, *Electronic Sweet n Fortune Teller* provides players with horoscope readings that predict their romantic futures based on personal information players provide [Figure 2.6]. Meanwhile, the more enigmatic *Track+Feel II* combines the forms of an NES game with a glitch art exhibit. The art game invites two players to cooperate in order solve the goal of the game while being bombarded by images of cascading yin yang symbols, roses, and two women longingly staring into each other's eyes. In contrast to Weil's exploratory NES homebrew games, most other NES homebrewers concentrate on recreating established genres like action, adventure, or role-playing games.

Figure 2.6: A screenshot from Rachel Weil's *Electronic Sweet n Fun Fortune Teller* (2013), which illustrates Weil's attempt to reimagine NES culture as a feminized space.

Nonetheless, despite the overall NES homebrew community's preference for preservation and reconstruction rather than cultural critique, I contend that their work is still necessarily political based on its premise if not necessarily its textual form or content. As a production community dedicated to hardware that has long since lost its commercial value,

the work of NES homebrew developers arguably challenges the practice of planned obsolescence (sometimes called structured or manufactured obsolescence), the industrial strategy of building failure or obsolescence into products for the purpose of ensuring the sale of replacement products. For instance, the documentary *The Light Bulb Conspiracy* (Dannoritzer and Michelson 2010) explains how the light bulb industry was the first to implement this strategy successfully. Since early light bulbs lasted thousands of hours and did not require the frequent purchase of replacements, the light bulb manufacturing cartel made an agreement to uniformly lower the number of hours a filament would last across their product lines, landing on around 1500 hours. By structuring the eventual failure of their product, light bulb manufacturers were able to sell more light bulbs. In a globalized era of production and commerce, planned obsolescence has become a standard capitalist practice across the world, particularly in the information and communication technology (ICT), consumer electronics (CE), and video game industries. The result of these practices is a rapid increase in the production of electronic waste or e-waste.

Richard Maxwell and Toby Miller (2012) have examined the often-ignored manner in which the production and consumption of media technology contributes to the despoliation of the environment. Specifically for the gaming industry, the authors accuse Game Studies scholars of largely ignoring the ecological impact of gaming technologies, demanding scholars reconsider digital games in terms of their material, environmental properties and consequences. Moreover, they accuse video game scholars of succumbing to the rhetoric of "technological sublime" and "technophilia" discourses that espouse the positive attributes of new technology to improve our world while marginalizing or erasing the disastrous, material consequences of the over-production and consumption of consumer electronic goods.

Accordingly, Maxwell and Miller trace the lifecycle of gaming technology from mining operations where rare earth minerals so vital to modern consumer electronics are extracted, all the way to toxic landfills and recycling facilities in places like Accra, Ghana and Guiyu, China where exploited workers operating in poisonous facilities dissemble discarded technology. Of course, these scholars also fail to mention how Donna Haraway (1991) presupposed this line of critique in her famous "A Cyborg Manifesto" essay, offering both an early critique of electronic waste and gender oppression in the technology and gaming industries. In any case, in highlighting the lifecycle of electronic games, Maxwell and Miller argue that "rapid innovation and planned obsolescence accelerate both the emergence of new electronic hardware and the accumulation of obsolete media, which are transformed overnight into junk" (184). This process is glaringly apparent in the gaming industry where platform holders release new game consoles every four to eight years.

In the dominant philosophical narrative of human progress supported by the gaming and consumer technology industries, NES homebrew production and consumption represent an anomaly. More importantly, NES homebrew production and play suggest an opportunity for environmental action and economic critique should game players organize around these principles. Kline et al. (2003) describe the game industry's imperative to continually reinvent itself through iterative products as the "perpetual innovation economy," an economy that trades on the rhetoric of the technological sublime that Maxwell and Miller critique (66). Similarly, James Newman (2012) identifies the industrial practice of planned obsolescence as a main component of the innovation economy and contends that discourses obsessed with "new games" in marketing, journalistic, and industry discourses undergird and support this practice (66). Though digital games only contribute a small percentage of the total e-waste

tonnage produced every year – large industrial machines and household devices like refrigerators make up the majority – the consumption of gaming technology is intimately connected with the consumption of other electronics like televisions and computers, each of which is regularly upgraded by enthusiast gamers and technophilic consumers. Moreover, just because more computers and other, larger electronics are thrown out each year than video game-specific technology does not excuse the industry from the responsibility it bears in producing hundreds of millions of machines that it then condemns, sometimes after only a few years, to obsolescence and landfills (often in developing countries or low-economic regions of the US).

As a solution to this daunting problem, Maxwell and Miller propose the development of "green citizenship," a term borrowed from the eco-political economist John Barry (2006). They outline three varieties of green citizenship. First, "environmental citizenship" favors part-time educational outreach in institutions like schools, a tactic meant to educate a younger populace to prevent future environmental degradation. Second, "sustainability citizenship" requires broader systematic change through advocacy groups and policy shifts, efforts that specifically target legislating bodies that can enact larger and sweeping changes in environmental laws. For instance, environmental and consumer advocacy groups have lobbied for extended manufacturer responsibility legislation that would hold consumer electronics companies responsible for the disposal of their products when they break down or become technically obsolete. Finally, "resistance citizenship" involves direct action meant to change behavior of major manufacturers. The activist group Greenpeace, known for their daring stunts like boarding whaling vessels, falls within this last category, for instance. Beyond a condemnation of the ICT/CE industries and a modest proposal for foundational

solutions, Maxwell and Miller's goal is to encourage other humanities scholars to adopt a material, ecological perspective on media.

Admittedly, the NES homebrew community does not fit neatly into Maxwell and Miller's green citizenship model. This is the case not least because they are not motivated by activism or environmental awareness, nor do they consciously strive for positive environmental change at the level of discourse, politics, or direct action. Yet their dedication to salvaging, restoring, and preserving original NES technology demands recognition. For Lisa Parks (2007), "salvaging" media involves "saving, repurposing, and/or benefiting from old hardware" (33). Parks describes salvaging as a practice that showcases "how hardware persists, lingers, and refuses to disappear even despite the dictates of a market economy" that would rather it remain in the junk piles of the world (34). Indeed, fans on sites like NintendoAge routinely rescue dilapidated NES consoles from disuse and resell them to other members of the community. For instance, during my research for this chapter, I was even able to purchase a fully restored NES from a user on the NintendoAge forums. Additionally, stores like Infinite NES Lives scour ebay for bulk sales of broken retro controllers, disassemble them, salvage their working parts, and construct functional controllers out of the pieces. Again, while this is not an environmental movement in and of itself, the practices and values of retro homebrew communities provide a model for resistance to the standard, unsustainable practices of the consumer electronics industries.

Conclusion

Retrogaming tends to fall into one of two camps. On one side exist legally suspect emulation practices that arguably challenge industry authority over intellectual property, such as the

MAME community. On the other side sits the retrogame as an industry-controlled commodity. In this second camp the nostalgia and affect of older players is exploited in order to sell the same games and franchises to players over and over again. NES homebrew arguably exists on a spectrum between both of these practices. While it relies on legally suspect development for proprietary platforms, NES homebrew also eschews PC-based emulation in favor of releasing games on refurbished official hardware. Moreover, rather than the rampant piracy of the emulation community, NES homebrew developers prefer to distribute physical product through centralized online storefronts for players to purchase. This emphasis on alternative markets directly challenges the centralized control of retro games by their legitimate IP holders. When Nintendo abandoned the NES to the annals of history, a small but dedicated group of developers and players decided to rescue it. While Nintendo no longer supports system repairs or part replacements for the NES console, a vibrant community on sites like NintendoAge collaborate to salvage, collect, curate, and refurbish old NES hardware. Collectively, as we have seen, these practices indirectly challenge the industry ethos of planned obsolescence often with unanticipated benefits, such as providing a model whereby the problem of e-waste might be challenged.

Yet despite the slow growth of the community, retro homebrew titles are likely to remain niche historical oddities. The best developers will earn a little money on the side, while the rest will struggle for years on games that will never be finished. There is a seeming gulf between this production culture and those more closely associated with the commercial games industry, including the commercial indie development sector explored in chapters three and four. Yet NES homebrew production is arguably inching closer and closer to more formalized, though still obscure, modes of production. What started as a decentered system

of free digital downloads was transformed by the ability to sell physical cartridges through RetroUSB, a vendor that is finally being challenged by Infinite NES Lives' self-publishing program, suggesting that, although NES homebrew will most likely remain niche, it is far from lacking its own distinct, emerging distribution channels and production economy.

Those invested in the professionalism of the video game industry may argue that a lot of the hobbyist efforts by retro homebrew developers are divorced from the more formal operations of the dominant industry. The case of *Pier Solar and the Great Architects* (Watermelon 2010) sutures these two seemingly disparate communities, highlighting the loop of labor, networks, and products that flow from so-called amateur to professional contexts.

In 2004, members of the website Eidolon's Inn began work on a homebrew role-playing game for the 16-bit Sega Genesis console (1989-1999), specifically for its Sega CD add-on attachment. As production of the game progressed, a small group of especially dedicated, but globally dispersed, developers emerged. After an unstable development period of several years, including the exit of the game's main artist, the now-named developer WaterMelon, based out of Iowa, released the homebrew role-playing game *Pier Solar and the Great Architects* for purchase through its website in December 2010.

Anticipated for years, the boxed Genesis release of *Pier Solar* sold out in pre-orders before the game officially launched, and a second print of the game sold just as quickly. Owing to *Pier Solar*'s extraordinary popularity, WaterMelon held a successful Kickstarter campaign in 2012 to fund a high-definition re-release of the game, to be sold digitally, on more contemporary game consoles, including the PS4, Xbox One, and Wii U. In order to redesign the game's visuals for high-definition consoles, WaterMelon partnered with

Brazilian indie developer Gameblox Interactive, making the project a transnational endeavor (Handrahan 2014). In 2014, the game finally released on 7th and 8th generation gaming consoles, exemplifying the flow of labor, content, and value between so-called amateur and professional, informal and formal, and homebrew and legitimate video game ecosystems. Of course, this is just one example of the connective tissue between the marginal retro homebrew games economy and more established channels of distribution. For instance, a few other homebrew games, including Sivak's *Battle Kid*, are available for purchase through the OUYA micro-console. While the OUYA does not represent the same power bloc as the three leading gaming platforms, or even the massive install base of Apple or Android-powered mobile devices, it still illustrates the unexpected and variable ways the smallest of games from niche digital game production cultures can creep out of the shadows and into the spotlight of the formal networks that constitute the dominant global gaming industry.

In his exploration of homebrew development in the context of restrictive platform holder license agreements, Casey O'Donnell (2014) highlights the flow of content from hobbyist homebrew developers to those working in the formal channels of the legitimate gaming industry. O'Donnell's motives here are to illustrate why console manufacturers should not aggressively litigate against homebrew development but rather embrace it as an activity that adds value and consumer loyalty to their platform, at least when not used for piracy purposes. While O'Donnell focuses his critique on homebrew for contemporary platforms, I have delineated how homebrew development and consumption for aged and obsolete platforms can similarly offer value for the industry, even as it, at the same time, presents challenges to some of the industry's foundational practices. Unfortunately, in the process of moving from obsolete consoles to current generation platforms, retro homebrew

games like *Pier Solar* lose a lot of their radical potential. No longer do they represent an affront to the "perpetual innovation economy" or the practice of manufactured obsolescence. Rather, they lose their potential for radical resistance and become just another example of retro-inspired indie games for sale through digital download stores across an array of platforms that will inevitably be obsolete themselves sooner rather than later. Although their origins in residual media production practices remain unique, if not latently transgressive, retro homebrew games that do eventually end up funneled through legitimate channels of distribution ultimately join the hegemony of the retrogaming industry.

III. Crunch by Any Other Name
The Neoliberal Funding and Labor of Indie Games

At a time when film and television struggle to adapt to market changes wrought by a shift toward digital consumption of entertainment content, video games arguably are ahead of the curve. Part and parcel with the dominance of video games in the era of digital distribution is the simultaneous rise to prominence of independent video games or indie games. While independent games have existed since the early days of the formalized games business (Nooney 2015), it was only after the new millennium that the term indie, borrowed from film and music cultures, began to permeate within the gaming space, giving shape to the discursive identity of the indie developer and imbuing indies with a sense of artistic mystique (Newman 2016) that does not necessarily reflect the conditions of their actual development. Taking advantage of ubiquitous and accessible development tools and an ever-increasing number of digital outlets on the PC, home consoles, and mobile platforms, video games have tapped into tens of millions, if not billions, of potential players, a digital retail space before unimaginable. Accordingly, an infrastructure has built up around the commercial rise of indie games, including indie game festivals, indie-focused publishers and marketing firms, trade groups, award ceremonies, and an array of available funding, production, and distribution opportunities. Moreover, having embraced indie games as a business strategy, platform holders like Sony, Microsoft, and Nintendo now routinely feature indie games in their globally broadcast press conferences, trade show exhibitions, and digital storefronts.

Indie media have been a matter of much definitional debate within film (King 2005; Newman 2011; Tzioumakis 2012), television (Christian 2015), music (Hesmondhalgh 1999), and video game (Lipkin 2013; Martin and Deuze 2009) scholarship and popular criticism.

However, across this scholarship, definitions of independence generally fall within industrial, aesthetic, socio-political, and discursive considerations, or more commonly a cross section of each. Like genre theory, indie, as a concept, encourages multiple layers of analysis that do not define so much as encourage engagement and critique. The media industries, meanwhile, thrive on the mobilization of these various concepts, which often have great utility because they are malleable, lack precision, and can thus be exploited for commercial appeal. As this chapter is grounded in the actual on-the-ground conditions of commercial indie game financing and development, I lean on the industrial definition of indie games, which designates indie studios as those that are not owned and operated by or in long-term, exclusive contracts with major game publishers like Activision-Blizzard, Electronic Arts, and others.

It may seem unorthodox to focus a discussion of indie games on their funding models and labor practices rather than their approach to creativity or aesthetics, which are typically treated as key differentiators of indie media. However, this dissertation seeks to understand indie games first and foremost as cultural products in complex, global systems of exchange. Therefore, it is my position that the industrial distinctions of indie games, including financing models and development routines, are integral to seeing through obscuring cultural discourses that emphasize aesthetics over resource mobilization. Rather, by focusing on the production challenges and limitations of indie game development, we can better understand aesthetic considerations and game design choices. That being the case, the discourses that surround and shape our understanding of indie games cannot be ignored.

Launched in 2008, Jonathon Blow's *Braid* contributed to the cultural and industry discourses that grew to frame indie games as a newly viable and popular alternative to

mainstream, publisher-driven games. *Braid* launched on Microsoft's Xbox Live Arcade digital distribution service on August 8, 2008 as part of Microsoft's first Summer of Arcade promotional series. It was a significant moment for small, independently-produced games and arguably one of several catalysts, along with fellow indie game *Castle Crashers* (Behemoth 2008) during the same promotion, which signaled the emergence of a commercially viable indie game development sector within the video game culture and industry. Of course, indie game development, in the form of solo developers or small teams working independently of publishers and distributing digitally, had been growing in prominence since at least 2000, with notable precursors to *Braid*'s breakout success being *Cave Story* (Pixel 2004), *Everyday Shooter* (Queasy Games 2007), *Aquaria* (Bit Blot 2007), and *Audiosurf* (Audiosurf 2008). Indeed, while indie games have certainly existed since the medium's earliest days, the discourse that emerged after 2008 repositioned them as central to both gaming's cultural and commercial endeavors. Within this emerging discourse, indie games became the solution to a number of problems in the industry, including barriers to access (O'Donnell 2014) and a perceived stagnation in publisher-driven, blockbuster, triple-A games.

The problem, as some see it, is that the dominant games industry, consisting of major publishers and platform holders, has become like Hollywood, investing the majority of its resources in a small number of franchise tent pole products and counting on the astronomical success of these familiar properties to generate profit. As publically traded companies, most major publishers are risk averse and avoid investing in unproven concepts. In recent years, the major publishers have reduced the number of games they release annually. As an example, in 2009, publisher Electronic Arts sold 67 game titles in stores. Yet during the

2012-2013 fiscal year, that number plummeted to just 13. This "tent pole" strategy involves investing more resources into each game's development, and running broad, expansive marketing campaigns to reach the maximum number of potential players/buyers.

Consequently, the focus major publishers place on blockbuster games leaves a sizeable gap in product diversity and release windows which allows indie game creators to step in and offer a diverse array of smaller games to players eager for fresh content on a regular basis. It is in this environment where games like *Braid*, *Limbo* (Playdead 2010), *Super Meat Boy* (Team Meat 2010), *Hotline Miami* (Dennaton 2012), *Gone Home* (The Fullbright Company 2013), and *Towerfall* (Thorson 2013) have found commercial success and critical recognition. The indie discourse that emerged after the release of *Braid* encouraged would-be game developers to tinker with increasingly accessible development tools and seek out emerging funding opportunities, while inspiring players to purchase and play indie-developed titles on PC, home console, and mobile platforms. Collectively, the indie development community embraced this discourse, since it not only lionized their work, but also provided a powerful brand they could use to market their small games.

The release of the documentary film *Indie Game: The Movie* (Pajot and Swirsky 2011), which chronicles the struggles of three indie game developers, helped concretize the discursive identity of indie games in gaming and popular culture. In an examination of *Indie Game,* Michael Z. Newman (2016) suggests that indie culture in video games, like in other media, finds its power in the figure of the solo artist or auteur, whose work is often described in terms of its authenticity, free from the shackles of profit-minded producers. Building off of the sociological work of Pierre Bourdieu (1984), Newman argues that the discourse of authenticity allows indie games, along with those producing and consuming them, to be

distinguished from publisher-developed video games, sometimes referred to as triple-A games. Triple-A games are discursively similar to an A-List Hollywood movie, in that it evokes high production values. Subsequently, indie games are framed as authentic, experimental, and original in comparison to triple-A games, which are discussed as derivative, uninspired, and market-driven. Thus, the production and consumption of indie games engenders a practice of distinction that reproduces a cultural and classist hierarchy between artistically superior, highbrow indie games and bombastic, lowbrow mainstream games. Notably, this discourse reflects upon every aspect of a game's development process, including its design, production, distribution, and ultimately the final game itself. Certainly, many indie developers do experiment with novel approaches to game design and narrative and are driven by a genuine desire to subvert conventions. But this prevailing and distinguishing discourse obscures the fact that just as many indie games rely on familiar tropes within established video game genres, tweaking them ever so slightly in the same way a major studio would in order to differentiate the latest sequel from its predecessors for marketing purposes.

However, this chapter does not concern itself with an examination of the aesthetics or creative mechanics of indie games themselves. Instead, it shifts the conversation to an interrogation of the industrial context of funding opportunities and actual development practices available to indie game creators. This chapter serves as a response to the emergent and prevailing discourses which frame independence in game development as a predominantly or unproblematic positive alternative to working in the corporate, mainstream games industry. It does so first by interrogating celebratory discourses around emerging alternative funding models for indie gamemakers. On the one hand, emergent funding

opportunities like Kickstarter have given indie developers options outside of traditional and exploitative partnerships with major game publishers, preserving their creative autonomy and forming more intimate connections with players. On the other hand, emergent funding models are too often celebrated without critically engaging in their shortcomings or the fact that such models are not so much challenges to the neoliberal logics undergirding the contemporary media and video game industries, which prefer free market rather than public support for the arts, but instead part and parcel with larger and ongoing transformations and realignments. Along similar lines, the second half of this chapter interrogates the assumption that indie studios are structured in ways that eliminate the infamously harsh working conditions in publisher-run studios. On the contrary, I illustrate how difficult working conditions often travel from corporate to independent production contexts.

By turning critical attention toward the actual practices and routines of indie game production, this chapter begins to dismantle the discourses that frame indie games as a counter-cultural alternative to triple-A development and instead highlights the troubling continuity between commercial indie games and the publisher-backed triple-A games against which they are so often defined. More precisely, this chapter argues that an underlying logic of neoliberalism animates both corporate and independent development contexts alike. Neoliberalism is a widely used term deployed in variety of different contexts by a variety of different stakeholders (Flew 2014); when I use the concept, I mean the transnational ideological project that swept the world starting in the 1970s, defined by hyper-commercialization, deregulation, bootstrap individualism, and an emphasis on market-driven and individual rather than governmental and collective solutions to socio-economic problems (Harvey 2005). While this prevailing ideology is troubling enough in the dominant games

industry, which privileges financial and executive elites, resists collective labor organizing, and routinizes difficult working conditions under the prevailing mantra that sacrifice breeds success, it becomes even more insidious in the indie context where venture-backed crowdfunding services have been framed as democratizing game financing and self-exploitation in the indie development studio is often uncritically reframed as self-determination under the guise of the passionate artist.

Kick(start)ing Out the Middle-Man

Until the last ten years, most commercial independent developers had to partner with major publishers out of necessity in order to fund, distribute, and market the video games they produced. This was particularly important in the era before widespread adoption of digital distribution, since producing, shipping, and procuring retail space for physical game product was a daunting challenge for upstart and cash-strapped independent developers. This historically contingent model involved developers usually developing a proof-of-concept game prototype and pitching their idea to a publisher in an effort to get them to invest in the project. Since publishers have traditionally been suspicious of games that do not fit into proven markets, most game pitches, even today, fall within established genres and feature familiar tropes and mechanics that are recognizable to gaming audiences. Traditionally, business contracts between indie studios and game publishers have heavily favored the big publishers, frequently dictating that publishers will retain ownership of the intellectual property rights and keep the majority of all sales revenue, while the actual development studio receives little reward other than having survived another project, the small possibility of a bonus if sales are exceptional, and another game to add to its portfolio in order to secure

future publishing contracts. Moreover, many of these deals would include clauses that stipulated the publisher could opt to acquire the small developer for a fixed, reduced price if the game sold a certain amount, thus stripping the developer of its independence and absorbing its infrastructure and labor into the publisher's network of production firms. In other words, while independent studios certainly existed alongside major publishers since the early days of the games industry, they were largely dependent upon, subservient to, and disempowered in comparison to transnational video game publishing corporations and platform holders.

In recent years, along with the ability to digitally publish titles through online and mobile storefronts, alternative funding sources have emerged to enable many indie developers to sever their historical dependence on major publishers. These funding sources are varied and include private investors, venture capitalists, corporate-sponsored projects, state funds, and, perhaps most impactful, crowdfunding campaigns and the emergent early access business model. Without the need to appease publishers for funding, the current discourse surrounding indie games assumes that indie developers are free to develop creative, uncompromising, and innovative game projects.

Crowdfunding has certainly been fruitful for a great number of indie titles that may not have otherwise been developed. In this sense, the celebratory discourse is not entirely unmerited. However, I do not wish to contribute to this utopian discourse, which is only the latest iteration of the kind of digital democratization rhetoric that has circulated since the early days of the Internet. Instead, this section critically engages in a few examples of alternative indie game funding in order to illustrate two central positions. First, I analyze the initial enthusiasm and mounting challenges related to raising money through crowdfunding

sources like Kickstarter. Second, I illustrate that such emerging models, while perhaps supplanting traditional publisher-developer relations, do not so much challenge current industry logics as represent and support ongoing transformations in the video game industry, in particular, and the media industries, in general. Far from being challenged by entrepreneurial funding models, the neoliberal market logics that drive the industry encourage such disruption and innovation, creating an environment where major publishers continue to thrive off of their largest titles and venture-backed technology startups, offering disruptive services like Kickstarter, now operate as the beneficiaries of the ongoing struggles of indie development studios.

With its impact on cultural industries, scholars have examined crowdfunding from a number of perspectives. Interrogating the discourse that positions crowdfunding as a service which empowers marginalized creators and fans, Suzanne Scott (2015) argues while "fan-anced" crowdfunding does potentially alter the moral economy between fans and creators, each project has a different level of fan participation, with some treating fans as co-creators and others treating fans as merely the source of project financing. Focusing specifically on video game production, Anthony N. Smith (2015) argues for the co-creator perspective, suggesting that crowdfunding backers can and do influence developer design decisions. However, few scholars have focused on the neoliberal conditions that promote and facilitate crowdfunding. Daren C. Brabham (2016), for instance, questions the celebratory rhetoric that surrounds crowdfunding and suggests that the discourse that exalts crowdfunding shares many similarities with the one that has historically argued for de-funding public support of the arts. This chapter contends that while crowdfunding has enabled indie and marginalized game developers to create projects that may not have been possible otherwise, often while

inviting fans to help influence the design of the game, the almost wholesale embrace of crowdfunding by commercial indie developers is yet another facet to the underlying neoliberal ideology which drives the business strategies and labor practices of indie game production.

Launched in April 2009 by Perry Chen, Yancey Strickler, and Charles Adler, Kickstarter is a website that allows for "crowdfunding," a buzz word that means entrepreneurs or business startups appeal directly to their future customers for financing projects, business ideas, or other creative works (Wortham 2009). Kickstarter works by allowing individuals or companies with a U.S. bank account to post projects they want funded, set up a financial goal, a time limit to reach that goal (usually 30 days), and in many cases a tiered list of donation choices that net the donator an escalating array of benefits and prizes depending on how much they contribute. Once the funding period has ended and credit cards have been charged, Kickstarter keeps five percent of the total amount raised; their escrow partners, including Amazon Payments and PayPal, keep an additional three to five percent. The rest of the money goes to the project organizer to produce their promised work. Today crowdfunding has burgeoned into an industry of its own with several prominent services from which to choose. Kickstarter and Indiegogo are two of the most popular of these services, which operate by letting people contribute money to proposed projects they would like to see created. Patreon is a similar service, discussed in detail in chapter 4, but resembles a subscription service rather than a one-time contribution.

On February 8, 2012, indie game studio Double Fine Productions launched a new video game project on the fundraising website Kickstarter in order to finance a point-and-click adventure game, now known as *Broken Age* (2014), and a corresponding documentary

that would follow the game's development process. With an initial goal of $400,000 to be collected over the course of a month, the project quickly garnered over $1 million in funds within the first 24 hours, becoming at the time only the second project ever to earn that much on Kickstarter and the fastest project to do so (Cifaldi 2012). When the project ended its funding cycle on March 13, 2012, users had contributed over $3.3 million, eight times the original goal (Curtis 2012). Considered a resounding success, this experiment in game funding seemed to usher in a new era for many in the video game industry, one where Kickstarter could act as a viable alternative to previously traditional video game funding models. By skipping the usual middleman, the game publisher (i.e. Electronic Arts, Activision, Ubisoft), venture capitalist investor, or bank loan, in seeking financing for their game, the team at Double Fine arguably contributed to a rupture in established games industry business practices, one that has proven to be a viable model for hundreds of indies, albeit one with its own set of limitations and challenges.

In what might be called a passion project for Double Fine, the proposed adventure game was not *just* a personal investment for the developer. By drawing on its fans as the source of funding, the project became personal for the future players as well. In an exemplary case for participatory culture scholars (Jenkins 2006), the Double Fine Adventure game blurred the line between the developer as producer and the player as consumer, creating a partially imagined, partially real, development community that extended past the offices of Double Fine to include the over 75,000 people who helped fund the project. The accompanying documentary chronicling the game's development also allowed those who contributed at least $15 to the project the opportunity to digitally inhabit the space of Double Fine's studio and experience the development process as it unfolded. In this way, the Double

Fine Kickstarter campaign illustrates the blending of fandom, finance, production, and creativity that Anthony N. Smith (2015) discusses specifically in regards to crowdfunding and Henry Jenkins (2006) has pointed to repeatedly across his scholarship on participatory media.

On the Kickstarter page for its Adventure Game project, Double Fine writes, "For anyone interested in the inner workings of the game industry, either professionally or as a fan, this project will be a landmark in exploring the art of development. For people that just love great games, this is an opportunity to help bring one to fruition" (Double Fine Adventuer 2012). While there is a precedent for fan-funded projects in the past -- notably, the popular *Minecraft* (Mojang 2011) was purchased by millions of gamers before it "officially" launched in late 2011, as what would prove to be a fledgling example of the now common early access model -- the magnitude of money donated toward Double Fine's game and the speed at which it was given deserves critical attention (Rose 2011a).

Rather than understanding Double Fine's adventure game project as a result of Kickstarter's emergence, I contend that the availability of Kickstarter is only one facet to the crowdfunding initiative pursued by Double Fine. For instance, without social media websites like Facebook or Twitter that help various projects go viral and reach a wide array of potential backers, crowdfunding websites like Kickstarter and Indiegogo would not be as viable. The viral nature of projects like Double Fine's proposed game spread quickly through social media networks, finding an ever-expanding audience of like-minded enthusiasts. Yet again, however, rather than attribute the success of one technology (Kickstarter) to the success of another (social media networks), we must recognize that both of these technological phenomena depend on a cultural development within the video game enthusiast

community itself, a cultural impetus to get closer to the creative process. Thus, in addition to technological changes, Double Fine's Kickstarter experiment must be understood in relation to how it deviates from the traditional structures of the video game industry, how it relates to the history of Double Fine and Tim Schafer's relationship to this structure, and how shifts in audience expectations and the video game market helped form the logic behind the decision.

The history of Tim Schafer and Double Fine Productions illuminates the circumstances under which the studio made the decision to turn to Kickstarter. Starting his career in the video game industry in the early 1990s at the then named Lucasfilm Games, Tim Schafer contributed to the programming of the classic adventure game *Maniac Mansion* (LucasArts 1987) before going on to help write *The Secret of Monkey Island* (LucasArts 1990) with Ron Gilbert. After the success of *Monkey Island*, Shafer was given the lead role in the development of *Maniac Mansion* sequel *Day of the Tentacle* (LucasArts 1993). After this, Schafer would go on to create the still revered *Full Throttle* (LucasArts 1995) and *Grim Fandango* (LucasArts 1998) adventure games within the now renamed LucasArts. While all of Schafer's games were well-received, he felt dissatisfied with the support of his management. Video game historian Tristan Donovan explains, "Despite being showered with accolades, *Grim Fandango* sold nowhere near enough to cover the cost of making it . . . As word of its commercial disappointment spread, video game companies began turning their backs on the genre" (Donovan 2010, 349). Citing a lack of enthusiasm within LucasArts for the kind of narrative adventures he wanted to develop, Schafer left the studio to start his own game company, Double Fine Productions, in 2000 where development on the quirky adventure game *Psychonauts* (Double Fine 2005) began with new publishing partner Majesco.

At the time, Majesco was a "revitalized company out of New Jersey that had just gone public and had $70 million in its coffers . . ." but the publisher "never put quite enough money into any of the dozens of games it published" (Goldberg 2011, 294). Although Schafer was ultimately able to make the game he wanted, Majesco did not provide enough of a marketing budget to sell the unknown *Psychonauts* intellectual property to a 2005 audience already looking forward to the next generation of consoles like the Xbox 360 that launched that fall. It wouldn't be until many years later, in 2012, when Schafer would admit to finally making money off of *Psychonauts* after publishing rights reverted back to Double Fine and they released the game through the online game distribution service Steam. Yet it was the developer's next project, *Brutal Legend* (Double Fine 2009), the heavy metal-inspired blend between the adventure and strategy genres, which finally convinced Double Fine to question its relationship with traditional game publishers.

Originally, Double Fine had a publishing deal with Vivendi subsidiary Sierra for *Brutal Legend*; however, in 2007 Activision merged with Vivendi (Richtel 2007). After the merger, Activision reviewed the games Vivendi currently had in development, looking for franchises that could be iterated on, such as their successful *Guitar Hero* (at the time) and *Call of Duty* properties. Activision did not express interest in continuing to support Double Fine's genre-bending adventure game (Graft 2009). Seeing an opportunity to grab a half-developed game from its competitor, Electronic Arts acquired the publishing rights to *Brutal Legend* and proceeded to fund development of the game. In 2009, Activision sued Double Fine in an attempt to block the game's release by its rival, arguing it had received no compensation for the money Vivendi had invested in the game. In the wake of the lawsuit, Tim Schafer famously remarked, "Hey, if Activision liked it, they should have put a ring on

it," referring to lyrics from the popular Beyoncé song "Single Ladies" (Fritz 2009a). In later interviews, Schafer was quoted as calling Activision CEO Bobby Kotick a "dick" and a "total prick" (Yin-Poole 2010). This cavalier attitude, combined with a quick wit, have defined Schafer's persona in the video game industry. Nonetheless, Activision dropped the lawsuit in August of 2009 after an unspecified settlement where many speculate Activision received "little to no compensation and may have settled to avoid losing in open court" (Fritz 2009b).

Yet all was not copasetic between Double Fine and their new publishing partner Electronic Arts either. When questioned about EA's decision to publish *Brutal Legend* in 2008, EA CEO John Riccitiello stated, "I am well aware of what the game is. It's a very significant creative risk" (Alexander 2008). In fact, one wonders if the game would have been picked up by EA at all, given its risk, if their rival had not already partially funded the project, thus making its acquisition a sort of cheap public taunt. Although *Brutal Legend* did not flop at retail, it initially sold only 216,000 copies in its first month, a paltry amount for a moderately-budgeted console game (Thorsen 2009). In February 2011, Schafer indicated the game had sold 1.4 million copies, yet in a business that operates on immediate success, *Brutal Legend* was still considered a failure (Nutt 2011). While a sequel was initially considered, the idea was quickly dropped by EA after less than expected initial sales. Following yet another big budget failure, relatively speaking, and yet another strained relationship with a major game publisher, Tim Schafer and Double Fine decided to reorganize its internal teams, shifting to a production model that emphasized small games, modest budgets, and digital distribution. Within this context, Schafer and his team decided

the time was right to bring back the point-and-click adventure game that had made Schafer an icon in the 1990s.

The Double Fine Adventure Game Kickstarter launched on February 8, 2012, and became an instant viral success, ultimately garnering over $3.3 million when the funding period ended on March 13. Many game journalists, fans, and indie developers wondered if they were witnessing a possible paradigm shift in game funding for the industry. The amount of enthusiasm for the project, especially by other independent developers, suggested that a deep-seated discontent was finally expressing itself, a discontent with the traditional funding structure in the industry that limited the number of game projects that could be in development at any given time.

Shifts in the video game market and culture have influenced the success and potential repeatability of Double Fine's funding experiment. As the gaming industry has grown, a number of factors have led to the necessity for successful games to be either big-budgeted, highly promoted games referred to as triple-A or smaller-budgeted games, often but not exclusively from indie developers, that are digitally distributed. Many refer to this development as the death of mid-range games. A mid-range game might be understood as a boxed, retail game for contemporary consoles with a modest production and marketing budget. Within this context, small indie games have been positioned as the alternative to large, "mainstream games," best exemplified by the first-person shooter genre spearheaded by id Software's *Doom* (1993) and mainstreamed after the success of Microsoft's *Halo* and Activision's *Call of Duty* franchises. Lacking both the visual spectacle and advertising blitz of triple-A games or the niche appeal and unique aesthetics of indie games like *Super Meat*

Boy or *World of Goo* (2D Boy 2008), mid-range games often fail to reach an audience large enough to be profitable, a benchmark much easier for an indie-developed title.

Historically, the mid-range game could sell based on existing IP (the movie tie-in game) or by exploiting a popular genre of the time (the platformer in the 1990s and first-person shooter in the oughts). Yet as video games became more high-profile, audiences became more discerning, and marketing budgets ballooned, the mid-range game suffered from poor reviews, little promotion, and the stigma of neither living up to blockbuster spectacle games nor featuring innovative aesthetics or game design like indies are known for providing. Thus, even as bigger and bigger games became popular, a concomitant phenomenon occurred where smaller and smaller games garnered equal attention. Importantly, while it is arguable that indie games have always had an audience, however niche, shifts in the industry have made indie games far more visible in the last decade. As gaming enthusiast publications and communities migrated online, the ability for the average person to encounter indie game coverage has improved significantly. Moreover, indie game conventions like IndieCade and the Independent Games Festival portion of the Game Developers Conference give at least a small group of indie games a space of their own and a place to attract the attention of the press and the gaming public.

Alongside a public that embraces smaller indie games as the alternative to dominant titles that take fewer and fewer risks, a cultural desire to get closer to the development process has developed within the enthusiast gaming culture. This is arguably an intermedia cultural phenomenon, as it mirrors trends in other media whereby fans engage with media producers in increasingly corporate-sanctioned ways. Warner Bros., in fact, exploited fan engagement when the major film studio turned to Kickstarter to help fund the movie version

of its niche television series *Veronica Mars* in 2013, even though the studio could have easily funded the project without the crowdfunding campaign (Hills 2015). While these desires are aided by social media sites like Twitter, developer forum websites like TIGSource and NeoGAF, and the Internet to make the dissemination and sharing of information almost instantaneous between developers and players, this cultural mood should not be attributed solely to these technological shifts. The fan ambition to get closer to development is another factor that led to Schafer's decision to go forward with the Kickstarter project. More importantly, it is this fan drive to get closer to the development process that continues to make crowdfunding a viable option for indie game creators. For example, Schafer explains:

> "It's not just that we're making a point and click adventure, it's that we're sharing the process. I've always wanted people to know more about how we make the games, because I think it only helps people enjoy them, to realize how they're created by people, and how hard our teams work to make them right" (Walker 2012).

In the wake of Double Fine's success in 2012, dozens of indie developers turned to Kickstarter to ride the wave of enthusiasm shared by the indie development community and video game players alike. In 2012 backers contributed $83 million to 2,796 game projects (Kickstarter 2012). In 2013 more than 4,000 game campaigns were launched on Kickstarter, generating $106 million (Wowro 2013). Notably, the virtual reality headset Oculus and the microconsole OUYA had successful Kickstarter campaigns this year. This year also marked a high for video game contributions, indicating the fever pitch at which developers were flocking to the service a year after Double Fine's campaign in order to secure funding for their own projects. However, even in 2013, while projects grew 35 percent, backer contributions only grew 25 percent, suggesting enthusiasm grew with indie developers more substantially than with players. Contributions fell in 2014, leading to 1,980 successfully

funded projects totaling $89.1 million. Recent numbers suggest an even further decline. In 2015 backers contributed $46 million toward the successful launch of 421 video game projects, dropping almost 50 percent year-to-year (Kerr 2016). The crowdfunding revolution once celebrated as the future of indie game funding has settled down as it has become apparent only certain kinds of projects are finding success.

Rather than a service that any indie developer could count on for funding, a trend has emerged that suggests Kickstarter works best for particular kinds of projects. For instance, one kind of developer Kickstarter may work for are those with modest fundraising goals, a demonstrable prototype of their game, and an organic, enthusiastic backing community that helps promote the campaign on social media. The narrative-driven adventure game *Kentucky Route Zero* (Cardboard Computer 2013), for example, had a modest goal of $6,500 for the first episode of the serialized game. The game ended its funding in March of 2011 with $8,583. The series has gone on to be celebrated for its writing and art direction, selling enough to fund the remaining episodes of the series. While obscure developers have a difficult time funding their projects in most cases, with the right combination of preparation, strategy, and demonstrable product, small indies can garner enough support to fully fund modest game projects. Unfortunately, especially several years after Double Fine's success, the vast majority of wildly successful and celebrated Kickstarter game projects now come from established indie studios with recognizable properties.

Game creators with dedicated fan bases and a history of delivering quality content have started to turn to Kickstarter and other crowdfunding websites in order to pursue smaller projects traditional publishers might be hesitant to support. In retrospect, much of Double Fine's success was due to their history creating niche hits, like *Psychonauts* and *Brutal*

Legend. Significantly, Tim Schafer's reputation as a creative, if unorthodox, developer with a litany of cult classics under his belt cannot be ignored. As his twitter handle @timoflegend suggests, there is a cultural mythos that circulates around Tim Schafer and the games he helps produce. For instance, in the wake of Double Fine's successful funding experiment in 2012, some of the original creators of the 1988, PC-based, role-playing game *Wasteland* turned to Kickstarter to fund a sequel. The project finished with over 61,000 backers and nearly $3 million raised from an initial goal of $900,000. *Wasteland 2* successfully launched on the PC in 2014, eventually making its way to home consoles as well (inXile Entertainment 2014).

The trend of celebrated developers turning toward Kickstarter to fund long-dormant IP continued in 2015 when the campaigns for the *Castlevania* franchise spiritual successor *Bloodstained*, and the long-awaited sequel *Shenmue 3* both achieved massive success, buoyed by the involvement of the original designers behind both franchises, with each campaign raising $5.5 million and $6.3 million, respectively. The *Shenmue 3* campaign not only featured a beloved property and the involvement of its original creator, Yu Suzuki, it was also revealed on Sony's 2015 E3 (Electronic Entertainment Expo) press conference stage in front of millions of people watching locally – I was among the surprised attendees – and globally via an online live stream. It is notable that Kickstarter, having started out, in the gaming context, as a promising platform for indie developers with unorthodox ideas, has ended up resembling the mainstream media industries like film and music, with support coalescing around fewer and fewer titles that are all based on longstanding franchises and helmed by recognizable creators. Moreover, in addition to the mixed success many indie

developers have found on crowdfunding websites like Kickstarter and Indiegogo, there are still infrastructural hurdles they have to face.

While I have sub-titled this section "Kick(start)ing out the Middle-Man," there are still intermediaries in the crowdfunding process indie studios have to navigate. In order to acquire their money from websites like Kickstarter and Indiegogo, indie devs often have to deal with Amazon, PayPal, or other escrow services, each of which has its own internal policies that can prove to be a hindrance to developers obtaining their raised funds. Not only do these escrow services take a percentage of the funds donated, on top of the percentage Kickstarter itself takes, but they have also been known to withhold funds until developers prove they have made progress on game development (Klepek 2013). In such cases, from the developer's perspective, PayPal is attempting to aggressively police the development process, making them an unwanted producer on the project. In fact, developers who have faced this dilemma were only able to lift the restrictions on their funding after going public with the problem via twitter. In each case, the restrictions were lifted shortly thereafter, yet the overall policy remains in place, proving that despite managing to shirk traditional funding methods like publisher contracts or venture capital firms, indie developers still need to wrestle with intermediaries and negotiate confusing, often restrictive rules in order to get the money necessary to fund the development of their games. However, one intermediary that indie developers have embraced is the early adopter.

The early access funding model represents another significant change to the financing of indie games while also further cementing the increasing intimacy between game developers and players. Best known for its deployment through Valve's Steam, the leading digital distribution service for PC games, this model works by allowing developers to sell

unfinished versions of their game to players eager to play them as soon as possible, warts and all, a transaction based on the idea that fans want to take part in the production and development of the game product. Notably, this is the same impulse that encourages people to contribute to Kickstarter campaigns, ostensibly donating money both for the promise of the finished game but also to feel apart of its development process.

In the early access model, developers usually commit to releasing new builds of the game on a regular basis. This allows players to see the game change sequentially over the course of its development. The benefit of this business model for developers is that it supplies them with early access to capital during the development process, which keeps companies afloat long enough to finish the game and sell it to a wider public upon the game's completion. In many cases, early access affords developers the chance to complete games they might not otherwise have had the opportunity or capital to finish. Moreover, as fans play test each new build of the game, the developers gain insight into which features work and which features can be dropped in later versions.

From the players' perspective, they get to purchase the ability to see a game progress from prototype to finished product. In many cases, developers take player feedback seriously. Many early access players are more than happy to buy broken products in order to engage in an open dialogue with developers who they feel recognize and respect their informed opinions as dedicated game players. As such, this model not only represents an emerging funding option for indie developers eager to survive and pay their bills while building their game, it also reflects the same developments in gaming culture that have made Kickstarter a viable option: a convergence between players and developers, and a desire on both ends to get closer to one another for mutual benefit (Banks 2013; Kucklich 2005). Although most

commercial indie developers would love their early access titles to nurture a dedicated community that will help give the game a sizeable sales bump when it launches as a finished product, the core idea behind this model is to generate enough operating income to continue to develop the passion project.

This economic relationship between player and developer not only compromises the ideal of autonomy and authorial vision that indie discourses espouse, but also demonstrates how commercial indie developers share some of the same business techniques as the major publishers they are defined against. Many developers encourage player feedback on early builds of their games. This allows developers to identify problem areas in their games and fix them before a wide release. Player feedback can also take the form of suggestions on improvements to various game systems or even in the narrative direction for a game. However, developers shatter the thin veneer of creative autonomy when they alter their creative decisions based on player feedback. Of course, this is not a condemnation of the practice. It is a smart business decision to rely on free – or indeed profitable – player feedback to improve your product before releasing it to other more discerning players. But this practice does evoke the specter of exploitation the industry has been accused of in regards to beta testing.

Particularly on the PC, publishers have historically offered early versions of their games, called betas, to eager players to test for flaws in code and to tweak elements of game design that prove frustrating or unbalanced. Taking advantage of player enthusiasm for highly anticipated releases, publishers exploit the "free labor" (Terranova 2000) of beta testers who are more than willing to perform for free the normally paid role of a quality assurance professional. Julian Kucklich (2005) has framed this kind of fan engagement as

"plabour," a term that illustrates how our leisure activities have blurred with our work activities such that video game fan activity has been mined for its market value by gaming companies. Contrary to what one would expect, indie developers have borrowed this approach, framed now as transparent or open development, and monetized it to create the early access model. Not only do indie developers gain the same insights from player feedback that major publishers have historically received from beta testers, but they also extract payment from players as well. This business strategy in effect convinces players to pay for the opportunity to be exploited and work for free. The relationship becomes an ideal one for any business interested in extracting the most value for the least amount of financial investment. Recognizing the economic value of early access, major publishers were quick to adopt it themselves. As a result, the practice of releasing early betas for major triple-A games, especially multiplayer-focused games, is now routine, integrated into marketing schemes, and is often presented as an incentive to pre-order major releases. Brendan Keogh demonstrates this feedback loop when discussing the adoption of pre-release distribution and sales from the indie sector, used initially by *Minecraft*, by the mainstream industry, which has now "been formalized through the normalization of 'beta access' to larger games, as well as Steam's 'Early Access' program" (Keogh 2015, 156).

Emerging funding sources have allowed indie developers to avoid historically abusive partnerships with major publishers and produce game projects that would otherwise not exist. It is worth recognizing that the growth of models like crowdfunding and early access reflect the breakdown of borders between producers and consumers. This phenomenon has been spoken about in a number of ways, from prosumers (Toffler 1980) to produsers to participatory culture (Jenkins 2006). This creates invested players who help shape the design

of the game. It also frames indie developers as being more in touch and intimate with their fanbase than their corporate counterparts. Accordingly, indies are framed as more accessible. Yet programs like early access or crowdfunded games that make early builds of games available to backers also result in players effectively paying for the right to playtest unfinished entertainment products. Here indie developers become as guilty of exploiting the enthusiasm of players as publishers have been for exploiting both players and independent developers alike for decades. Nonetheless, the relationship forged between indie developers and their crowdfunding supporters can be framed as equally diluting the supposed autonomy and authenticity of the creator or studios vision for the project. Not only are indie developers participating in the potential exploitation of players, but many feel obligated to respond to player feedback. This is especially the case when players negatively react to developers who do not meet their demands through backlash campaigns. These campaigns can sour the reputation of studios or game projects even before they have officially released to the public. Therefore, when entering into these contracts, developers have to be prepared to alter their original vision in order to appease invested (in terms of time and money) players.

We can see the benefits and consequences of entering into a reciprocal relationship with backers in the example of indie studio Vlambeer's experiment with their game *Nuclear Throne* (2015). This game had a loyal, passionate audience. Vlambeer even announced they would stream development of the game on a weekly basis. Exercising what they call "performative game development," the developers live-streamed the development process twice per week. In order to make sure the people buying the game were fully invested in the project along with them, Vlambeer charged a premium price for the unfinished game. While this arrangement did provide for a transparent development process, direct communication

with enthusiastic players, and motivation for the developers to continue working on the game, it also proved exhausting for Vlambeer. The developers updated the game 38 times based on player feedback, once per week, over the course of 38 consecutive weeks.

Most emerging funding sources for indie developers are framed as providing indies with the financial backing to avoid entering into financially and creatively compromised partnerships with publishing partners. Yet for every fan darling developer like Double Fine, there are dozens of indie developers who cannot count on Kickstarter as a viable funding option, since not only are players spending fewer and fewer dollars on the service, but they have also concentrated their support on beloved designers and existing franchises. Moreover, in the process of gaining independence from the major publishers, indie studios have developed a dependence on other companies and groups, including venture-backed crowdfunding services, their escrow partners, and scrutinizing fans who are more than willing to pay for the opportunity to help steer the direction of a game's development. While indie studios have more options for project financing than ever before, these scenarios do not necessarily improve the precarious place of indie development and, in fact, has led many to engage in the same kinds of exploitation of players as major publishers, so successfully that publishers have since adopted many of the same strategies.

It is difficult to condemn emergent funding models, considering the benefits they offer developers and players alike; nonetheless we should recognize that, despite serving indie creators, such models are not challenges to the neoliberal logics undergirding the contemporary media and video game industries. As Brabham (2016) notes, while referencing Van Dijck and Nieborg (2009), "Discourse that praises new technological developments, particularly business discourse, tends to mask neoliberal ideologies and capitalist

assumptions with language of democratization, collaboration, and all that glitters" (2). Brabham accuses the celebratory popular discourse that surrounds crowdfunding as undermining the very real need for increased public arts financing. In fact, Brabham asserts, crowdfunding is essentially a private sector replacement for public arts funding, and crowdfunding's emergence goes hand-in-hand with increasing efforts to defund public programs of all kinds in favor of private solutions, a hallmark of neoliberal economic philosophy as exercised by conservatives and liberals alike over the last 30 years. Moreover, unlike public arts funding, which some contentiously argue awards grants based on artistic merit and cultural significance, crowdfunding reproduces the free market model of supply-and-demand, a capitalist form of democratization whereby consumers exercise their vote through purchasing goods and services on the free market. The rise of crowdfunding vis-à-vis the decline of public arts grants is particularly a problem in the United States and other countries that do not offer robust arts funding or video game development incentives. Although recently certain organizations like the National Endowment of the Humanities (NEH) for educational-based indie game projects, these projects do not have the same cultural focus of their better-funded foreign counterparts. This is not so much the case in countries like Canada and the UK, for instance, which recognize video games among other art forms such as theater, film, dance, photography, radio and television as cultural objects that qualify for federal art grants. Such provincial and country-wide arts funding seeks to promote national culture through the arts and works in conjunction with creative industry policies to also bolster local economies and talent pools. With its uncritical embrace of crowdfunding and other private sector models, commercial indie games do not offer ideological opposition to the mainstream industry but, in fact, reproduce the dominant

industry's underlying neoliberal assumptions about operating game development enterprises in the new creative economy. Moreover, crowdfunding and early access are part of larger and ongoing transformations and realignments in the video game industry, transformations that do more to unite the business practices and work routines of major publishers and indie studios than distinguish them from one another.

Crunch By Any Other Name

The infamous workplace routines and practices of major video game publishers have been well documented. For instance, Nick Dyer-Witheford and Grieg de Peuter (2009) have spotlighted the EA Spouse scandal, a watershed moment in the cultural and industry awareness of toxic working conditions for video game developers. Known for such titles as *Battlefield*, *Madden NFL*, and *FIFA*, Electronic Arts (EA) is one of the world's leading producers and publishers of video games, employing over 8000 workers globally. Despite its success, EA has repeatedly been criticized for poor working conditions and compensation at its production facilities worldwide. These critiques reached a critical mass in 2004 when Erin Hoffman, the wife of an EA employee, posted an anonymous letter online criticizing long hours, unpaid labor, and unreasonable expectations at EA facilities (ea_spouse 2004). The posting identified "crunch time" as the worst of these offenses, the period leading up to the launch of a video game when workers are expected to put in 12-18 hour days, completing game assets, fixing game bugs, and polishing and readying the final build for the heavily promoted launch date anticipated by both fans and publisher shareholders alike. During these intense stretches, developers work seven days a week, leaving essentially no time for family, friends, rest, or recreation. The EA Spouse postings created a stir among games industry

workers, leading to a successful class action lawsuit against EA and a reshuffle of company management.

Unfortunately, the EA Spouse scandal did little to eliminate the epidemic of crunch time in the industry. Following the EA Spouse scandal, the International Game Developers Association (IGDA) began distributing an annual quality of life survey in 2004, with the purpose of collecting data on industry demographics, compensation, and working conditions. According to their recent 2015 survey, the majority of game developers are university-educated, young men (27 to 34-years-old) who are married or in long term relationships, without children, and work at large, publisher-owned or contracted studios in departments that include art, programming, quality assurance, design, management, and promotion (IGDA DDS 2014). Most employees work at companies with 100 or more employees and have between one and six years of experience. Employees endure long hours (9-12 hour days) and mandatory (often uncompensated) overtime under intense pressure, sometimes reaching between 50 and 70 hours per week during periods of crunch (Legault & Weststar 2013). On average, game workers experience at least 10 weeks of crunch time per year (Legault & Weststar 2012). The majority of industry salaries fall between $50,000 and $75,000 per year, but more than one third of employees receive no formal compensation for overtime worked during crunch periods. Even though many receive bonuses after their respective game launches, almost 60 percent say bonuses do not adequately compensate them for the additional labor.

Of course, conditions vary from studio to studio, but there is an alarming pattern of abuse and exploitation throughout the development cycle of each major title. For instance, most shops maintain a skeletal core staff during the pre-production phase of development

when ideas are hashed out, prototypes built, and design documents written. These shops then hire more staff as development progresses, largely in the form of contract labor, who generally earn less than core staff members. Moreover, short-term employment and flawed crediting systems make it difficult for workers to earn recognition for their project contributions, which in turn undermines their chances for future employment (Rose 2011b).

Besides the vagaries of digital game production, patterns of employee discrimination based on identity haunt the games industry. Long under-represented in the digital game labor force, women now make up approximately 22 percent of the total industry (IGDA DSS 2014). Women get paid less than their male counterparts and tend to hold positions in marketing, public relations, or project management rather than working as programmers, artists, or creative directors ("Salary Survey" 2013). Furthermore, discrimination and hardships escalate if a female employee decides to have a child, since it is commonly argued that motherhood is incompatible with the demands of game development (fatherhood, not so much) (Consalvo 2008; Alexander 2014). Exacerbating gender problems at the core of game development, Nina Huntemann (2013) has also illuminated the systematic exploitation of women in digital game hardware production and game promotion at industry trade shows. In November 2012, the full scope of this problem became public when women (and some men) across the games industry began to tweet about gender discrimination (deWinter & Kocurek 2013). Marked by the hashtag *#1reasonwhy*, many wondered why women are underrepresented in the games industry, while others responded by pointing to inherent gender bias, harassment, and the masculinist work culture. Unfortunately, this public discussion did little to attend to the underlying structural problems embedded in gaming culture, and in 2014 a disparate group of spurned gamers organized under the moniker

"GamerGate" to wage a vitriolic campaign targeting feminist and progressive critics, developers, and scholars engaged in critiques of the gaming industry and culture (Shaw et al. 2014). Please see chapter one for a longer examination of this phenomenon and its links to indie and alternative game developers.

Other forms of discrimination are also cause for concern. People of color and queer people have spoken about barriers to employment and hostility in the workplace that manifests itself both in the conditions of labor and in the output of the industry, which is subtly if not overtly tinged with misogyny, racism, homophobia, and transphobia. Current industry demographics based largely in North America, but indicative of other markets, reflect this problem, with an overwhelming 79 percent reporting as Caucasian and 86 percent as heterosexual (IGDA DSS 2014). However, these demographics are indicative of other markets. Moreover, industry events and networking opportunities skew towards heterosexual white young males, many of whom embrace their privilege as a seemingly necessary prop against the general adversity and insecurity that they sense in their working lives.

Scholars and industry critics have not ignored these difficult working conditions (Williams 2002; de Peuter and Dyer-Witheford 2005; Kerr 2006; Izushi and Aoyama 2006; Deuze et al. 2007; Kirkpatrick 2013; Vanderhoef and Curtin 2016). Dyer-Witheford and de Peuter (2005), for instance, have called game workers "passionate pay slaves," which they define as an enthusiastic young, unattached, idealist, anti-corporate workforce. This flow of enthusiastic young labor persists because of the myth of the industry as a passion industry, defined by play, where you can realize your own creative endeavors, rather than one defined by strict deadlines, optimized workflow routines, marketing analytics, profit margins, and investor satisfaction. Many game workers begin as amateur producers, engaging in "playbor"

(Kucklich 2005), video game fan labor like beta testing or game modification, that often provides free value for commercial game companies. Focusing specifically on the labor of independent game companies who partner with major publishers, Casey O'Donnell (2014) refers to game workers as "adventure capital," or a low-risk resource from which major publishers can siphon value. In the case of success, a publisher will swoop in to acquire the studio and the IP, while in the case of failure, the indie studio folds while the publisher writes off the loss and moves on. O'Donnell compares his "adventure capital" to the "venture labor" Gina Neff (2012) discusses in relation to tech startups, differentiating his concept from Neff's by emphasizing the role of "play" in the mindset of game developers, particularly the way this mindset expects and accommodates failure and hardship as part of the process (154). In this way, play for O'Donnell operates in the same way Neff describes "risk" working, as a structuring agent that inspires and encourages as much as it threatens workers.

Many claim that these conditions are improving, thanks largely to high-profile stories like EA Spouse. In fact, in the last decade, horror stories similar to 2004's EA Spouse have come out of development studios including Rockstar in San Diego, Team Bondi in Australia, and 38 Studios in Rhode Island (Legault and Weststar 2016). Moreover, the popular gaming blog Kotaku has an ongoing series dedicated to the harsh realities of working in the games industry that touches on subjects such as age discrimination (Serrels 2015), ongoing issues with crunch time (Schreier 2015), job precarity, and mass layoffs (Schreier 2014). Instability and insecurity are therefore the norm for most workers, and mass layoffs are standard practice following a game launch. As a result, the average time workers spend at any given job in the industry is just over three years (Legault and Weststar 2012).

More recently, critics have suggested new development models may offer a solution to crunch time, models like "early access" discussed earlier in this chapter, where games are released unfinished and slowly completed over time, or "games as service," where games receive frequent updates as an ongoing product rollout. The idea is that, since deadlines for game completion are now more fluid, crunch time can be reduced or eliminated completely. However, evidence suggests these emerging models do little to deter the use of crunch, and in some cases increase the number of crunch periods, particularly if game updates are promised at particular times. In other words, the harsh working conditions in the video game industry are as omnipresent as ever, and the factors that contribute to these ongoing abuses have only grown in recent years.

The rise of local tax incentives to attract creative industries and the standardization of outsourcing has also contributed to these abuses. Major publishers now routinely establish new studios in areas that offer rebates or incentives. Locations like Montreal and London have benefited considerably from this practice. In fact, in 2015, the first year of the UK Video Games Tax Relief program, 237 games received tax rebates, totaling over $1 billion. These local, regional, and national policies have allowed creative clusters, including film and television production, technology development, and game companies, to emerge and thrive in the new creative economy. Yet the problem with subsidies is that they are always only temporary, subject to political whims, and do not guarantee better working conditions for creative labor. For instance, this trend ended up backfiring for Rhode Island when the state spent $75 million attracting 38 Studios from Massachusetts only to have the studio go bankrupt before the small state could benefit economically from its presence (Crecente 2012; Nichols 2014). Moreover, even as incentives dictate the growth of digital game production

clusters, they also just as commonly tend to uproot families, force them to move from state to state, and sometimes leave them jobless with freshly signed mortgages, as was the case with the workers at 38 Studios. Meanwhile, outsourcing development duties to the lowest bidding studios all over the world, including low-cost emerging regions like Brazil and India, only increases the pressure on studios in established regions like North America and Europe. The net result is a race to the bottom in terms of working conditions and compensation for developers everywhere.

One response to these trends has come from industry advocacy groups, like the IGDA, the leading support organization for gameworkers. The IGDA have tried to draw attention to the dismal conditions of game labor, but the organization lacks the resources to engage, much less challenge, the dominant firms whose scale, reach, and mobility gives them the upper hand over workers that are toiling long hours and shifting from one studio to the next every few years. Moreover, despite such strenuous conditions, game workers have historically been indifferent to unionization.

Unlike craft workers that organized unions and guilds in the film, television, and publishing industries during the first half of the twentieth century, video game workers came of age during the dotcom boom. Educated, elite, and perpetually in demand, they participated in the spiraling fortunes of the digital economy around the turn of the century. Romantic notions of creative genius and individualism that permeated early online and software cultures, as well as the libertarian ideology of Silicon Valley, shaped the mindset of a generation of game developers (Streeter 2010). These workers, like the early hacker culture that influenced them, were products of both a 1960s countercultural mistrust of authority and corporate structures and the sweeping neoliberal reforms of the 1980s (Barbrook and

Cameron 1996; Frank 1998). Thomas Streeter (2010) borrows and expands upon Raymond Williams' (1961) concept "structure of feeling," which Williams differentiates from ideology by emphasizing its lived, affective dimensions, to explain the rise of neoliberalism within tech culture. Streeter suggests the affective pull of romantic individualism within a burgeoning tech culture made it susceptible to neoliberal economic sensibilities. In other words, tech workers, including video game developers, value the concept of individual creative freedom and see collective organizations, whether corporate or governmental, as anathema to the goals of innovation and creativity. To this group, unions are disdained as remnants of an industrial past, which is in part why practices like unpaid overtime and crunch time in the industry have been largely unchallenged on a collective level.

Video game development emerged during a transitional phase from industrial to post-industrial work, which we can also understand as globalized capitalism, neoliberal capitalism, or what Manuel Castell's (2000) calls the emergence of the "network society." In Castell's network society thesis, capital becomes increasingly concentrated and globalized while labor becomes fragmented, individualized, diversified, divided, and re-spatialized through routinized use of teamwork, networking, outsourcing, and subcontracting (475). A combination of prevailing neoliberal ideology, "structure of feeling," industry demographics, and the re-spatialization of work under globalization all contribute to a general anti-union ethos in the games industry. Consequently, the lack of unionization also means that project-based employment contracts rarely provide health and retirement benefits to those individuals who migrate from one company to the next in order to secure a semi-regular paycheck.

With collective organizing currently seen as a third rail in the industry, many industry professionals and critics view the rise of independent developers as a reaction to these problematic labor trends. According to the dominant discourse, indie studios offer an alternative to the harsh, corporate work routines of the major publishers, providing workers both creative autonomy and more humane work schedules. This perspective contends that commercial indie developers, both those that have defected from corporate contexts and those transitioning from hobbyist or student development, choose to go indie based on their knowledge of the working conditions, studio structures, and design constraints in the publisher-driven portion of the industry.

In going indie, most developers hope to escape or avoid the harsh work routines of the corporatized games industry and take control of their own means of production. Having analyzed the structures that drive developers to go independent, Chase Bowen Martin and Mark Deuze (2009) support this perspective when they contend that most developers who leave publisher-owned studios to start indie firms do so because they are tired of the "fordist organizational models and grueling scheduling demands" and want to establish better development workflows with more personal stakes (Martin and Deuze 2009, 291). However, as Martin and Deuze admit, the move from the dominant industry to the indie sector often requires a liminal period where companies remain beholden to large publishers or corporate clients for revenue streams.

In order to build capital, many fledgling indie developers start out as work-for-hire developers. As contract developers, these studios create software for companies like insurance firms, financial institutions, commercial businesses, and non-governmental organizations. This was the case when several industry veterans founded indie studio Nitreal

Games in Poland in 2009. In an interview at a small café, studio co-founder Daniel Sadowski explained to me:

> "Actually, the truth is when we launched the company we didn't begin with making games. One of the early projects we made was a piece of software that helped a call center take requests for repairs of various hardware that another company was producing. Bank applications. Web applications. Things like that. We knew that we wanted to make games but we knew that we couldn't make games at the beginning" (2014, pers.comm., Sept. 17).

During these especially unstable first few years, many indie companies also work as sub-contractors for the same large publishers they had hoped to escape, producing game assets for large franchise titles that release annually. It is frequently cheaper for publishers to outsource the creation of certain character, level, and art assets to indie firms rather than burden their already over-worked teams who are focused on implementing and refining the game's core mechanics, features, and design. Adding insult to injury, many of these contracts stipulate that the indie studio cannot discuss the particulars of their work and thus go un-credited.

Burned by the management styles and harsh workplace routines of corporate, publisher-run studios, many indies attempt to run their studios with a more humane work/life balance. They often implement flexible 8-hour workdays, usually requiring employees to be in the office only during a 4-hour "core" period when department meetings are held that require everybody present. Employees are then free to fit their personal schedules around these core work hours, putting in the other four hours at any other time of day, sometimes even working from home. Furthermore, many indie studio managers go through great pains to avoid crunch time, either by establishing flexible launch windows rather than firm launch dates, or by mapping out the development cycle in a way that seeks to avoid last-minute, intensive work sessions. While they are not always successful, and small periods of mild

crunch frequently occur nonetheless, many indie developers still recognize the problems of working conditions within the gaming industry and attempt to avoid or assuage them.

Warsaw-based Flying Wild Hog is one example of an indie studio that makes a conscious effort to mitigate the worst aspects of working in the games industry. Studio co-founder Klaudiusz Zych admits that crunch is an unfortunate part of game development, but stresses that he tries to make it as easy on his employees as possible. Sitting together in the Flying Wild Hog offices, he tells me, "We pay for crunch, for additional hours. Most companies do not pay for crunch, because that's just the way it is. You have your monthly salary but you have to work crunch when there is crunch. There's nothing you can do" (2014, personal comm., Sept. 18). While labor laws vary by territory, the reason many companies get away with not paying for crunch is because salaried employees are expected to work as many hours as needed to complete projects. Flying Wild Hog also has an option to swap paid crunch hours for earned vacation days. Moreover, unless there's a reason for the team to be together in the office, Zych allows developers to work crunch periods from home, so they can at least see their families during intense development sessions. These considerations helped Flying Wild Hog come in second place in an informal online survey that asked Polish game developers where they would most like to work. Unfortunately, despite the favorable conditions, it would appear indie studios like Flying Wild Hog are more of an exception than a rule.

The fantasy of self-sufficiency, undergirded by neoliberal logics of owning the products and outcomes of one's own labor, often crumbles under the weight of reality: making games is very difficult and expensive, and success is never guaranteed. Besides necessarily engaging in periods of crunch time, some indie studios also develop traditional

corporate hierarchies that privilege company founders over contracted developers hired on later. For instance, Dutch studio Two Tribes attempted to transform their work-for-hire business model into one driven by original games after nearly 10 years of surviving off contract labor, earning just enough to stay in business. After launching its IP *Toki Tori*, Two Tribes went to work on a sequel that ended up taking longer than expected to complete. When *Toki Tori 2* failed to sell as expected, the company collapsed and was forced to lay off its entire staff. However, the publishing arm of the company remained, retaining ownership and distribution responsibilities for its catalog of games. With the company's debt erased, the founders simply started a new company with the same name and focused on making smaller, less risky projects (Rose 2014). Essentially, this collapse only affected the company's employees, all of whom lost their jobs. The owners were left with the recognizable IP and started another company atop the ruins of the old, free of its debt and in possession of its most valuable assets. Small, project-based companies in the creative economy, like VFX firms that provide the fantastic visuals for today's blockbuster films, increasingly use this kind of business strategy. In these cases, company founders largely escape the calamity unscathed, while the on-the-ground VFX artists are continually devastated by the nomadic, precarious lifestyles these reckless management styles engender (Curtin and Vanderhoef 2015). Hence, while some indie game developers specifically structure their studios in opposition to the trends in the publisher-run portion of the industry, others do not so much offer alternatives to the precarity and flexibility of the major publishers as they recreate the same systemic problems and working conditions on a smaller scale, sometimes with the same abusive results: long hours, unfair pay, and job insecurity.

Mobility has thus become a required trait for creative workers around the world. This has long affected the major game publishers and their subsidiary development studios, which are routinely consolidated and relocated from one favorable location to another. However, the commercial indie games sector also demands mobility from its workforce. Even in an era when indie game creators collaborate remotely online, some studios still require face-to-face interaction on a daily basis. For instance, after working from his home in Spain became too difficult to meet the demands of a particular project, one artist I interviewed, Albert, moved to Prague to live and work out of a two-bedroom apartment with two other developers, leaving a long-term girlfriend behind for the chance at temporary employment. After the team expanded, a programmer from Romania, Robert, also relocated to Prague in order to secure work on the indie project.

Even solo indie creators subject themselves to exhaustive working conditions, sacrificing their opportunity to define a healthier work/life balance for an existence where work and life become blended together, inseparable. Indeed, working as an indie can be just as grueling as working at a major publisher-owned studio, especially for smaller shops sometimes consisting of just one or two people. *Braid* developer Jonathan Blow claims he only works four hours per day, except for, significantly, self-imposed periods of crunch, yet twitter was abuzz in late January 2016 when he tweeted what appeared to be a jar of his own urine along with a message implying that he has been using the jar in order to work tirelessly from his desk while finishing up his latest project *The Witness* (2016). While in all likelihood a joke, the reason the joke resonates is because people recognize the pattern of self-abuse among solo indie developers.

For example, Pascal Bestebroer runs a one-man indie outfit called Orangepixel where he handles almost every aspect of development (Bestebroer 2013). Bestebroer describes waking up in the morning and sitting down at his kitchen table with his laptop for eight to nine hours until it's time to make dinner. Afterwards, while watching TV, Bestebroer will put in another few, less rigorous hours of work. Hence, despite many indie outfits being born out of frustrations with working conditions in major firms, most indies end up individualizing and internalizing the same intense work routines out of necessity, regardless of whether they have to answer to anybody of authority such as a supervisor or publisher. While undergirded by neoliberal ideology and discourse, this tendency to reproduce particular work rhythms is also embodied. Through ritualized practice and everyday experience, the rhythms and routines of mainstream game development result in what Michel Foucault (1978) calls bio-power, or the disciplining, measuring, and controlling of bodies to suit the machinations of capitalism and/or the State. While their independence grants them more flexibility over their work time, it does little to negate the enormous amounts of time still needed to produce an original and compelling digital game product. In other words, many indies end up trading in corporate-mandated periods of crunch for self-imposed periods of crunch often excused or rationalized through the rhetoric of independence, autonomy, and self-determination.

Nowhere is this more clearly observed than at regular "game jam" events. In game jams, disparate game developers converge for short periods of time (anywhere from 24 hours to a week or longer) and work around the clock to produce a playable game prototype. Some scholars have framed game jams as progenitors for "communities of production," or collaborative-based development contexts that provide avenues for experimentation, testing and feedback, idea exploration, skill development, and moral support (Guevara-Villalobos

2011). This position has some merit, as game jams have time and again resulted in novel game ideas that developers then expand upon and release as complete games. It should also be noted how much passion for art and design fuels these increasingly common events. However, because of the elation and epiphanies gamejams often engender, most scholars have failed to critique these community events for lionizing the worst aspects of working in the games industry and again using the rhetoric of passion, play, and creativity to justify the extreme work sessions. Game jams are a direct import of this tireless approach to work meant to inspire both spontaneous creativity and productivity. Game jams enact crunch time purely on a voluntary basis while they are frequently discussed as the perfect combination of social and work events.

The trend throughout these examples is that many indie game studios are structured a lot more like technology startups than avant-garde art studios, driven by the same neoliberal logics of the dominant games industry that demand sacrifice for success. For instance, Nine Dots, an indie developer in Quebec City, has tried to create a studio where employees actually work for free in exchange for a share in the profits from game sales (Boucher-Vidal 2014). Specifically, the studio promotes itself by promising creative input and a strict 8-hour workday for all employees, as long as developers are willing to go without payment until the launch of their first game. Although such an experimental scheme may work in a country with universal access to healthcare, like Canada, in the US such a scheme can be devastating should a health crisis strike an employee who has been unable to purchase his or her own adequate insurance. Other indie studios have taken similar approaches, with some even gamifying their studios, offering points for completing certain development tasks that can be exchanged for profit-sharing percentages (Sinclair 2015). In both of these examples,

compensation becomes an afterthought to the promise of creative input and a workplace defined by play.

Furthermore, despite having concentrated pockets of vocal critics, the commercial indie game scene does not have significantly improved demographics. When analyzing site-specific indie development communities, Fisher and Harvey (2013) have noted that "despite this insistence on difference through a disavowal of the mainstream, the Toronto scene is just as homogenous," consisting of a majority of white men (1). Indeed, dovetailing with the arguments presented in this chapter, Fisher and Harvey suggest it is in the reproduction of a neoliberal (and post-feminist) discourse where indies reproduce many of the ideologies so prevalent in the mainstream industry they purport to be opposing (36). However, as chapter one examines, while the commercial indie development space is still dominated by a white, heterosexual, masculine identity, there are significant and growing pockets of women, people of color, and queer game makers operating both in and around the commercial indie space, simultaneously challenging it and the mainstream industry's lack of representation and diversity. While there are no clear metrics for success, or industry-wide goals, all agree that diversity is a problem that needs addressing.

Rather than an oppositional or insurgent movement, indie game developers are actually a symptom of the kinds of structural and workforce changes encouraged by the games industry in particular and the creative economy more generally. Instead of feeling threatened by indie upstarts, James Bennett and Niki Strange (2014) have argued that the creative industries have actually "embraced different notions of independence in the move toward outsourcing, freelance and precarious labor. Here, to be independent within the media is to derive autonomy, creative freedom and choice in one's work in exchange for risk,

flexibility and self-exploitation" (2). In fact, as I have discussed, the rigors of game development actually forces indie studios, ostensibly opposed to corporate practices, to orchestrate strategies and workplace routines reflective of the major publishing companies. This is especially true for indie developers as they grow larger, expand their workforce, and start to develop bigger, more expensive game titles.

Without an examination of the actual production practices and working conditions of commercial indie games, one can easily fall victim to the obscuring fog of discourse that romantically frames indie creators as counter-hegemonic artists, the vanguard of genuine cultural expression and authenticity, or somehow entirely separate from or in opposition to the production practices and entrepreneurial logics of the dominant industry. Nadav Lipkin (2013) argues that the popularization of indie games and their incorporation into mainstream gaming discourses and markets have created a situation not unlike Marx's commodity fetishism, whereby the labor involved in producing indie games, formerly presupposed to include small, bootstrapped teams, according to Lipkin, becomes obscured or reduced in the game player's consciousness. Lipkin summarizes, "When the political economics of the products changed as a group, the common denominator between all games being called 'indie' turned into mere appearance, rendering production invisible" (19). While I agree that game development, in general, is largely invisible to the average player, Lipkin seems to indicate that previous generations of indie games did not obscure the labor of developers and that, at some point, the incorporation or commodification of indie games transformed them into a commodity fetish. This presupposes an earlier, supposedly "purer" time in independent game development where the labor of game development was encoded in the games themselves and easily decoded by discerning players. On the contrary, video game history

charts a course whereby a veritable armada of independent game developers, far from disappearing, found success and grew to become some of today's largest developers and publishers (Rockstar Games, Activision-Blizzard, etc.). Rather than comparing today's indie games to those of the past, we need to understand each within their own socio-political-historical moments and understand that the majority of indie game developers are interested in generating considerable revenue from their game development, regardless of however much they want to wax artistic and philosophical. This is not to dismiss the very real artistic goals of many commercial indie game creators, but rather to illuminate in the light of day the economic realities of building games in a capitalist system and of the increasing imbrication of neoliberal and indie logics. In other words, regardless of whether they consist of one or dozens of developers, indie studios are driven by the desire to create innovative games while also building a sustainable commercial enterprise. Unfortunately, the two goals do not always work together, and as a result, the development environments of indie studios can look and feel a whole lot like the major studios they are ostensibly opposing.

Organizing and Alternative Labor Models

Game workers from major or indie companies are not without options for directly addressing the abusive working conditions that plague the industry. Despite the shortcomings of trade groups, the IGDA has over time come to recognize the need to take stronger action on behalf of workers. After the economic downturn in 2008, the IGDA established a Healthcare program that offers pooled health and benefit plans for U.S. members (IGDA 2009). The IGDA has also pushed for more diversity in hiring practices, for example, supporting the spin-off organization Women in Games International (WIGI). WIGI attempts to provide

mentorship and safe spaces for women and men in the industry, yet so far the group's efforts mostly involve social mixers and its robust mentorship program. Moreover, its membership is largely located in North America, making the "International" aspect more aspirational than descriptive (Sheri Graner Ray 2012, pers.comm., May). While these efforts by the IGDA, its special interest groups, and spin-offs are admirable, the organization stops short of organizing campaigns that might encourage real diversity in the industry or establish genuine negotiating leverage on behalf of workers.

The unionization question therefore continues to haunt the games industry. Marie-Josée Legault and Johanna Weststar discuss strategies game developers use to fight back against poor labor conditions (quitting, sabotage, speaking with management, lawsuits), yet none of these offer long-lasting solutions by comparison to collective action and full-scale unionization. Unfortunately, the majority of gameworkers would not support a traditional shop-by-shop form of union organizing (IGDA DSS 2014). However, 55 percent of gameworkers have indicated they would support an industry-wide union along the lines of the Writers Guild of America (IGDA DSS 2014). Nonetheless, the particulars of how this guild would operate, how it would organize, and who it would represent have not been articulated. In addition to a general anti-union ethos, the high mobility of gameworkers deters traditional site-specific organizing techniques.

Owing to these challenges, Legault and Weststar suggest that a global, "industry-wide, multi-employer certification and negotiation process" could address many of the above obstacles to unionization (Legault and Weststart 2013). This would eliminate the need to organize studio-by-studio and instead allow gameworkers to join a single union that represents the entire global industry and sets basic minimum agreements for salaries, hours,

credits, and benefits. Yet if the obstacles to organizing a single studio seem intimidating, the obstacles to organizing a global campaign seem even more challenging. Such an organization would have to overcome competition between countries, and a diverse patchwork of national laws, regulations, and policies. Moreover, workers in different parts of the world have different perspectives on unions. For instance, people in former Soviet bloc of nations have a more fraught relationship with unions since for the better part of the 20th century they were state-run entities (Szczepanik and Vonderau 2013). Many Polish and Czech indie developers I spoke with reflected this sentiment when they indicated their preference for keeping the government out of the games industry. Moreover, a standard concern for workers everywhere is that those locations that lead the way in labor organizing could end up driving game development to other parts of the world with lax labor laws, tax incentives, and cheaper wage rates.

In regards to indie game studios and their involvement with labor abuses, some scholars have called for an increased emphasis on game developer cooperatives rather than auteur-focused or studio-focused projects. As Paolo Ruffino (2013) describes it, rather than the solo auteur model currently articulated in indie discourses and practices, independence could be defined through cooperative and collaborative community game design. Although this idea has theoretical merit, and as discussed earlier exists primordially in some early access contexts, this does nothing to alleviate the pressures and demands of producing games in a capitalist system. While the proposal remains encouraging for a number of discursive and material reasons, collective-based game development would either succumb to the same troubles as auteur-based studios or necessarily have to position itself as non-commercial, which then leaves all of the game developers involved in need of alternative revenue sources.

What is certain is that, despite making possible the development of more games than ever, the current trend in commercial indie development of reproducing the same neoliberal logics that drive the mainstream industry has problematically so far elided concentrated and significant critique from scholars and critics. Emerging funding models like crowdfunding and early access have innovated upon and disrupted previously one-sided video game financing agreements, yet the end result suggests that even this space has succumbed to the logic of franchises and sequels. At its worst, early access establishes a relationship between indie studios and players that conjures the ghost of plabor exploitation, however beneficial the arrangement may seem to both parties. Perhaps most significant, though, is that the pattern of rationalizing the same grueling work routines of the major publishers, crunch included, through narratives of creative passion and self-determination, has not resulted in positive change for indie game workers, nor has it effectively challenged the industry as a whole to collectively recognize and address the human toll and consequences of practices that now extend from the largest corporate studios down to the smallest one-man shops.

IV. The Indie Label
Publishing and Distributing Indie Games in a Digital Era

One key development over the last ten years that has enabled the latest generation of indie developers has been the growth of digital distribution across the PC, home console, and mobile landscape. Apple sold almost 7 million first-generation iPhones in its first year on the market in 2007, and in 2008 the company launched the App Store, a digital distribution platform that, in a monumental move, encouraged downloading digital content as an everyday activity through a centralized digital store. Although Apple previously allowed users to download third party applications to their phones from its Safari web browser, the App Store created a centralized location where developers could submit software ranging from lifestyle applications to digital games. Owing to the exponential popularity of the iPhone and related Apple devices, the App Store quickly became a destination spot for start-up software developers to reach millions of Apple users hungry for content and services. Chief among these startup developers were indie game creators. In fact, so many game developers and players flocked to the new mobile ecosystem that digital games now make up the largest percentage of App Store applications at roughly 23 percent, or just over 515,000 active apps, more than double the next largest category ("App Store Metrics" 2016). Other phone manufacturers followed Apple's example and built their own centralized digital

storefronts also dominated by digital games. With over 1.75 billion people across the world now using smartphones, and hundreds of millions more gaming on PCs and home consoles, indie game developers potentially have access to the largest gaming market in history.

Unfortunately, despite a global audience of billions, the mobile gaming ecosystem revealed a number of challenges for indie game creators. Chief among these challenges is the overcrowding of digital storefronts, known as the problem of discoverability, and the decline in perceived value of digital games. An industry buzzword, discoverability refers to the problem of getting a product noticed in a digital store that contains potentially hundreds of thousands of other products. Important for this chapter, the same problems that plague the mobile ecosystem persist on PC online distribution services and the growing digital market for home consoles. In response to these market conditions, commercial indie developers have had to reconsider their relationship to each potential game platform, alter the way they market and release content in a saturated marketplace, continually experiment with pricing models they use to generate revenue, and revisit the value of publishers in the production, distribution, and marketing of their otherwise independent content.

Accordingly, having examined alternative funding structures and working conditions at commercial indie development studios in chapter three, here I turn my attention to the distribution and promotional portion of the indie games business. Together, chapters three and four form the nucleus of an argument that asserts indie game developers have contributed to profound transformations in the overall video game industry, repositioning indie game development from a niche, exploitable, and subservient part of the business to a central, constitutive pillar in the global industry that actively shapes the structures and strategies of the industry's largest companies. I contend that the emergence of ubiquitous indie game

development and the ascendency of digital distribution have had a profound co-constitutive impact on each other. More pointedly, I argue that rather than indie developers relying on digital distribution platforms for their success, the platforms actually benefit from the breadth of indie development in order to grow and diversify their content libraries. Indie developers have a co-dependent relationship with platform holders, one where each party depends on the other to grow and prosper and where distribution portals continually evaluate their policies in order to please the growing indie development community and its consuming player base.

Furthermore, the emergence and commercial success of indie development has changed the relationship between indie developers and three tiers of publishers, including major publishers and platform holders, mid-tier publishers, and a new generation of indie-focused publishers. In particular, indie-focused publishers are built from-the-ground-up with indie sensibilities, many of them expanding from indie development studios to publishing services, challenging the traditional practices of larger, more established publishers. Collectively, this chapter builds on the assertion that rather than ancillary products occupying the margins of the games industry, commercial indie game development actually provides one of the main pillars that support the continued health and growth of the gaming industry. As a central industry pillar, indie developers challenge traditional business practices, provide a wealth of alternative and valuable content, and illuminate emerging obstacles that the industry as a whole must confront as it enters a digital-only marketplace.

Distribution Revolution

In their book of interviews dedicated to the subject of digital distribution, Michael Curtin, Jennifer Holt, and Kevin Sanson (2014) argue that the digital distribution of screen media has

profoundly challenged the traditional film and TV businesses, leading to changes in work routines, business models, marketing campaigns, and audience behaviors. Placing so-called "digital disruption" within historical context, as the most recent example in a long struggle between producers and audiences for power over how film and TV content is produced, disseminated and used, the authors write, "…what we are now witnessing is the latest iteration of an ongoing tension between the diverse desires of audiences for cheap and easy access and the twentieth-century business models that sought to manage media flows and audience consumption" (6-7). These historical moments of contention between audiences, content creators, and distributors can be seen in the introduction of television, the emergence of cable and satellite delivery technologies, the emergence of home video with the VCR and DVD players, digital video recorders (DVRs), and most recently in full scale digital distribution of film and TV content over the Internet on services like Netflix, Hulu, and Amazon Instant Video. Other scholarship explores similar arguments surrounding the agency of audiences vis-à-vis the mechanics of control instituted by media corporations, some of which concern Youtube (Andrejevic 2009), Netflix (Tryon 2013), and illegal torrent sites (Newman 2012).

However, even as film and television content continues to gain leverage in the digital space, transforming those industries in subtle and profound ways, they are still far behind digital games in terms of units sold and revenue generated in the digital space. In fact, according to findings from a DFC Intelligence analyst in 2014, digital downloads now account for 92 percent of all PC game sales (Sacco 2014). In other words, PC game players buy almost all of their games digitally. This leaves PC gaming just behind mobile platforms, like smartphones and tablets, which have been 100 percent digital since their inception. This

dramatic digital download adoption rate is largely due to the PC market long having grown used to digital distribution through piracy, web-based games, and, arguably, the introduction of the digital distribution game service Steam in 2004, which helped normalize the purchase of digital downloads for the most dedicated and influential PC game players.

Nonetheless, just as the majority of film and TV content is still consumed through traditional distribution channels, such as theatrical attendance, network TV and DVD viewing, or cable subscriptions, the majority of home console video game sales still occur in brick-and-mortar stores. In a western context, this means stores like Walmart, Best Buy, and GameStop still matter a great deal to the home console industry. However, while the console market is less burdened by piracy thanks to proprietary hardware and operating systems, console users are still gradually adopting digital downloads as their main content delivery system. In fact, Microsoft intended its Xbox One platform, launched in 2013, to be a fully digital console. While Microsoft would have sold Xbox One discs at stores, they would have been little more than content delivery containers that, after installation, would only serve to authenticate the game's legitimate purchase. More specifically, players would have been forced to download the games from the discs onto their consoles and an aggressive digital rights management (DRM) system would have been implemented, tying particular discs to particular consoles and requiring users to authenticate their games every 24 hours via an Internet connection. After intense user pushback, however, Microsoft ultimately recanted on its digital vision for the Xbox One, dropping many of its planned policies and instead allowing users to dictate their gradual migration over to digital-only game sales, something statistics prove they are doing. Data suggests more than 25 percent of all software sales on Xbox One and PS4 occur digitally (Johnson 2014). Moreover, long considered to be far

behind its competition in terms of network infrastructure and digital distribution, even Nintendo now claims its digital sales are doubling almost every year (Scullion 2013).

Given that 92 percent of PC game sales now occur through digital distribution, it is no surprise that a plethora of game distribution portals have emerged to service the PC gaming community. Chief among these is Valve's Steam platform, launched on the strength of the landmark first-person shooter *Half-Life 2*, a sequel to one of the most celebrated games of the 1990s. Steam has grown steadily since its debut and now claims over 125 million registered users that can purchase games from a library of over 7,500 titles. Notably, available titles on the service doubled between 2014 and 2016. Steam's user base and games library is set to continue its exponential growth over the next decade.

Across all platforms, digital distribution has allowed the surge of indie game developers to reach millions of potential players. Yet contrary to some assumptions, indies are not the only stakeholders to benefit in this arrangement; the platforms themselves reap considerable rewards from the deluge of indie developed titles flooding their services, titles which supply these services with a continual stream of content to bolster and diversify their offerings. While traditional high-budget, triple-A games were slow to migrate to digital distribution platforms, only making day-and-date equivalence with their physical counterparts circa 2013, indie games have been utilizing digital distribution platforms since their earliest days, including informal distribution via early Internet bulletin board systems (BBS) and Internet Relay Chat (IRC). Indeed, since indie game developers suffered during the 1990s and early 2000s when physical retail copies of games were necessary for any kind of bulk sales and financial success, indie developers were the first to enthusiastically adopt digital distribution game portals as they became available around the turn of the century.

With the growth of digital distribution, indie developers could approach the distribution services themselves, circumventing the traditional game publisher and their unfair contracts altogether. Owing to their enthusiasm, indie developers arguably encouraged the development and expansion of early digital distribution game portals. Moreover, the explosion of indie games since 2008 is responsible for the majority of content on popular platforms like Steam, rounding out digital stores that would otherwise appear anemic by comparison.

The interplay between indie developers and digital distribution platform holders illustrates the constant tension in entertainment and technology industries between open systems that encourage innovation and competition and closed systems that privilege dominant, centralized firms that seek to control and contain the advance of technologies and the dispersal of content. Indeed, as the below examples indicate, industry leaders like Valve have an interest not only in expanding their content libraries and catering to indie developers and players, but also in maintaining control of their vibrant and growing distribution service. Pressure to expand content libraries, reduce infrastructural strain, and please players always on the lookout for fresh games have led Valve to gradually open up access to its popular distribution service, even as the company continually negotiates how open it wants to make its platform.

As the premier digital distribution platform for video games, Steam has become the de facto destination for most indie titles available for PC, Mac, and Linux. Yet until 2012, indie developers had a difficult time getting their game on Steam since all hopeful entries had to be considered by Valve on a case-by-case basis that could take months. This application process resulted in Valve only accepting a select group of indie games on the burgeoning

service, many of which were high profile, such as *Super Meat Boy* (Team Meat 2010) or *Limbo* (Playdead 2010). However, owing to a series of compound factors, including the rapid growth of Steam's user base, a desire in the indie community to be on Steam, player demand for more content, and its own goals to generate more revenue, Valve altered Steam's application process to be more indie-friendly in 2011.

In an effort to appease the growing number of indie developers and fans who found Steam's application process arduous, slow, and often unpredictable, Valve took proactive steps to get the Steam community involved in the selection process. This initiative began in October 2011 with the introduction of Steam Workshop, a system that allowed customers to organize and rate content on the platform. The initiative then expanded with the launch of Steam Greenlight in August 2012 [Figure 4.1]. Greenlight replaced Valve's closed evaluation process for games and, instead, allowed developers to post information about their in-development games for the community to vote on. The games with the most community support get accepted for distribution through Steam. Since the transition to Greenlight, Steam's library has grown significantly, having added over 33 percent new content in the first 9 months of 2014.

The decision to implement Greenlight illustrates the co-constitutive nature of indie game developers and leading digital platforms like Steam. Although Valve obviously profits from a larger game library with the potential to generate more sales, the decision to switch to the Greenlight process benefited indie developers and players in several ways. Greenlight pleased developers who felt the previous submission system was opaque or unfair. Developers also welcomed Greenlight since, if the community chose their game for distribution through Steam, it guaranteed a base of invested players who were more likely to

keep track of the game and buy it upon release. This proved additionally fruitful if the developer chose to release their game via early access (see chapter three), since they could count on community support and early revenue from the unfinished game's sale during the development process. Finally, Greenlight also gave voice to the community by empowering customers and encouraging investment in the Steam platform. Unfortunately, despite the benefits for developers and players, a number of problems emerged in the wake of Greenlight's introduction.

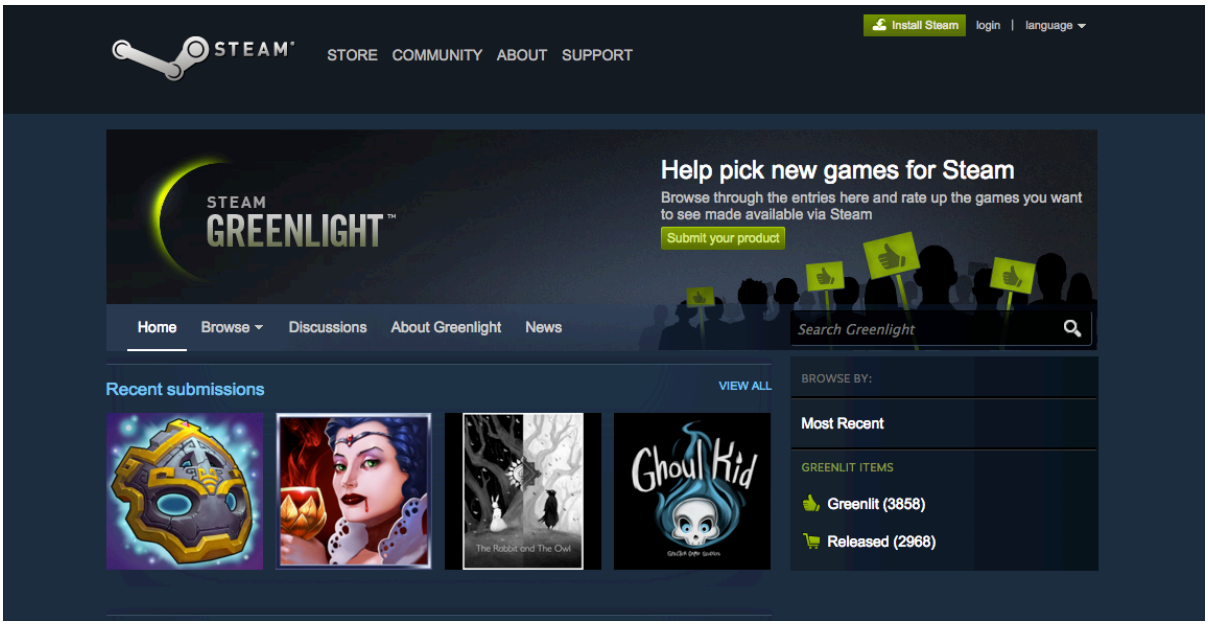

Figure 4.1: Steam Greenlight Home Page

Indie developers largely preferred Greenlight to the former, closed application process, but they did have some complaints. A controversial submission fee, community genre bias, and the sudden influx of games launching on the service quickly soured the initial euphoria many developers experienced. First, in order to prevent fake games, joke games, and other spam from disrupting the voting process, Valve instituted a one-time fee of $100 for all developers submitting to Greenlight. To mitigate criticism or charges of profiteering, Valve announced all entry fees would be donated to charity. While $100 does not seem like

much to a developer with an ample budget, it was a significant investment for many small developers, who had no guarantee their game would be chosen by the community. As a result, indie developers were divided on the fee issue depending upon their financial situation (Davies 2012). However, despite the submission fee, many joke games still populated the Greenlight voting environment, sometimes garnering ironic support from the community and angering developers who resented that pranksters overshadowed their own genuine efforts.

Figure 4.2: *Rock Simulator 2014*

An example of a joke game embraced by the community is *Rock Simulator 2014* (Strange Panther Games 2014), a game that allows users to place a rock in one of three environments and features little else in the way of content or interactivity [Figure 4.2]. *Rock Simulator 2014* arguably works to subvert the growing genre of "simulator" games by taking their premise to the logical extreme. On the one hand, it is easy to make an argument that rather than "quality" titles naturally rising above the chaff, Steam Greenlight gives ironic users too much power to subvert the system, rewarding projects that were made with little effort as jokes and punishing projects that developers have worked on for long periods of

time. On the other hand, as a democratic process, Steam Greenlight arguably offers insight into the changing tastes of computer game players, giving them an opportunity to dictate success irrespective of publisher, mass-market preferences, or marketing influences. Indie developers soon realized that it was not always the quality of their game that mattered so much as its genre and the degree to which it was open-ended and community-driven. Despite these issues, indie developers flooded the Greenlight showcase area with thousands of games. Due to the increase in titles, some developers worry that the service will soon face the same overcrowded marketplace that the mobile gaming ecosystem suffers from. While Steam has become the de facto distribution portal for aspiring indie developers, it is not necessarily the savior for all indie games.

Over the last 10 years, a plethora of online game distribution services have emerged to rival Steam, including GOG, Green Man Games, IndieGameStand, Gamer Gate, Games Republic, and the Humble Store. However, GOG (formerly Good Old Games) is one of the few services to maintain its independence from Steam. Whereas many other online digital game shops provide Steam codes with games purchased, GOG does not. Despite this, GOG has become the second largest PC online game portal. While GOG started as a distribution site for classic PC games adapted to work on contemporary operating systems – hence its previous name of Good Old Games – it has evolved to include a limited selection of brand new triple-A titles and a growing library of indie games. According to GOG Content Specialist and Senior Marketing Team Member Wojchiech Mroczek, "GOG is now home to many hundreds of indie games . . . And we're trying to curate the library to make sure that the offer is nothing like the app store or simply Steam. Just select games" (2014, pers.comm., Sept. 19). Indeed, like Steam, GOG's recent library growth has largely been due to the

increasing number of indie games it hosts. However, in an effort to avoid the pitfalls of Steam, GOG is trying to curate its indie library more carefully, crafting a content library they characterize as consisting of higher quality titles that appeal to GOG's more discerning core audience. Rather than opening the floodgates to the indie community, GOG's strategy reflects the company's awareness of its core audience and the problems associated with unmanageably large content libraries.

The enormous breadth of content on digital platforms, particularly mobile app stores, has lead to aggressive competition for player attention. As more and more indie games populate digital storefronts, the same problems of overcrowding that plagues the mobile gaming ecosystem have migrated to the PC platform. Indeed, as audiences transition to digital-only purchases, the central concern for all media content companies is the problem of discoverability, the ability to connect customers with a digital store's entire library and avoid burying content that might interest them. With over 500,000 games available in the App Store, the mobile ecosystem best exemplifies the discoverability dilemma. Owing to the sheer amount of games available on mobile devices, many indie developers refer to success in the mobile market as a lottery. If a developer's game is not featured as a top seller or some other promotional page in the App Store, chances are few customers will ever find it, let alone purchase and download the game. In the mobile space, the competition to stay relevant and maintain a position on the top downloaded chart has resulted in increasingly lower price points on games. The eventual nadir to the decline in prices was the free-to-play model, which allows users to download the basic game for free and generates revenue through optional in-game purchases, or micro-transactions, that enhance the game experience in some form or another.

Steam has contributed to the larger phenomenon of content devaluation with its the frequent flash sales and coupons, as well as its partnership with Humble Bundle, a pay-what-you-want bundling store that initially heavily promoted indie games. Cash-strapped players adore Steam sales, and a large part of the service's success is due to its frequent game discounts. However, some indie developers fear that the value of digital games has lowered to a point that is unsustainable for small game makers.

For this reason, indie developers like Puppy Games co-founder Caspian Prince have criticized Steam and worried over a "mass extinction" or "indieocaplyse" of indie developers unable to generate enough revenue to survive as game creators. Within this dystopian frame that predicts a veritable decline in the entire market for digital games, Prince writes:

> "They're meant to be $10, but nobody buys them at $10. They buy them when a 90% discount coupon lands in their Steam inventory. We survive only by the grace of 90% coupon drops, which are of course entirely under Valve's control. It doesn't matter how much marketing we do now, because Valve control our drip feed" (Prince 2014).

Prince's comments illuminate the frustration developers feel over the falling average price for digital games on the PC. Although major publishers can weather these lower prices through bulk sales of their big-budget product, indie developers often depend on each and every sale to stay in business. Moreover, Prince's comments reveal the ever-present conflict between content creators, retailers, and customers in the digital space. Steam benefits from its frequent sales since it drives up purchases, netting the service 30 percent of every transaction, and increases registered customers; however, while developers sell more games during Steam sales, they also lose a lot of potential income in the process. When speaking of purchasing games via Steam, many users will admit they actually wait to buy games until sales periods, usually held three to four times a year, depriving developers of steady sales throughout the

year or crucial sales during a game's first week on the market. Over the last several years, Steam sales have effectively normalized price points on digital PC games that are sometimes 75 percent off their suggested price points.

As Steam grows its content library and home consoles increasingly adopt a digital sell thru strategy, the problem of discoverability now firmly extends past the mobile market. Visibility is of upmost concern for indie developers since their games are largely only available digitally. Developer John Warner released his indie game *The Fall* (Over the Moon 2014) on Steam and Nintendo's Wii U and recognizes "visibility" as his biggest challenge as an indie game developer. While interviewing him at IndieCade 2014, he explained to me, "There's a huge run on the market right now, so there're a million indies trying to grab the same piece of the pie . . . Luckily, we have enough traction where we're surviving and we're going to be able to keep making games, but there are a lot of guys just like me who don't. So it's a scary place" (2014, pers.comm., Oct. 10). The "traction" Warner refers to here includes prominent coverage in the gaming press and a promotional partnership with Nintendo. Games that do not sell well upon release and secure a dedicated community and a place in the top selling games list on their respective platform quickly dissipate, their already lackluster sales slowing to a trickle. As Warner testifies, the rush to take advantage of more accessible digital storefronts has created a new and formidable problem for indie developers. Without partnerships with platform holders, distribution portals, or publishers, even the best indie games face the possibility of vanishing in the static created by an abundance of content.

A few services have tried to mitigate visibility problems through a number of initiatives. Steam has implemented a user-driven tagging system and curated games lists to help customers find content that fits their interest and tastes. Tagging is meant to allow

customers to search for specific traits and discover games that would interest them. Unfortunately, some in the community have abused their tagging privileges and used the ability to criticize and troll games they do not like, muddying the usefulness of the feature. Furthermore, while curated lists allow anybody to recommend games, only the most popular gaming personalities or websites garner any attention, and the lists act more like extensions of the their usual editorial content rather than novel solutions to the problem of visibility on the platform. Contrarily, as noted, GOG tries to avoid overcrowding its own marketplace by effectively curating its content through a rigorous evaluation process before games are accepted on the service. This strategy provides a highly manicured library of content for GOG customers, but also resembles Steam's original closed application process, which means fewer indies have an opportunity to get on the service. Thus, either indies enjoy greater access to a popular distribution platform and have to contend with thousands (or hundreds of thousands) of competitors or they face formidable bureaucratic hoops to get on a service with the promise, if successful, of getting access to a marketplace that will offer them the attention necessary to drive sales. Amidst the growing problem of visibility for indie titles in the digital distribution landscape, the Humble Bundle emerged in 2010 to shine a spotlight on notable indie games and introduce a new payment model to the industry.

Inspired by the frequent and successful packaged-game sales on Steam, the Humble Bundle Store packages indie games together and allows customers to pay what they want to purchase them, starting at one dollar, with all proceeds split between developers, charity, and the Humble Store itself. Relying on the viral tendency of such sales to spread across social networks, the first Humble Bundle in 2010 brought in nearly $1.3 million. In the wake of Humble Bundle's success, other indie bundles have sprouted up, including Indie

Royale, Indie Love Bundle, and the Corona Bundle. In November 2013 the Humble Bundle opened a dedicated Humble Bundle storefront to offer its bundles and successful pricing model on a daily, weekly, and monthly basis. As of August 2013, even before the store opened, Humble Bundle had already generated over $50 million in revenues (Walker 2013).

Yet while Humble Bundle has provided dozens of indie titles with a welcome spotlight, the store does little to solve the overarching problems indie developers face in a digital distribution ecosystem. In a critical examination of the "bundle" phenomenon, Ian Bogost (2012) suggests bundles act as inflated promotional campaigns that pray on the collection-oriented mentality of computer game players to temporarily boost sales and revenue. Bogost reminds readers that the companies operating the Humble Bundle and other bundle variants might very well be invested in the promotion of independent video games, but they also are businesses interested in maximizing profits. Arguably, they have been very successful at that, and humble bundles now act as a desirable late release window for indie game distribution, usually after a game's initial first year on sale. However, despite strong sales and revenue, bundles do not necessarily solve the most pressing issues for indie game developers. Any indie developer can submit its game to a bundling service, but it is not clear what role quality and nepotism play in the bundle selection process. Furthermore, in subsequent years, the Humble Bundle has also partnered with major publishers, like Warner Brothers and Sega, to feature triple-A game packages. This shift to larger titles betrays Humble Bundle's supposed foundation within an ethos of indie promotion and calls into question its commitment to the indie community.

By starting with popular indie games to test the pay-what-you-want, bundling model, Humble Bundle was able to experiment with pricing models with relatively little risk. Based

on its foundations, Humble Bundle represents a perfect example of a distribution service that literally built itself up on the backs of indie games. Yet while Bogost is correct in his criticisms of Humble Bundle ultimately being a corporate, for-profit enterprise, the service has nonetheless been advantageous for its indie developer partners. Developers have generated considerable revenue, sold millions of copies of their games (albeit at extremely discounted prices), and garnered fans who may potentially purchase future titles. Nonetheless, like many aspects of the indie games community, there seems to be a certain degree of nepotism at work in what games get selected, oftentimes reflecting the same content that appears in high-profile festivals and the gaming press. Accordingly, Humble Bundle neglects thousands of other indie titles that are not lucky enough to get featured on the service.

Within a PC digital distribution landscape celebrated for its accessibility but limited by its ability to promote every piece of available content, marketing becomes integral to a successful game. In this context, the former nemesis of the indie developer, the game publisher, has found a way to make itself necessary yet again. Indeed, platform holders have joined publishers of all sizes in efforts to court and partner with promising indie developers. Yet having learned the lessons of the past, both platform holders and publishers have altered their strategies when dealing with indie developers, most notably witnessed in a new generation of indie-focused publishers that try to support the efforts of small developers without exploiting them.

A Necessary Evil: The Reinvention of the Publishing Partner

As outlined in chapters one and three, before digital distribution, indie developers required publishing partners in order to navigate supply chains, produce physical copies of games, and

ship large quantities of product to brick-and-mortar retailers like Walmart for resale. These partnerships were based on contracts that heavily favored the publisher, leaving them with the majority of profits and in many cases, the game's intellectual property rights.

Within this system, indie developers could rarely ever achieve financial independence. They were instead forced to pitch project after project to publishers in order to maintain a flow of operating funds. Alternatively, indie studios could allow a publisher to acquire them if they produced successful games, but this decision often led to unexpected layoffs and restructurings once under corporate control. Outside of these options, eventual bankruptcy was all but guaranteed. Thus, the risks of independent development were high and the rewards few and precarious. Digital distribution relieved indie developers from the necessary burden of publishing partners, and many did not hesitate to cut ties with their former overlords altogether. It is important here to distinguish game publishers from distributors. In exchange for a percentage of every sale, distributors like Apple, Steam, and Sony provide platforms on which indie developers, with or without publishers, can distribute their games. Publishers, on the other hand, provide financial assistance for production, marketing, and direct-to-consumer outreach, often acting as intermediaries between developers and distributors to secure the most ideal levels of exposure and promotion. Concurrent with the adoption of digital distribution by indies, publishers have reduced the number of projects in development at any given time, relying more on internal studios rather than external ones, and focusing on big-budgeted franchise games. However, in the wake of these dramatic shifts, indies are rediscovering the benefits of partnering with a publisher, albeit under a different set of circumstances and power relations. Beginning early with festival and convention exhibits, indie developers are connecting with platform holders and

mid-sized or small publishers created specifically to service indie developers within a digital distribution environment.

A successful set of appearances on the video game festival and convention circuit can help an indie game garner an early following or, if the developer is amenable, a lucrative deal with a publisher or platform holder. Every major global games event, including Electronic Entertainment Expo (E3), Game Developers Conference (GDC), Penny Arcade Expo (PAX), Gamescom, and Tokyo Games Show, features areas dedicated to independent game development. Furthermore, indie-focused events like IndieCade, BitSummit in Japan, EGX in Birmingham, and Boston Festival of Indie Games offer spaces where indie games can shine, free of the bombast created by corporate publishers at larger tradeshows. Consistent appearances across the global festival and convention circuit are integral to marketing indie games today.

With a cultural ethos framed around sharing and cultivating fresh, innovative, and artistic ideas and talent, IndieCade has grown to be a hot spot for indie game developers looking to connect with other struggling developers and promote their projects as they grow. Hosted in Culver City, California, with two other festivals now located in Paris and New York, IndieCade showcases over 120 games and draws over 5,000 attendees, including many from the local community looking to get their hands on alternative and experimental games they might not ordinarily see (Goldberg 2013). Started in 2006 by former digital media producer Stephanie Barish and originally held in Bellevue, Washington, IndieCade moved to Culver City in 2009 so it could be closer to the sizable gaming industry in Los Angeles.

Similarly, now based in San Francisco, the other mecca of game development in the United States, the Independent Games Festival (IGF) has been celebrating independent game

development since 1998. With the strength of the Game Developers Conference behind it, the IGF has resulted in many distribution deals for independent developers. Past finalists and winners of IGF that have gone on to become indie hits include *Braid*, *World of Goo*, *Super Meat Boy*, and *Minecraft*. Among others similar events, IndieCade and IGF can be instrumental to landing publishing deals if an indie developer wants to get his or her game out to the widest audience possible and secure vital marketing funds. Festivals offer exposure, free promotion, accolades, and the opportunity to network (Smith 2011) with other developers facing the same economic and structural hurdles. While not a distribution method exactly, festivals and public exhibitions are an important step toward getting an indie game in the hands (and minds) of publishers, platform holders, and the public.

For the most part, the largest publishers do not bother with indie games. Rather than continue their historic strategy of acquiring talented studios in order to grow their business, major publishers like EA and Activision have begun focusing on their now robust internal studios to produce yearly iterations of their largest franchises. In particular, after more than two decades of buyouts, EA has shifted to trying to manage its already sizable development empire, including blockbuster studios like BioWare and DICE (Sinclair 2014a). Of course, these publishers still outsource a lot of development labor to indie companies all over the world, exploiting the need these companies have for revenue flows while exacting the most work for the least amount of pay. In this way, the same traditional exploitative and predatory methods persist. Emerging publishers with global reach, like Koch-owned Deep Silver, continue some of these questionable practices. Deep Silver has made a name for itself in the last decade by publishing games developed primarily in Europe and Eastern Europe, taking advantage of either tax incentives or cheaper labor, while managing and acquiring video

game IPs they feel can be exploited through franchises, like the *Metro*, *Homefront*, and *Dead Island* series. Although Deep Silver has yet to acquire and dismantle an indie developer, the company has been known to demand changes to game design and push developers to meet deadlines that encourage workplace abuses, a situation which effectively ended their relationship with Poland-based Techland (Te 2014). Because of their focus on franchise, blockbuster titles, the largest publishers have little interest in indie game developers producing original projects; however, platform holders desiring to secure unique software lineups for their respective consoles have been far more aggressive in reaching out to indie developers.

Platform holders including Sony, Microsoft, and Nintendo now compete for indie attention and loyalty. This is particularly important in an era where triple-A console exclusives are increasingly rare, outside of first party titles, and competing consoles ultimately offer very similar features and content. Accordingly, each platform holder has a division dedicated to supporting indie efforts and securing exclusive indie content for their platform. Microsoft and Sony feature segments of their press conferences at events like E3 dedicated to indie games, and Nintendo has started to highlight indie games as part of its regular Nintendo Direct videos. Furthermore, Sony and Nintendo each sponsor booths at IndieCade. All three companies have allocated significant resources and budgets toward the explicit purpose of garnering indie developer support.

For the 7th generation of consoles, many indies considered Microsoft's Xbox 360 to be the most amenable to indie developers. The Xbox Live Arcade (XBLA) marketplace allowed indie games like *Braid* and *Super Meat Boy* to reach a mass audience; however, there were limited spots for indie games to be featured on XBLA, indies required publishing

partners or Microsoft's own support to do so, and Microsoft charged significant fees, as much as $10,000, to certify any game updates or patches that were necessary post-launch. Notably, this latter fee amount prevented indie developer Polytron from fixing a few outstanding bugs in their XBLA release of *Fez*, angering fans and spotlighting Microsoft's unpopular policy. Recognizing the bureaucratic hurdles inherit in its premium XBLA service, Microsoft devised another solution for indie developers interested in developing for the Xbox 360 platform.

In order to attract the burgeoning indie talent at the time, Microsoft also launched an "Xbox Live Indie Games" (XLIG) portal on the Xbox 360 in 2008. XLIG was bolstered by the affordable XNA development kit that allowed small, budget-strapped developers to develop for the platform. The only barrier to getting an indie game accepted on XLIG was community peer review. The result of this open-door policy was that over 3,300 indie games appeared on the service. However, like the mobile market, the lack of quality control resulted in dozens of clone games and cash-grabs, including a legion of *Minecraft* clones that tried to capitalize on the success of the popular title. Many developers who contributed games to XLIG complained that their efforts were buried within the Xbox Live interface and poorly promoted by Microsoft, resulting in lackluster sales. Though a few developers did jumpstart their companies with hits on the service, most developers saw very little return for their efforts, and Microsoft chose not to continue the service on its 8th generation Xbox One console.

Instead, Microsoft revamped their commitment to indie developers through its Independent Developers at Xbox (ID@Xbox) program. Recognizing the value of indie developers and the mistakes it made with the Xbox 360, Microsoft Director for ID@Xbox

Chris Charla frames the program as the result of collaboration with the indie community (Grant 2013). Indie developers apply to ID@Xbox and, if selected by Microsoft, they are sent two free development kits and become registered Xbox One developers for free. Through its ID@Xbox program, Microsoft also allows Xbox One consoles to act as development kits, eliminating the need for specialized hardware. Additionally, for indie developers who wrinkled their noses at the costly update fees associated with the Xbox 360, Microsoft will wave all fees for registered developers. Despite these concessions, though, Microsoft has maintained some control as a gatekeeper for its Xbox One platform. While Microsoft initially pitched ID@Xbox as a way for any indie developer interested in developing for Xbox to self-publish on the platform, Microsoft selected its first round of indie developers based on whether or not they had experience shipping a console game in the past. This decision marginalized indie developers working on their first projects or those who may have cut their teeth on mobile or PC platforms. Furthermore, as owner of the digital retail space, Microsoft retains the right to charge whatever they want for an indie game selling on the Xbox One, even if it is less than the developer's recommended price. This is the same problem many developers have with services like Steam or Amazon's App Store, which have been known to apply sale prices to developers' games without permission. As a result, although initially promoting a strong indie-focused, collaborative distribution strategy for its Xbox One console, Microsoft has tainted its relationship with many indie developers, allowing its competitors to strengthen their ties to the indie community.

Sony is committed to promoting indie games as part of their overall marketing strategy for their PlayStation branded hardware, especially the PS4, launched in November 2013. The PS4 was specifically designed to mirror the architecture of competing PC and

mobile platforms so indie developers would have an easier time porting games to the system, allowing Sony to boast of plentiful and diverse content (Lee 2014). Sony Worldwide Studios America Software Product Development Head Scott Rohde frames Sony's strategy as a "two-way love affair" between Sony and indie studios (Sinclair 2014b). Rohde discusses this "love affair" not only by acknowledging the creative array of indie titles in development at any given time, but also by pointing towards shifts in leadership at Sony from corporate-minded decision-makers to more creative-minded ones (Sinclair 2014b). Rather than managers interested in the bottom-line, who made acquisition and partnering decisions based solely on financials in the past, the new breed of Sony personnel, like Adam Boyes, Nick Suttner, Brian Silver, Shu Yoshida, and Shahid Amad, have a passion not just for making money, but for helping creative, inspirational games come to market. Although Rohde's clearly uses the rhetoric of creativity versus corporatism to convince skeptics, there is some validity to his statements.

With fresh, indie-friendly management, Sony has implemented a number of strategies in order to position PlayStation as the home of indie developers. Started at GDC in 2009, the Sony Pub Fund offers select indie developers funding to finish their games in exchange for full or timed exclusivity to Sony PlayStation platforms. The Fund operates on a project-by-project basis, meaning the developer can choose to end its relationship with Sony after any given project. Accordingly, as discontent grew over Microsoft's indie policies for the Xbox 360, console indie developers became more enamored with Sony's offerings. Sony Computer Entertainment of Europe's head of strategic content Shahid Ahmad framed Sony's shift toward indie developers as a response to the "indie revolution" that had swept the industry. This was not a movement that was just beginning, he asserts, but one that had already taken

hold. Explaining Sony's internal policy changes, he says, "When the power structure shifts to the content creators, the old buildings might still be standing, but there's new people in there. [There are] new content creators, with new ways of doing things. That's what happened to PlayStation" (Batchelor 2013). Ahmad's comments are obviously meant to position Sony as a forward-thinking company that responds quickly to industry shifts while also inflating the egos of Sony's independent partners in an attempt to attract other indies. In an era where exclusive indie content is announced at press conferences in front of millions of news media and players, every major platform holder recognizes the importance of garnering indie support. The home consoles, threatened by a revitalized PC ecosystem and a saturation of mobile devices, now have to chase down indie developers and actively support their content through investment or promotional deals.

Sony and Microsoft regularly offer free indie game downloads as part of their online subscription services, PlayStation Plus and Xbox Live Gold, respectively. The need to supply free games to subscribers every month provides even more incentive for each company to maintain a robust release schedule for indie games on their respective platforms. While the indie zeitgeist may have started on Microsoft's Xbox 360 platform with titles like *Braid*, *Super Meat Boy*, and *Limbo*, all the major platform holders now compete for indie exclusives and partnerships.

Struggling platform holders, like Nintendo and the microconsole OUYA, have embraced indie development as a way of diversifying content for consoles that otherwise lack support from the major publishers in the industry. Nintendo's WiiWare service, introduced for the Wii in 2008, was by far the least popular of the three 7th generation console platforms for indie development, regardless of the fact that the Wii sold the most

amount of hardware. However, with the launch of its Wii U platform in 2013, Nintendo has implemented a quiet but determined strategy to win back the support of the indie community (Kleckner 2014). This is of particular importance to Nintendo given the lackluster sales of the Wii U have led to most major publishers, like EA and Activision, abandoning the platform shortly after launch, leaving a lingering question regarding where content would come from outside of Nintendo's own contributions. Recognizing the enormous pool of indie developers out there, Nintendo realized that it could draw on their prolific output to fill release gaps between its own in-house development efforts. In addition to securing Wii U compatibility for the Unity game engine, the engine most commonly used by indie developers, Nintendo offers self-publishing through its eShop, and promotional opportunities for its indie partners across industry events like GDC, IndieCade, and Penny Arcade Expo. The community's reaction to Nintendo's new policies was so great that, in early 2014, over 250 indie games were estimated to be in active development for the platform, an amount that, if released, would mean the majority of games on the Wii U would be indie games (Gifford 2014).

Another struggling platform, the ill-fated OUYA (pronounced oo-ya) microconsole stands out for its indie-inspired ethos and open-ended business model. Microconsole platforms, including Amazon's Fire TV and GameStick, have emerged to compete against the major consoles for the prolific efforts of indie developers. Microconsoles are modestly powered and affordable video game hardware designed specifically for smaller game experiences for use in the living room. OUYA started its life with an impressive Kickstarter campaign that raised over $8.5 million, based largely on the promise that the system would offer indie developers access to an Android-based console in the living room that would

eschew all the red tape previously associated with the proprietary Xbox, PlayStation, and Wii hardware. The thought was that indie developers could simultaneously develop a mobile and console Android game, reaching a wider audience while exhausting fewer resources. Of course, with the 8th generation of home consoles, these benefits are now largely available across every major platform, leaving OUYA with little to offer indie studios.

To encourage development for its platform, OUYA implemented a $1 million "Free the Games" funding promotion that matches outside funding between $50,000 and $250,000 raised by developers on Kickstarter campaigns. In exchange for this matched funding, developers had to agree to a window of timed exclusivity on the OUYA platform. OUYA also offers select developers with particularly engaging titles direct funding irrespective of their Kickstarter efforts. *Duck Game* (2014) developer Landon Podbielski praised OUYA for their financial support in an interview at IndieCade 2014:

> "OUYA really helped me out. I showed the game to Bob [Mills, developer liaison from OUYA], and Bob loved it and said, 'Do you need help to finish development? We can give you a bit of money, and you can finish.' So I told them, okay, I'll do a three-month OUYA exclusive. We can do the development schedule. I worked on the game for six months after that and released it this past March. They funded me until then, and then funded me after that to do some updates and some single-player. It's been amazing" (personal comm. Oct. 2014).

Of course, all of the registered developers in the world do not mean much if people are not buying the system or paying for games. OUYA has not released firm sales numbers for its microconsole, but reports of the company trying to find a buyer in the fall of 2014 suggest they are as dour as people expect. Moreover, while the average OUYA user has 30 games installed on the system, the majority of these are free playable demos. To illustrate the dire sales for even the most popular games, the system's best-selling game, *Towerfall*, only moved 7,000 units during its first year on sale. In comparison, the PC and PS4 versions of the

games, released many months after the OUYA version, account for over 80 percent of the game's total sales across all platforms. As a console designed for indie developers, the OUYA offered little outside of an open platform and a place to start for prospective developers. Games like *Towerfall* and *Duck Game* were darlings on the console, and helped get their developers wider attention. However, neither game became financially successful until their developers released them on dominant distribution platforms like PlayStation 4 and Steam.

The incorporation of indie games into the dominant industry dynamics does not stop merely with partnering with indie studios or publishing indie-developed games. Instead, there is also an element of major publishers adopting the same design sentiments, team sizes, and aesthetics of indie games. Perhaps the best example of this can be seen in various initiatives at publisher Ubisoft, which has allowed small teams to produce titles that, if not for their production within Ubisoft-owned teams, would be perfectly mistakable for indie games themselves. This collection of indie-inspired Ubisoft games includes *Valiant Hearts* (2014), *Child of Light* (2014), and *Grow Home* (2015), all of which were put together by small concentrated teams with discount budgets. *Valiant Hearts* is a two-dimensional, handcrafted narrative game based on the letters of actual World War One participants. *Child of Light* equally relies on unique, hand-drawn, two-dimensional graphics to sell a modest role-playing game. *Grow Home*, meanwhile, is an experiment in procedurally generated worlds, requiring less asset creation from the development team, and tasks players with growing and climbing large plants in an effort to return a wayward robot to his spaceship that hovers high in the sky over a planet on which he has crash landed.

In all three cases, the spectacle and lush, fully realized worlds of other Ubisoft franchises, like *Assassin's Creed* or *Far Cry*, are sacrificed in favor of an attention to storytelling, a handcrafted aesthetic, or experimentation in game design. The Ubisoft employees who develop these small games even speak of them as indie titles, despite having the infrastructural support of one of the world's largest publishers. Content director for *Valiant Hearts* Yoan Fanise, who has worked at Ubisoft for an uncommonly long 15 years, speaks to the internal tensions that arise when small teams try to adopt an indie ethos within the structure of a large publisher. Fanise notes:

> "This is the eternal dilemma for something that is both an art and a business at the same time . . . I think it's time for our industry to grow up and be less scared about original ideas, or trying new things. Every genre has a potential audience, and not everything has to always be about jumping or killing" (Plunkett 2015).

Again, Fanise's talking points are virtually identical to those of the average indie developer critiquing the dominant, publisher-driven industry for sticking to tried and true franchises and game structures. When available to purchase on the digital marketplace, these Ubisoft titles become indistinguishable from other indie titles that share similar aesthetic sensibilities and design goals. Although this is a textbook example of incorporation of indie aesthetics into publisher-controlled development projects, Nadv Lipkin (2013) argues that such "mainstream co-optation of indie games and the indie label is a victory for the game design principles they champion" (14). On the other hand, continues Lipkin, the adoption of an indie aesthetic and brand by major publishers dilutes the radical political potential of indie games. Yet this presupposes a time prior to corporate cooptation where indie games were somehow vehicles of counter-hegemonic purity, a position that's indefensible given the history of indie game

companies like Activision and Rockstar Games rising to become today's largest gaming corporations.

With the largest publishers more interested in reproducing indie aesthetics using in-house developers, mid-tier publishers have emerged over the last decade to take advantage of the growth of the indie sector. Mid-sized publishers, including Majesco's Midnight City and Devolver Digital, focus on publishing indie titles across an array of digital distribution platforms. Unlike traditional publishers who try to micro-manage projects and dictate design decisions, mid-tier and smaller publishers understand the proper support and distance to offer indies, who value their autonomy while still requiring financial and marketing assistance. VP of Business Development at Midnight City Doug Kennedy explains the process of convincing Majesco to establish its indie label:

> "We got into a conversation about what it would take to offer up the right type of support, the right type of funding, and the right type of vehicle so independent developers didn't feel managed by the traditional publisher but felt supported by the traditional publisher" (Sinclair 2014c).

Having had experience funding indie games with titles like Double Fine's *Psychonauts*, Majesco still needed to develop a particular identity for its indie-focused outfit and a specific strategy to deal with the emerging expectations of indie developers in a marketplace where they do not necessarily need publishers.

A set of best practices emerged for mid-tier and smaller publishers based on the mistakes of the past. For instance, most indie-focused publishers allow developers to maintain ownership of their intellectual property, something that rarely occurred in the past. Additionally, like similar digital-only publishers, Midnight City never forces developers into first-look contracts for future games. As Kennedy indicates:

> "If we're doing a good job, [developers] will want to stay. If we're doing a bad job, why have them handcuffed to us . . . because we have the rights to their next round of titles? So it really puts the onus on us to perform based on our relationship with the developers" (Sinclair 2014c).

Rather than an operating ethos based on control that treats indie developers like widgets in need of micro-managing, mid-sized publishers manage their relations with developers based on mutual respect for the particular talents each possesses, game design and development on the one hand, and public relations, marketing, and business on the other.

Devolver Digital epitomizes the benefits and affordances of partnering with a smaller digital publisher. Formed in 2011, Devolver positions itself as a sort of "punk rock" indie label that favors small, offbeat game experiences, such as *Hotline Miami* (Dennaton Games 2011)*, Luftrausers* (Vlambeer 2014), *Broforce* (Vlambeer 2015), and *Shadow Warrior* (Flying Wild Hog 2013). The antiestablishment bravado practiced by Devolver continues the traditions established with two former publishing ventures the founders, including Mike Wilson, attempted in the past, Gathering of Developers and Gamecock (Webster 2014). Those publishing companies each went out of business, largely due to the fact that the necessary shifts in the gaming industry had not yet taken place that have allowed the ascendency of indie games. Nonetheless, the offbeat aesthetic those earlier indie-focused publishers embodied continues through Devolver, which operates with six employees who work out of their respective houses in Austin and London. Owing to its anti-corporate origins, Devolver enacts many of the same cultural myths, influenced by neoliberal romanticism, that have fueled small game companies since the earliest days.

Its owners and operators perform a laidback, devil-may-care attitude and go out of their way to make the publisher-developer relationship tantamount to hanging out with friends. Through the ironic phrasing that children of the 1990s can relate to, Wilson explains,

"We're a publisher for people who don't need one" (Wilson 2014). Nowhere was this more apparent than at E3 2015 when Devolver rented out a parking lot across from the LA Convention Center where the rest of the expo was housed, and set up a barbecue with tents, picnic tables, and mobile homes to house their indie partners and their games. As I checked in for my meeting with several indie developers from Spain and France that had been flown in to LA by Devolver, I was offered something hot of the grill and a cold drink. In trying so hard to push back against corporate game publishers, Devolver ends up embracing the same underlying notions of play, passion, and what Alan Liu (2004) has identified as the post-industrial corporate sense of "cool" amongst knowledge workers.

Devolver acknowledges that contemporary industry structures allow indie developers to operate completely free of publishers, but also recognizes that, with the right approach, publishers can also position themselves to help indies in need of assistance. Despite the company's countercultural demeanor, it still offers a suite of services for its indie partners, depending on their needs. Some developers require full funding, testing, translation, distribution, and marketing services, while others might only want Devolver's PR expertise to get them booth space at a gaming festival. Not only does Devolver not interfere in game design matters, but every developer has to sign off on all marketing decisions, an opportunity larger developers owned and operated by major publishers rarely receive. With very little resources but expertise navigating emerging digital opportunities, Devolver illustrates how changes to the industry have opened up niche spaces for new kinds of publishers, even if those publishers ultimately operate under similar logics.

Alongside publishers like Devolver Digital, a collection of successful indie developers has also expanded their business strategies to include publishing duties for other

up-and-coming indie developers. Indie developers-turned-publishers promote themselves as publishing units that understand the concerns, experiences, and mentality of indie game studios. After releasing one or two significant financial hits, many indies see a business opportunity in helping other upstart developers enter the market. Some indie developers that have expanded into publishing include Polytron, Positech, 11 bit studios, the Behemoth, and the indie development collective Indie Fund managed by *Braid*'s Jonathon Blow and others. Rather than traditional publishers, indie publishers act more like highly selective incubators, choosing projects carefully and providing development support, operating funds, marketing advice, and media outreach. In this way, indie publishers reflect the same growth trajectory of technology startups in places like Silicon Valley. Successful small firms graduate from being part of another company's incubator to opening and operating their own.

Perhaps one of the most notable examples of successful indie developers banding together to financially support up-and-coming developers is Indie Fund, a funding organization run by a consortium of indie devs including *Braid*'s Jonathan Blow, *Journey* co-creator Kellee Santiago, and *World of Goo*'s Ron Carmel and Kyle Gabler. Indie Fund offers financial support, a mentoring system, and a promotional platform for indie developers. The only stipulation to the enigmatic selection process is that funded games give the Fund all of a game's initial revenue until the Fund's loan is paid back in full. Following this, the Fund receives 25 percent of the game's revenue for two years of the game's shelf life or until the Fund has received twice as much as the initial investment. While these interest rates generally run higher than traditional loans or credit cards, Indie Fund also eats any bad investment, meaning if a game they fund does not recoup investment costs, Indie Fund is out the money, no litigation required. Accordingly, Indie Fund has a strong incentive to choose

games it believes will sell well and support those games in order to maximize its profit potential. For instance, almost all of the games Indie Fund supports receive coverage from major gaming publications and popular press sites. Some of the most successful of these games recouped their budgets within hours or days of releasing (Couch 2014), such as *Monaco: What's Yours is Mine* (Pocketwatch 2013) and *Antichamber* (Bruce 2013).

Indie developers now have more choices when it comes to promoting and distributing their games. They can handle these operations internally, partner with indie-specific publishers, or broker deals with platform holders like Sony for special promotion and placement within their respective digital stores. As a result, indie developers no longer have to rely on exploitative partnerships with major game publishers. Furthermore, any publisher that does try to take advantage of vulnerable indies is quickly identified and blacklisted by the indie community, which reduces the chance that other indies will work with them in the future. This is not to say that current conditions make surviving as an indie developer any easier. Despite rhetoric from Devolver Digital that attempts to position the company as akin to a punk rock record label, or from platform holders like Sony, which continually emphasize their love for indie innovation, all of these partnerships are still predicated on the business opportunities indie studios offer their investors. For all their supposed freedom, indie developers still operate in a decidedly uneven playing field, one where the largest pools of capital and influence still come with caveats and conditions whereby the power hierarchies of the games industry, in which the small and successful grow to become the next generation of gatekeepers, reproduce themselves.

Conclusion

With a focus on digital distribution and an array of publishing partners, this chapter has argued that indie game developers have contributed to profound transformations in the overall video game industry, repositioning indie game development from a niche, exploitable, and subservient part of the business to a central, constitutive pillar in the global industry that actively shapes the structures and strategies of the industry's largest companies. Rather than understanding digital distribution services like Steam as constitutive of the success of indie games today, I have instead argued that indie games and digital platforms have been co-constitutive, each helping the other to grow and prosper. Equally, at a time when indie games do not necessarily need publishing partners, platform holders and publishers have actively changed their structures and policies to accommodate independent developers and attract their partnerships.

Some in the indie community have starting calling this period the "indie bubble," a moment of hype, ambition, and promise that ushers in thousands of entrepreneurial indie developers and millions of dollars in funding only to suddenly pop when audience tastes shift and demand is only strong enough to support a handful of indie companies, which will then grow to become large Triple-A companies themselves. There is evidence to support this threshold theory. With ubiquitous game creation tools and digital distribution, anybody with enough time, talent, financial security, and interest can produce a potential indie hit. In fact, the explosion of independent digital game development has flooded the mobile ecosystem with hundreds of thousands of small games. Likewise, the digital distribution juggernaut Steam is quickly becoming similarly overcrowded with content. In these cases, success comes only to those games that rise above the chaff and sit atop best-selling lists. Once in these lucrative positions, successful games extend their reach exponentially, attracting more

eyeballs and potential transactions. With near-infinite storefronts, how do distributors create robust search engines, recommendation systems, and filters in order to connect users with game experiences they would like, or save games from the obscurity of the dusty back shelves of the database? While these problems perplex platform holders like Apple, Valve, or Microsoft, for instance, they are even more dire for indie developers who depend on their games being visible in order to generate much-needed revenue that will literally determine the survival of their studio.

Even as indie developers have undergirded the industry by contributing content and revenue to its most popular platforms, they have also challenged the industry by practicing more humane working conditions, embracing emerging forms of project funding, and questioning and altering historic and exploitative digital game publishing practices. Ultimately, though, the overwhelming majority of indie developers are not coming from a place of opposition, but rather an alternative mode of practice, one still inline, importantly, with the tenets of capitalism and the neoliberal marketplace. Commercial indie games are not, therefore, as some might imagine, on the margins of the games industry. On the contrary, they exist very much alongside so-called triple-A games at its center, as both challenge and compliment to shifting industry infrastructures of distribution and promotion.

Conclusion
Innovation, Incorporation, Crisis, Rupture, Continuity

"I have to conclude that the games industry is really the indie games industry, and it always has been."
– John Romero, designer on games like *Doom* and *Quake* (Francis 2014)

"People don't realize being indie means you're not just making a game; you're also making a business."
– Founder of Prospect Games Andrew Bennison (Calvin 2015)

The idea that indie games have revolutionized the video game industry is not a new one. Even acknowledging the pivotal role that indie games play in the current games industry, industry luminary John Romero, in the quote that opens this concluding chapter, points out that this has always been the case from a certain perspective. Indeed, while novel in significant ways, the latest "indie revolution" that this volume has examined is not entirely unprecedented. Rather, it is only the latest example in the video game industry where a confluence of forces has enabled independent developers to emerge and shake up the status quo. Moreover, the narrative of indie renewal is not even unique to video games and has been played out across communications technology industries, from film to radio to television, across the 20th and early 21st centuries. This larger historical and cross-media perspective, explored briefly here, is particularly important when considering the competing discourses of renewal and crisis, revolution and doom, that have permeated the indie development space even since it was identified as a viable one between 2006 and 2008.

In his examination of above and below-the-line screen labor, John T. Caldwell (2009) argues that screen studies, effectively, attempts to analyze an industry that is already obsessively analyzing itself. If this is not also the case within the dominant games industry at publisher-run or contracted developers, it is certainly the case with most indie game

developers, many of whom routinely interrogate their place within the gaming industry and culture. Indie developers agonize over their own relationships with so-called mainstream games, the perpetually shifting meaning of indie, its seemingly empty signifier status, their working conditions, financial precarity, and all manner of other aspects of developing independent video games. Indeed, to study and deconstruct indie games, in many ways, is to study a culture, or set of cultures, already busy studying and deconstructing themselves.

Up until this point, this dissertation has acknowledged industry discourses while largely remaining focused on the grounded, concrete, material conditions of indie developers in particular and the larger video game industry in general. Turning now to an analysis of discourses that have circulated throughout these development communities may feel like a methodological pivot. However, discourse is intimately connected with material things, and material things are intimately connected with the development of various discourses and counter-discourses. I want to begin my concluding remarks, therefore, with two competing narratives, one that celebrates the newfound opportunities and possibilities of indie development as a major pillar in the continually shifting video game industry and one that has proclaimed a state of emergency and crisis for indie developers since the first moments of their initial commercial success, framing the indie space as existentially unsustainable, foretelling a falling out that, if not occurring now, lingers always just over the horizon. Reviewing these competing discourses allows reflection on the preceding chapters but also paints a particular picture of the present moment, which we can then place within a larger historical context.

Encouraged by the early success of titles like *World of Goo* (2D Boy, 2008), *Braid* (Blow, 2008), and *Castle Crashers* (The Behemoth, 2008), the first major discourse that has

driven indie development is the discourse of perpetual renewal. The renewal discourse proclaims intrepid indie developers will continue to provide innovation and rupture within the gaming industry. James Bennett (2014) has argued that such a utopian vision is part and parcel with independent media cultures, from music to film to video games. In the years since 2008, the popular and enthusiast games press have shaped a narrative that supports this discourse. For instance, *Wired* staunchly headlines an article, "Indie Studios, Not Corporate Giants, Are the Future of Videogames" (Kohler 2014). Here games journalist Chris Kohler makes an anecdotal argument for the centrality of indie games in the future industry premised on the fact that his family prefers playing indie games to triple-A releases, most commonly associated with action and shooting games. This discourse of renewal achieves legitimacy by pointing to dramatic shifts in the industry that indie games have helped engender, shifts like ubiquitous access to complex development tools, open access to a plethora of digital distribution outlets, the sheer influx of indie-produced games in the marketplace, and myriad success stories of commercial indie developers, all of which have been unpacked in the preceding chapters.

Under this discourse, indies have been positioned as a new central pillar to the commercial gaming industry, an argument this dissertation is sympathetic towards, providing valuable content offerings to distribution services like Steam and dedicated home consoles like the Xbox, PlayStation, and Nintendo brands. Indeed, these major platform holders have created indie-focused divisions dedicated to fostering relationships with indie developers, courting their favor, and securing permanent or timed exclusivity of indie content for their respective platforms. As part of this process, all of these major platform holders have set aside valuable time during their live-streamed press conferences to promote indie titles on

their hardware and craft a corporate image that is amenable and supportive of indie development. This celebratory discourse makes note that the majority of games released today for all platforms are indie games, making indie development vital to the continued health and prosperity of the industry.

Part of this rhetoric of "indie revolution" is also based on the opportunities for gamemakers all over the world. Although historically dominated by North America, Japan, and Western Europe, indie development and success is now a possibility for developers anywhere in the world, as evidenced by the plethora of Polish indie developers quoted in this project. In today's globalized gaming ecosystem, an indie studio can, even in unexpected regions like Siberia or Vietnam, produce a mobile game that is downloaded by over 30 million users around the world (Takahashi 2015). Under the discourse of perpetual hope and renewal, the major firms in the games industry have become beneficent business partners eager to change their practices and policies in order to please and facilitate the success of groundbreaking indie developers. Even when framed at their worst under this hopeful discourse, the major publishers and platform holders become neutral onlookers to the upstart success of indies, unable to fully co-opt or incorporate indie efforts despite continuing to reshape their internal policies to attract and nurture indie partners. However, this renewal discourse neglects to investigate too deeply the actual conditions of indie game labor, the continued difficulty of mobilizing resources, from funding to promotion to viable revenue models to audience retention, nor does it acknowledge the thousands of indies, hobbyists, and amateurs who have been left out of this narrative of indie success.

In contrast to this celebratory or utopian discourse, a potentially more vibrant counter-discourse exists that positions the current period not as the halcyon days of indie

development but instead as merely an indie bubble that threatens to pop at any moment. Just as soon as indie development became a viable, much-discussed option for young and entrepreneurial game developers, it immediately became the subject of skepticism and doubt. Traditionally in video games, the status of independence was always already in crises, to borrow from Bennett, since any independent studio could not exist for long before a publisher would come knocking with a contract or acquisition offer. Indeed, the breakthrough hit *Braid* was already somewhat compromised, from a purist's perspective, since it was part of a promotional deal with Microsoft as they launched their Xbox Live Summer of Arcade in 2008. Beneath the large shadow that *Braid*'s successful launch cast, other indies continued to toil away on their pet projects, uncompromised, perhaps, but also unknown. The discourse of renewal therefore grew simultaneously with its counter-discourse, perhaps most infamously expressed as the "indieocalypse."

There are several tenets to the indieocalpyse hypothesis. One of the factors many point to when supporting this pessimistic perspective has been the gradual price erosion in the industry thanks to free-to-play mobile games and routinized massive sales on digital distribution services like Steam (see chapter four). Players have come to expect cheaper and cheaper prices from mobile and indie games, and often wait to purchase a game until it appears on the next Steam promotional sale. As a financially precarious graduate student, I can attest to this tendency. Price erosion is intimately connected with another problem, which is an overcrowded marketplace.

Whereas utopian notions of indie development celebrate ubiquitous and accessible development tools and distribution options, the result of this kind of open access is an increasing flood of content that must compete for the same pool of consumer attention and

spending (Vogel 2014). For instance, after Steam loosened its restrictions on content and introduced the Steam Greenlight Program, whereby users can vote on games they would like to see added to the service, the amount of content on Steam burgeoned by thousands of titles over the last several years (see chapter four). The fear here is that Steam, one of the most important digital storefronts for indie games on the PC, will increasingly grow to resemble the Apple and Android mobile stores that have hundreds of thousands of games competing for user attention and dollars. As has become evident, only the most heavily promoted games from successful companies are able to crack the covetous top 20 list that most people use to check out new content. Once on the top 20 list of the App Store, most developers then attempt to remain there, using cross-promotional strategies between their games and increasing amounts of promotional investment, which most small indies simply cannot afford.

While the general trend is for indie games to release at lower and lower prices, with free-to-start on mobile being the optimal price point for most players, some critics suggest that the other successful route for indie games going forward will actually be those with increasing budgets and more expansive offerings. Far from identifiable based solely on their size and scope, some indie games have become indistinguishable in terms of aesthetics and scale from so-called mainstream games. The trend toward larger and larger indie games suggests that indie games will essentially adopt the same trajectory as triple-A games that have grown to rely on spectacle, photorealistic graphics, and large, open worlds for players to explore and shape. The industry term being shopped around for this kind of game is triple-indie or triple-I, an indie version of a triple-A publisher-driven game. Indeed, one might make an argument that this trend has already materialized with recent high-profile indie

games *The Witness* (Blow 2016) and *No Man's Sky* (Hello Games, 2016) each having budgets over $5 million, featuring stunningly realized worlds (or whole galaxies), and selling for prices, $40 and $60 respectively, that compare to triple-A releases.

Indie developer and Puppy Games co-founder Caspian Prince frames the indieocalypse discourse in stark terms. In an incendiary blog post from 2014, he writes:

> "I think the next thing that will happen is there will be a mass extinction event, basically. There's got to be a consolidation. I can't see many other developers putting up with the status quo. Another year of this and a whole load of studios are just simply going to give up because it's a waste of time... A lot of people are going to have to stop making games because they can't afford to do it anymore. The dream is burned" (Sinclair 2014e).

Despite the fact that the floor has yet to drop out for indie developers two years later, Prince's words still ring true for thousands of aspiring indie developers who struggle to break through the veritable clot of competition. Under the indieocaplyse discourse, successful indies will grow to resemble the dominant and reviled publishers, like Activision-Blizzard, once a small indie company itself, while the rest of the indie community suffocates from meager revenue streams and a critical mass of competition that renders most releases as mere static that disappear from public awareness as soon as they are released.

Of course, the truth in these competing discourses, if there is one, is probably somewhere in the middle, and, moreover, importantly depends on one's understanding of success or failure for indie developers. Although doomsayers have warned of the end times for almost a decade now, the market for indie games has not collapsed; just the same, as the trends of the last decade illustrate, the indie market will continue to see increased competition, making visibility and discoverability increasingly difficult, if not prohibitive, and placing more emphasis on marketing strategies, public outreach, and community management. Despite their polarizing differences, what these two competing discourses share

is a presentist worldview, and each often fails to recognize that this story of indies, innovators, and upstarts is not a new one. In fact, the story of innovation, incorporation, crisis, and renewal is one that has recurred a number of times in the video game industry throughout its history, starting as far back as the 1970s. But more broadly, this story has repeatedly manifested across the history of communications technologies, from the formation of the film industry to the daily disruptions dreamed of by tech startups today. Looking back at this history helps contextualize and re-frame the recent rise of indie game development in the video game industry as only the most recent and localized example of this phenomenon, one that is directed as much by changes in culture and industry as economics and technology.

A Very Old Story

In his book *The Master Switch*, technology journalist Tim Wu builds off of and critiques the work of economist Joseph Schumpeter on capitalism's self-renewing abilities in order to map out a historical process whereby inventions transition from hobbyist-driven, open technologies to consolidated, centrally controlled, closed systems where a small group of powerful corporations or conglomerates reshape the technology to serve their own capitalist interests. Yet even after having consolidated control of an industry, Wu argues, these closed systems inevitably succumb to disruptions from within and without the dominant media firms, "giving way to all sorts of technical possibilities and expressive uses for the medium before the effort to close the system likewise begins again" (Wu 2011, 6). Wu calls this process whereby technologies transition from open to closed systems, and back again, "the cycle," identifying the perennial tendency of this particular social, cultural, political, technological, and industrial process across media forms. That is, technologies tend to start

out as independent and open and, through the formal processes of culturalization, formalization, marketization, and policy-making, gradually become more closed and consolidated before a disruptive agent reintroduces novelty and possibility into the process. Under Wu's cyclical model, innovation is either sustaining and centralized, like the yearly iteration of Apple's iPhone, or disruptive and decentralized, like the meteoric rise of indie upstart *Minecraft* (Mojang 2011), which spearheaded the shift toward early access release models and open-world, building games, both trends which are now emulated by small and large developers alike. As Wu frames it, every marvelous communications invention of the 19th and 20th centuries entered the world amidst "revolutionary novelty and youthful utopianism" (6). Yet given time, each became "a highly centralized and integrated new industry" (6). In his book, Wu's ultimate goal is to advocate for policies that safeguard a free and open Internet, and he lays out the history of communications technologies, from the telephone through film, radio, and television, in order to make his case for "the cycle," which acts as a hermeneutic for understanding the formation of communications industries and those forces that disrupt them once they become concentrated, centralized, and risk-averse.

Despite presenting a cogent argument for "the cycle," Wu tends to ignore the robust scholarship that preceded him (Czitrom 1983; Winston 1998; Williams 2003; Streeter 1996; Sterne 2003; Susman 2003; Gitelman 2008; Carey 2008; Douglas 2004), which not only marshal similar arguments, but do so without the taint of technological determinism that lingers at the edges of Wu's historical analysis. Wu attends to historical examples of disruption in the film, radio, and television industries by assigning agentive value either to upstart technologies that grow to replace or augment existing ones (i.e. television overtaking the radio as the central mass communication form) or to governmental intervention,

specifically anti-monopoly campaigns to break up industries deemed too concentrated, like the Bell System. Yet technologies are never just one thing. They rarely grow in the ways their creators envision, and, especially in their nascent forms, they contain a multitude of possible futures that are determined not by the affordances of the technologies themselves, nor even the tenets of capitalism (whether in its industrial or post-industrial forms), but by specific choices made by actual people at the level of production, distribution, marketing, popular and critical reception and use, legislation and policy. Moreover, unlike medium specific studies in the areas of music and film, which account for the ways independent production has affected the mainstream at various historical junctures, Wu tends not to see rupture as occurring within the same media form, but rather, again, primarily through the advent of new technology or the guiding hand of government legislation.

Cultural and media studies scholars have also recognized the centralizing tendency of emerging media forms, noting how supposedly novel moments in media history are actually just the latest iteration of discourses, aspirations, and market forces that have transpired previously under different technologies. Collectively, this scholarship sketches a historical tendency towards cycles of innovation, incorporation, crisis, rupture, and renewal in telecommunications technologies, spearheaded and then continually renewed by the efforts of decentralized independents and outsiders. The ultimate effect of these cyclical patterns of concentration and disruption, ironically, is a sense of continuity, even amidst periods of great upheaval.

Focusing more on the independent contexts which birthed the leading technologies of the 19th and 20th centuries, Daniel Czitrom (1983) examines the introduction and standardization of several communication forms, including the telegraph, motion picture, and

radio. In each case, Czitrom illuminates the inventors, tinkerers, business professionals, and circumstances that shaped the medium's cultural adoption. In the case of film, Czitrom writes, "each early attempt to standardize or license equipment, films, and distribution was undermined by successive waves of independents" (186). When Edison's Motion Picture Patents Company tried to control the fledgling film industry on the east coast, independents moved to Hollywood to form the studios that would become the new center of authority and power. Early radio too was jumpstarted by groups of independent researchers and amateurs, called Hams, who starting as early as 1905 "provided a crucial demand for wireless equipment, supplying the original seed capital and audience for the radio industry" that would develop when large corporations like RCA began their campaign of intimidation and concentration of broadcasting power (189).

Brian Winston (1998) provides an even more nuanced approach to explaining the tendency for concentration and rupture in technology and communications industries. Winston argues that what we call the history of technological progress and communication is actually a series of innovations and diffusions of technology that follow a predictable routine of transformations. This path is one from idea to prototype to invention, which is then introduced and absorbed into existing social, political, and economic structures, usually by way of commercial enterprise. Prototypes become inventions, suggests Winston, when they meet one of three social needs, either a necessity based on the introduction of other technology (the railroad necessitated the telegraph), a necessity based on the concentration of other social forces (the modern corporation necessitated many innovations), or a strictly commercial necessity (video games might rightly fall under this social need). Citing Fernand Braudel (1981), Winston calls this model one of "historical 'brakes' and 'accelerators" (11).

Social needs act as the accelerators in this model, while the brakes are usually imposed by leading companies and institutions that fear that innovation will result in too radical a change, effectively threatening their dominance (11). Winston is quick to point out that this process is not a conspiracy or "overt authoritarian prohibition" but simply a hegemonic response to novel forms of technology and communication to hinder or contain any radical potential (13). Using this model, Winston illustrates how the radical potential of technologies, from the telegraph to the Internet, have been slowed and incorporated into existing regimes of capitalism and order.

What all of these studies provide us with is a historical understanding of the kinds of innovations, disruptions, upheavals, and transformations occurring in the video game industry, particularly centered around the independent developer, ubiquitous access to creation tools, digital distribution, and a globalized industry of production and consumption. As an industry that depends on producing and selling an unending chain of emerging technologies (see chapter two), the gaming industry embraces technological innovation, just as long as that innovation does not radically disrupt existing business models and revenue streams. What has allowed indie developers to carve out a corner of the industry without gaining the ire of the dominant platform holders and publishers is that they do not necessarily depend on emerging and competing technologies, but instead on emerging affordances of financing and distribution. The industry can then view the proliferation of indie games as cheap content for their services and platforms off of which they can profit. One the one hand, indie developers have been able to collectively yet gradually challenge traditional industry structures, policies, production routines, design dogmas, and centers of power. On the other hand, we can also view these gradual changes as the result of industry forces operating under

the logic Winston outlines whereby the dominant industry slows the radical potential of indie developers to a manageable and continual stream of small but absorbable innovations.

As will be suggested in the remainder of this conclusion, the same tendencies of concentration and disruption have played out in the video game industry throughout its history. Within this time, independent developers have emerged, time and again, to offer alternative visions and directions for the industry, even as they have repeatedly confronted the same challenges from the dominant publishers and platform holders. For indie game producers, these challenges, when they arise, have historically presented a state of crisis, but also an opportunity to change the status quo. Geoff King (2014) has argued that indie media can be seen as always already in a mutual state of crisis *and* renewal. That is, indie media is always being compromised in one way or another (aesthetically, industrially, discursively, socio-politically) while simultaneously, promising a resurgence, renewal, or transformative rebellion. James Bennett (2014) has likened this continual state of crisis/renewal to Wu's concept of "the cycle," which, again, argues that media historically migrates from informal to formal systems, dominated by controlling oligopolies, before innovation and disruption restarts the cycle.

Innovation

The first few decades of the video game industry saw many competitors vie for supremacy. Yet Atari is often recognized as the first major industry leader in the North American home console space. After making its initial business on coin-operated arcade machines, Atari transitioned into the home console market first with a dedicated home version of its popular *Pong* (1975) and eventually with the programmable console Atari Video Computer System

(VCS), introduced in 1976. Just as the industry upstart achieved this milestone, Atari founder Nolan Bushnell sold the company to Warner Communications, essentially placing control of the home console market in the hands of one the largest media corporations. Under Warner, Atari engaged in particularly centralizing practices, such as denying credit to individual game authors by branding all internally-produced games as simply Atari games. This lack of authorial acknowledgment eventually led to the exodus of a group of Atari game designers who started the independent development studio Activision in 1979. Activision was the first independent developer to produce games for the Atari VCS, which resulted in litigation between the two companies before the establishment of a licensing agreement that made Activision an official third party developer. In the following years, more independent companies would form to follow in Activision's footsteps, eventually ramping up to over 100 before the market crash in 1983.

Economist Mirko Ernkvist (2006) has examined the famous video game crash of 1983, yet he frames it as just one of several moments of crisis in the industry during its first 15 years. Indeed, prior to the 1983 crash, Ernkvist discusses the 1975 and 1982 arcade shake-outs, and the Pong console crash of 1977. In all of these instances, argues Ernkvist, three major factors contributed to moments of crisis and change in the video game industry: 1) disruptive technologies; 2) limited differentiation of product; and 3) reduced barriers to entry and the resulting creative destruction that follows an influx of fledgling companies.

Ultimately, Ernkvist characterizes the many crashes of the early video game industry as a result of all of the above conditions, resulting in the emergence of many small gaming companies in the industry during boom years and the subsequent decline of these companies in the face of rapid technological change and lack of product differentiation in the

problematic years of 1977 and 1983. By examining the significant crashes in the early games industry, Ernkvist's research also illuminates previous periods of growth and decline for independent game companies, particularly those that followed in Activision's footsteps, enjoyed several years of access on the Atari VCS, and were subsequently forced into bankruptcy after the 1983 crash. In fact, media historian Laine Nooney (2015) has argued that the period between 1979 and 1984 represents one of several precursors to today's indie moment. In essence, Ernkvist and Nooney provide a historical record for many prior "indieocalypse" events, offering a framework in which to contextualize the latest iteration of this discourse.

As studies like these illustrate, independent game development has shaped the video game industry at every step of its development. The latest moment of innovation driven by what are now called indie developers is only the latest in a long trajectory of industry disruptions and shifts. As Bennett Foddy (2014) argues, following Laine Nooney (2014), far from being unprecedented, there are only four significant differences in this latest cycle of indie developers. First, independent developers have adopted the counter-cultural baggage of the "indie" moniker. Second, more indie developers now operate than any other time in history. Third, indie development is now viable on platforms outside of the PC ecosystem. And finally, indie games have now been incorporated into the general industry dynamics and operations, not just as companies to be exploited for value, as in past iterations of indie growth, but importantly as content producers with genuine leverage over industry giants.

As a medum situated between the technology and entertainment industries, video games are unique in that, while their forms must settle on recognizable and pleasurable genres, there is an impulse to continue to drive the underlying technology forward, which

actually necessitates the development of new genres and forms. The result is a tension between innovation and continuity, a tension which major publishers and platform holders try to keep in check, offering just enough innovation to keep players interested while not harming their successful business models and revenue streams. Indie developers, on the other hand, have little incentive not to innovate in ways that severely break from traditional models. This is how independent companies like Activision helped create the third party developer model when they broke from Atari, where developers pay for the right to produce content for proprietary home consoles. This is also how Scott Miller and Apogee, along with Tim Sweeney and Mega Epic Games, popularized the freeware model in the early 1990s (see chapter one), arguably a precursor to the now ubiquitous free-to-play model.

The latest generation of indie gamemakers has also offered numerous innovations that have disrupted and changed the gaming industry. Indie developers have popularized emerging platforms like crowdfunding and have proposed alternative, if not still problematic, studio structures and development practices in an attempt to assuage historic workplace problems. Indie developers have helped grow digital distribution across the PC, mobile, and home console platforms, as well as encourage a new generation of indie-friendly, micro publishers and incubators. Led by Mojang's *Minecraft*, indie developers have also innovated on game release windows, introducing and standardizing the early access model. On the margins of the industry, indie and hobbyist developers have eschewed the urge to develop for the latest platforms and instead embraced nostalgic development for obsolete platforms, while the embrace of accessible gamemaking tools has produced a vibrant amateur, DIY development scene I have called everyday development.

Yet despite these contributions to the industry, the latest generation of commercial indie developers has arguably never achieved the critical distance from the industry necessary to create truly disruptive innovation. Instead, the exposure of indies in the 21st century, particularly in the years after 2008, have almost always come at the behest or on the back's of the major platforms and services. Innovation is always encouraged in the video game industry, but as Winston reminds us with his historical model of accelerators and brakes, dominant industry firms have made an effort to control the speed at which the industry adopts emerging game genres, business models, and distribution methods.

Incorporation

According to Geoff King (2014b), institutionalization was important to the recognition and growth of indie cinema in the 1980s (11). Indeed, the emergence of the commercial indie game sector as it exists today was only possible after recognition by major publishers and platform holders like Sony and Microsoft that indie games could be a valuable and inexpensive resource to bolster content portfolios, increase sales, and attract players with an appetite for more content. Indie games are especially important at a time when the major game publishers have dramatically reduced the number of titles they release each year. The focus major publishers in the industry place on blockbuster games leaves a sizeable gap in product diversity and release windows that allows indie game creators to step in and introduce an array of unique product to satiate consumer demands. It is telling that one of the most played and talked about games on the PS4 when it launched in the fall of 2013 was not a triple-A game but rather the indie shooter *Resogun* (Housemarque), which Sony published for exclusive rights.

As a result of their sudden position as content filler between blockbuster releases and incubators for innovative designs deemed too risky for expensive publisher-produced games, indie games and indie developers enjoy an attention from platform holders and publishers heretofore unprecedented. Companies like Microsoft and Sony dedicate significant time and resources to promoting and shepherding indie development efforts, often touting exclusive indie content for their respective game consoles. Microsoft has introduced several programs to lure indie developers over the last ten years, from its dedicated DIY Xbox Live Indie Games store on the Xbox 360 to its more formalized ID@Xbox (independent developers @ Xbox) development program for its Xbox One console (Nutt 2014). Sony has courted indies through a dedicated indie relations division, primetime spots at press conferences, the oft repeated slogan, "We Heart Indies," and the rhetorical acknowledgement in 2013 by former Sony Computer Entertainment of Europe Head of Strategic Content that the indie revolution is over and the indies won (Batchelor 2013). Nintendo has also reached out to indie developers, labeling those developers who produce content for their platforms as "Nindies," while offering sponsorship for travel to festivals like IndieCade and prominent promotion for select partners on their digital store.

On the mobile side of things, Apple and Google have each made plays to lure promising indie games to their platforms first (Sherr & Daisuke 2014). For instance, Apple created a dedicated Indie Game Showcase section of its App Store in March 2014 in an attempt to highlight significant indie efforts, a plan which, while good public relations, ultimately does little to solve the problem of market overcrowding in its ecosystem.

Indie games have been incorporated not just in gaming culture, but in popular culture more broadly. For example, indie games are now covered widely in venues like *The New*

York Times and *National Public Radio*, among others, illustrating the cultural cache of the burgeoning industry of indie game titles. Hoping to capitalize on the enthusiasm for indie development at the moment, Taco Bell sponsored the Indie Game Garage, a program that invites indie game creators to share their work in-progress for a chance at Taco Bell gift cards and supposed access to "gaming industry experts" (Taco Bell 2015). Similarly cynical, Mountain Dew sponsored an ill-fated reality show, Game_Jam, in 2014, which would have chronicled the development efforts of a group of indie gamemakers during a game jam, an intense production session meant to produce quick, playable prototypes. This program never aired, however, since three of its key participants, developers Zoe Quinn, Davey Wreden, and Robin Arnott, quit during production when they realized production staff were manipulating them in order to shape a more dramatic story (Campbell 2014).

Not only have major platform holders incorporated indie developers into their content strategies, but they have also, along with publishers, adopted many of the innovations indies have practiced over the last ten years. Geoff King (2014b) has traced similar tendencies by major Hollywood studios, who have adopted practices like digital downloads and streaming VOD years after indie filmmakers turned to these burgeoning venues as potential alternative distribution options. Indies have certainly contributed to the wholesale shift toward digital distribution on the PC and increasingly console platforms, yet they have also influenced other areas of business for platform holders and publishers. For instance, publisher SquareEnix attempted an "Augment Your Pre-order" campaign for its 2016 game *Deus Ex: Mankind Divided* modeled after Kickstarter-esque incentives for customers. The more people pre-ordered the game, the campaign promised, the more free content early adopters would unlock upon the game's release. Despite efforts to capture the zeitgeist of crowdfunding, this

approach to rewarding players resulted in consumer frustration, leading SquareEnix to cancel the campaign outright (Frank 2015). While SquareEnix failed to coopt the indie crowdfunding rewards model for their pre-order campaign, other instances of industry incorporation of novel indie practices have proven more stable. In addition to Steam formalizing the early access model on the PC platform (chapters three and four), Microsoft has embraced early access as part of its Xbox One Preview Program. The program allows users early access to future features on the console, allowing them to test the features before they become available to a wide audience. The program was so successful for Microsoft that access to it quickly became limited. In all of these examples, whether framed as an embrace of indie developers themselves or the various innovations indies have helped foster in the gaming industry and culture, we can see a tendency to wrangle open-ended models and apply them to closed ones, incorporating these practices into centralized ecosystem's like Steam, Xbox Live, or PlayStation Network.

Crisis

Crisis in indie media culture can take several forms. One manifestation of crisis is the fear of cooptation, either aesthetically or in terms of business acquisition. This form of crisis is deeply imbricated with discursive struggles. The other form of crisis is one of economic sustainability, an existential crisis concerned with an indie developer's ability to stay in business and continue to produce games. Although arguably still in a state of emergence, there are cries of crisis from everywhere in the indie development community, as evidenced by the "indieocaplyse" discourse noted at the start of this conclusion. This simultaneous enthusiasm and trepidation mirrors similar sentiments in the indie movie community, as King

(2014b) describes, and indeed speaks to the always already in crisis state of alternative media that must define itself against a more stable (but still ever shifting) mainstream or dominant paradigm.

Writing on indie cinema, King (2014b) suggests that indie media "almost *needs* to be seen as existing in a permanent state of crisis; that this is, in a sense, part of its definition. To be truly indie, in this view, is not to be too stable and secure but to exist in a manner that is understood as being in some way 'on the edge', or at least embattled if located within the arms of a studio division" (10). The crisis comes, argues King, when acceptance of indie production grows too large and threatens the autonomy of indie creators, either discursively or industrially, with the former being a crisis of identity and the latter being a literal crisis of control and creative independence – and to this I will add, a crisis of economic sustainability (11).

Of course, some industry professionals do not position the current state of indie development as a crisis at all, but rather the playing out of particular industrial trends. This perspective dictates, in a suspiciously deterministic fashion, that small development will inevitably split into either commercial indie ventures or non-commercial amateur and hobbyist production (Galyonkin 2015). According to this argument, commercial indie developers must invest in market analytics, complex advertising and promotion campaigns, rigorous production plans, and an overall business strategy in order to compete in the continually shifting video game marketplace. Those less interested in developing as a business remain free to experiment and invest in personal projects with little to no market potential.

Despite not agreeing with the inevitability of current industry trends, there is ample evidence to suggest this schism has already taken place and continues to define particular sectors of indie development, as evidenced in my chapters that focus on everyday developers, homebrew hobbyists, and commercial indies, respectively. Yet this also points to another facet of this ongoing process of disruption, consolidation, crisis, and rupture. Perhaps even before being identified as a cogent development ethos or sector, indie games have always been fractured, with indie communities wrestling with competing notions of commercial appeal, personal investment, and artistic goals.

Rupture

The problem with media independence is that is has historically been defined relationally via a long set of binaries, including niche/mainstream, authentic/commercial, free/controlled, low budget/high budget, and subculture/dominant. As a media culture that sits outside of this binary, alternative media tends to avoid the commercial tendencies of indie media while also marshaling challenges against both mainstream and indie media alike. Multiple and competing ideologies circulate and clash within indie development culture, and it is the position of this dissertation that the same neoliberal ideologies that govern the dominant games industry have largely prevailed. Yet where there is power there is also resistance. In the wake of the mainstreaming and incorporation of indie games into the dynamics of the global video game industry, alternative games and everyday-developed games have emerged as a renewing counter-hegemonic bloc.

Having been incorporated into the machinations of the dominant gaming industry, the label “indie game” became anathema to various groups of alternative gamemakers who have

rallied under various identities, including queer games, artgames, and alternative games or altgames. Indeed, the dissatisfaction in the gaming community over the discourse of indie games led to a continual search for a more authentic, non-compromised moniker. Unlike commercial indie games, which largely have a market prerogative and an incentive to cozy up to dominant industry firms, alternative games and their creators strive to keep the dominant industry at an arm's length. The everyday developers explored in chapter one fall within this outlier category of game developers, which also act to interrogate the discursive and formal boundaries of the industry. These everyday developers, consisting of women and other underrepresented groups within the industry and culture of video games, create conditions of possibility within the space of gaming. These developers not only offer the radical potential to rupture the entrenched white, heteronormative, and masculinized discourses in gaming, but also to rupture the entrenched genres, design dogmas, narratives, and models of production and exchange predicated on neoliberal capitalism.

The significance of this rupture within the indie game community is that it illustrates a perpetual state of struggle with the otherwise routine trends of innovation and incorporation, one that will continually (re)animate the space of indie game development, offering fresh challenges to the dominant industry, not only in terms of technology and design, but more importantly in terms of ideological, representational, and formal critiques.

Continuity: An Industry of Indies

Even in the organization of this concluding chapter, I flipped the places of "Rupture" and "Continuity" several times. By ending on Rupture, I would be making a more hopeful statement, indicating that regardless of changes the market undergoes or what ways power

might exercise control over burgeoning upstarts and industry underdogs, the forces from below, the forces of change, will always find a way to disrupt the status quo and marshal resistance. But I didn't end on Rupture. I decided, instead, to end on "Continuity," a far less radical proposition, but one that I feel more accurately reflects the reality of the history of media industries and the role of independent media producers in animating that history.

In reviewing various scholarship on indie cinema, Geoff King disagrees with the notion that independent cinema is a thing of the past or quarantined to a specific epoch in the 1980s or 1990s. Rather, King (2014b) emphasizes lines of continuity that connect the indie cinema of today with that of past decades (260). Indeed, I want to conclude this project by arguing for a similar point in indie games. As much as the industry and landscape for video games has changed over the past decade, particularly for indie developers who hold such potential for radical resistance and change, there are still tried and true industrial forces that continue to unfold. The tendency for growth and concentration, for instance, continues. The emergence of small, indie-focused publishers, discussed in chapter four, has led to several notable success stories. With this success, mergers and acquisitions have taken place. For example, after UK indie publisher and developer Curve Digital proved financially successful with its indie-focused model, the company Kuju, owned by the larger, private-equity-backed Catalis Group, acquired the small, digital publisher in 2016 (Dring 2016). The new organization, Curve Digital Entertainment, now has designs to grow to become a major games publisher operating out of the UK.

As discussed in chapter three, discourses that champion indie game development in terms of their unique aesthetics, mechanics, or narrative structures often forget that these studios still need to operate like for-profit endeavors. Founder of Prospect Games Andrew

Bennison cements this sentiment when he remarks, “People don’t realize being indie means you’re not just making a game; you’re also making a business” (Calvin 2015).

The latest indie development bubble is only the latest one the industry has witnessed. Indeed, there is a too-often unacknowledged history of independent game companies in the industry, particularly the wave that emerged in the 1980s whose most successful examples grew to become the industry powerhouses we know today. Developers like John Romero (famous for his work with id Software and early, influential first-person shooters like *Doom*) and Epic Games, and indeed major publishers like Activision and Electronic Arts all started out as indie upstarts in this period (Francis 2014).

The road to success for indies still exists. The same emerging funding models, ubiquitous and free access to development tools, and myriad digital distribution options continue to evolve and adapt to the needs of indie developers and players. However, there are still challenges. Marketing remains a difficult issue, as does discoverability and visibility in an increasingly competitive digital marketplace where there is infinite shelf space but limited eye space. This is a problem for all media as they transition to digital-only consumption, but effects small media producers who lack robust marketing budgets in particular. Despite the fact many developers decided to go indie to avoid the harsh work routines and practices of the major publisher-affiliated shops, many indie studios continue to reflect the worse aspects of the dominant industry. The rhetoric of independence has therefore been continually undercut by internal policies and practices and the increasing use of third party vendors like indie-focused publishers or even major platform holder partners. For every success story lacking drama, there are stories of exploitation and sour grapes over unfulfilled promises and bullying from publishing and platform partners.

As a whole, the video game industry also relies on continually convincing customers to desire the newest technology and software innovations. The consequences of this, as outlined in chapter two, is that the gaming industry, like other ICT companies, is directly culpable for the increasing problem of electronic waste, the build up of technology trash that is collected in developed nations and shipped off to developing nations like Ghana and China to process in whole cities that are devoted to the dissembling and salvaging of these toxic materials. Solving this particular problem is not necessarily in the industry's purview, yet pockets of developers, players, and hobbyists have marshaled against the allure of the new and instead invest their development and play time in so-called outdated or classic video game hardware and software. For indie developers, one lesson here is that, despite the leading ethos of the dominant industry, a choice exists to embrace existing and outmoded technologies rather than constantly flocking to the latest innovations. Another way of addressing these problems, although one I have not addressed in this dissertation, is the development of critical indie games that call attention to the industry's culpability in such production and waste chains. The best example of this kind of approach is the Molleindustria game *Phone Story* (2011), a game that traces what Raeford Guins (2014) calls the lifecycle of material video game hardware from rare earth mines in Africa to production plants in China to store shelves all over the world, to players houses and apartments, and finally to the e-waste salvaging cities discussed above, where a lot of discarded computing and gaming technology, including the cell phones we dispose of every few years, end up.

Finally, the lingering problem of difference within the video game industry is another issue that indie development has both addressed but also problematically reproduced. Commercial indie game development is still dominated by young white men, both in terms of

demographics but more importantly in terms of media exposure. Accordingly, rather than challenge entrenched design dogmas, representative tropes, or embedded ideologies of gender, race, and sexuality, many commercial indie games actually reproduce these dominant qualities. Fortunately, the alternative game movement, opposed to both dominant and commercial indie paradigms, and in which I place the DIY, craft, or everyday developer movement, does offer formidable critiques of the white, heteronormative, masculinized portion of the industry.

I began this project with a genuine enthusiasm for indie game development, a belief that games from below and the margins could offer substantial critiques of the culture and industry of video games, whether related to issues of labor, difference, or technological waste. My research revealed that such nodes of resistance did, in fact, exist and small game makers were acting at a number of levels to subvert the worst practices of game development and the worst aspects of the often-toxic culture of digital gaming. However, the production of this project also dwindled my initial flame of enthusiasm. A harsh reality set in, particularly as I moved from the margins of everyday development to what I have framed as the core of the industry in commercial indie game development. Here the radical potential of indie games has been fully absorbed into the machinations of the capitalist video game industry. Critiques still exist in this space, but they are continually levied against the market needs of development studios and the propensity of players to treat games like disposable entertainment media rather than potentially radical critiques of real-world systems and discourses.

While the purpose here has not been to trace a lineage from early indie games to today's prolific output – and indeed, this is work that needs to be done in more detail – I

nonetheless suggest that indie game development is both healthier than it has ever been and in as much a state of crisis as it has ever been. What has changed, however, is how imbricated the work of indie developers of all sizes are with the machinations of the dominant global games industry, from solo operations working out of apartments to small studios of several dozen to self-identified independent studios often employing hundreds of people during peak development periods. Indies have emerged to become part and parcel with the new cultural economy of digital game production, a creative economy that continues to wrestle with the place of video games uncomfortably situated between conflicting concepts of art, technology, entertainment, and commodity.

Bibliography

Alexander, Leigh. 2008. “Interview: EA’s Riccitiello On Having Faith In Mirror's Edge, Grasshopper Manufacture.” *Gamasutra*, Oct. 16. http://www.gamasutra.com/view/news/111602/Interview_EAs_Riccitiello_On_Having_Faith_In_Mirrors_Edge_Grasshopper_Manufacture.php.

Alexander, Leigh. 2013. “Four Perspectives on Personal Games,” *Gamasutra*, April 29. http://www.gamasutra.com/view/news/191406/Four_perspectives_on_personal_games.php

Alexander, Leigh. 2014. “Taking on the Challenges of Being a Mom in Game Development,” Gamasutra, Jan. 23. http://www.gamasutra.com/view/feature/209100/taking_on_the_challenges_of_being_.php?page=1.

Altice, Nathan. 2015. *I am Error: The Nintendo Family Computer/Entertainment System Platform*. Cambridge, MA: MIT Press.

Andrejevic, Mark. 2009. "Exploiting YouTube: Contradictions of User-Generated Labor." In *The YouTube Reader*, edited by Patrick Vonderau and Pelle Snickars, 406-423. National Library of Sweden.

Anthropy, Anna. 2012. *Rise of the Videogame Zinesters: How Freaks, Normals, Amateurs, Artists, Dreamers, Drop-Outs, Queers, Housewives, and People Like You Are Taking Back an Art Form*. New York: Seven Stories Press.

Anthropy, Anna. 2014. *ZZT*. Boss Fight Books.

“App Store Metrics.” 2016. http://www.pocketgamer.biz/metrics/app-store/categories/

Banks, John. 2013. *Co-Creating Videogames*. Bloomsbury Academic.

Barbrook, Richard, and Andy Cameron. 1996. “The California Ideology.” *Science as Culture* 6 (1): 44-72.

Barbrook, Richard. 1998. “The Hi-Tech Gift Economy.” *First Monday* 3 (12): http://firstmonday.org/ojs/index.php/fm/article/view/631

Barry, John. 2006. “Resistance is Fertile: From Environmental to Sustainability Citizenship.” In *Environmental Citizenship*, edited by A. Dobson and D.R. Bell, 21-48. Cambridge, MA: MIT Press.

Batchelor, James. 2013. “LGC: The Indie Developer Revolution is Over.” MCVUK, Nov. 13. http://www.mcvuk.com/news/read/lgc-the-indie-developer-revolution-is-over/0124254

Baym, Nancy. 2014. “Plenary.” Paper presented at the annual Console-ing Passions Conference, University of Missouri, April 10-12.

Bennett, James, and Niki Strange, eds. 2014. *Media Independence: Working with Freedom or Working for Free?* New York: Routledge.

Bestebroer, Pascal. 2013. “The Life of an Indie – Creativity vs. Business.” *Indiegames.com*, Sept. 11. http://indiegames.com/2013/09/the_life_of_an_indie_-_creativ.html

Bogost, Ian. 2010. *Persuasive Games: The Expressive Power of Videogames*. Cambridge, MA: The MIT Press.

Bogost, Ian. 2011. *How to Do Things with Videogames*. Minneapolis: Univ. of Minnesota Press.

Bogost, Ian. 2012. “Persuasive Games: What is a Game Bundle?” *Gamasutra*, Jan. 19. http://www.gamasutra.com/view/feature/6595/persuasive_games_what_is_a_game_.php

Bogost, Ian. 2014. “Why Gamification is Bullshit.” In *The Gameful World: Approaches, Issues, Applications*, edited by Steffen P Walz and Sebastian Deterding, 65-80. Cambridge, MA: MIT Press.

Bordwell, David, Janet Staiger, and Kristin Thompson. 1985. *The Classical Hollywood Cinema: Film Style & Mode of Production to 1960*. Reprint edition. New York: Columbia University Press.

Bordwell, David, and Noel Carroll, eds. 1996. *Post-Theory: Reconstructing Film Studies*. Madison: University of Wisconsin Press.

Boucher-Vidal, Guillaume. 2014. “How Game Devs Can Hire the Best Talent, Even without Salaries.” *Polygon*, September 11. http://www.polygon.com/2014/9/11/6132227/game-development-startup-salaries.

Bourdieu, Pierre. 1984. *Distinction: A Social Critique of the Judgment of Taste*. Translated by Richard Nice. Cambridge, MA: Harvard University Press.

Brabham, D. C. 2016. “How Crowdfunding Discourse Threatens Public Arts.” *New Media & Society*, http://doi.org/10.1177/1461444815625946

Braudel, Fernand. 1981. *Civilization and Capitalism 15th-18th Century Volume 1: The Structure of Everday Life, The Limits of the Possible*. New York: Harper & Row.

Brightman, James. 2016. “PC to Dominate $100bn Games Market in 2019 – DFC.” *Games Industry*, March 14. http://www.gamesindustry.biz/articles/2016-03-14-pc-to-dominate-usd100bn-games-market-in-2019-dfc

Caldwell, John T. 2008. *Production Culture: Industrial Reflexivity and Critical Practice in Film and Television*. Durham, N.C: Duke University Press Books.

Caldwell, John T. 2009. “Screen Studies and Industrial ‘theorizing,’” *Screen* 50 (1): 167-179.

Calvin, Alex. 2015. “Prospect Games’ Box Office.” MCVUK, Dec. 1. http://www.mcvuk.com/news/read/prospect-games-box-office/0159780

Campbell-Kelly, Martin. 2003. *From Airline Reservations to Sonic the Hedgehog: A History of the Software Industry*. 3rd prt. edition. Cambridge, MA: The MIT Press.

Campbell, Colin. 2012. “GameStop to Game Devs: Please Love Us,” *Gamasutra*, August 6. http://www.gamasutra.com/view/news/175305/GameStop_to_game_devs_Please_love_us.php

Campbell, Colin. 2014. “How ‘Game Jam’ an Indie Game Dev Reality Show, Collapsed on its First Day of Filming.” Polygon, March 31, 2014. http://www.polygon.com/2014/3/31/5568362/game-jam-reality-show-maker-studios

Carey, James W., and G. Stuart Adam. 2008. *Communication as Culture, Revised Edition: Essays on Media and Society*. New York: Routledge.

Cassell, Justine, and Henry Jenkins, eds. 2000. *From Barbie to Mortal Kombat: Gender and Computer Games*. Revised edition. Cambridge, MA: The MIT Press.

Castells, Manuel. 2000. *The Rise of the Network Society*. 2nd edition. Malden, MA: Wiley-Blackwell.

Catlow, Ruth, and Marc Garrett. 2007. “Do It With Others (DIWO): Participatory Media in the Furtherfield Neighbourhood.” *Tactical Media Files*, April 4. http://www.tacticalmediafiles.net/articles/3498/Do-It-With-Others-_DIWO__-Participatory-Media-in-the-Furtherfield-Neighbourhood;jsessionid=B6DD2C0DC2376DC6AD8EB204D40B4DD2

Chess, Shira., and Adrian Shaw. 2015. “A Conspiracy of Fishes, or, How We Learned to Stop Worrying About #GamerGate and Embrace Hegemonic Masculinity.” *Journal of Broadcasting & Electronic Media*, 59 (1): 208–220.

Christian, Aymar Jean. 2015. “Indie TV: Innovation in Series Development.” In *Media Independence: Working with Freedom or Working for Free?*, edited by James Bennett and Niki Strange , 159-181. New York: Routledge.

Cifaldi, Frank. 2012. “For One Kickstarter Employee, Double Fine’s Project Is Literally a Dream Come True.” *Gamasutra*, Feb 10. http://gamedevelopment.com/view/news/129614/For_one_Kickstarter_employee_Double_Fines_project_is_literally_a_dream_come_true.php.

Clark, Ryan. 2015. “The 5 Myths of the Indiepocalpyse.” *Gamasutra*, Sept. 8. http://gamasutra.com/blogs/RyanClark/20150908/253087/The_5_Myths_of_the_Indiepocalypse.php

Consalvo, Mia. 2008. “Crunched by Passion: Women Game Developers and Workplace Challenges.” In *Beyond Barbie and Mortal Kombat*, edited by Kafai, Denner, Heeter and Sun, 177-192. Cambridge, MA: MIT Press.

Consalvo, Mia. 2009. “Convergence and Globalization in the Japanese Videogame Industry.” *Cinema Journal* 48 (3): 135–41.

Conway, Kyle. 2004. “Digital Video, Microcinema, and the Rhetoric of Media Democratization.” *Spectator* 24 (1): 42-52.

Couch, Christina. 2014. “Inside Indie Fund: The Business of Backing.” *Get in Media*. http://getinmedia.com/articles/game-careers/inside-indie-fund-business-backing

Coyle, Diane. 1999. *The Weightless World: Strategies for Managing the Digital Economy*. Cambridge, MA: The MIT Press.

Crecente, Brian. 2012. “Rhode Island’s Reckoning: A Quick History of 38 Studios and Their Deal with Rhode Island.” *Polygon*, May 18. http://www.polygon.com/gaming/2012/5/18/3028766/rhode-islands-reckoning.

Cunningham, Stewart, and Jon Silver. 2014. “Studying Change in Popular Culture: A ‘Middle-Range’ Approach.” In *The Routledge Companion to Global Popular Culture*, edited by Toby Miller, 149-158. New York: Routledge.

Curtin, Michael. 2003. “Media Capital Towards the Study of Spatial Flows.” *International Journal of Cultural Studies* 6 (2): 202–28.

Curtin, Michael, Jennifer Holt, and Kevin Sanson, eds. 2014. *Distribution Revolution: Conversations About the Digital Future of Film and Television.* Oakland, CA: University of California Press.

Curtin, Michael, and John Vanderhoef. 2015. “A Vanishing Piece of the Pi The Globalization of Visual Effects Labor.” *Television & New Media* 16 (3): 219–239.

Curtis, Tom. 2012. “Double Fine’s Record-Breaking Kickstarter Closes with $3.33M Earned.” *Gamasutra*, March 13. http://www.gamasutra.com/view/news/165561/Double_Fines_recordbreaking_Kickstarter_closes_with_333M_earned.php.

Czitrom, Daniel J. 1983. *Media and the American Mind: From Morse to McLuhan*. Chapel Hill: The University of North Carolina Press.

D'Angelo, D. 2014. "Breaking the NES for Shovel Knight." *Gamasutra*, June 25. http://www.gamasutra.com/blogs/DavidDAngelo/20140625/219383/Breaking_the_NES_for_Shovel_Knight.php

Davies, Marsh. 2012. "Steam Greenlight's $100 Entry-fee: Indie Devs Respond." *PC Gamer*, September 4. http://www.pcgamer.com/steam-greenlights-100-entry-fee-indie-devs-respond/

De Kosnik, A. 2013. "Fandom as Free Labor." In *Digital Labor: The Internet as Playground and Factory*, edited by T. Scholz, 98-111. New York: Routledge.

Deleuze, Gilles. 1992. "Postscript on the Societies of Control." *October* 59: 3-7.

Deren, Maya. 1965. "Amateur Versus Professional." *Film Culture* 39 (1): 43-44.

Deuze, Mark. 2007. "Convergence Culture in the Creative Industries." *International Journal of Cultural Studies* 10 (2): 243–63.

Deuze, Mark, Chase Bowen Martin, and Christian Allen. 2007. "The Professional Identity of Gameworkers." *Convergence: The International Journal of Research into New Media Technologies* 13 (4): 335–53.

De Certeau, Michel. 2011. *The Practice of Everyday Life*. Translated by Steven F. Rendall. Third Edition. University of California Press.

deWinter, Jennifer & Carly Kocurek. 2013. "#1reasonwhy Women in the Gaming Industry Matters." *Flow*, Feb. 20. http://flowtv.org/2013/02/1-reason-why-women-in-the-gaming-industry-matters/.

De Peuter, Greig, and Nick Dyer-Witheford. 2005. "A Playful Multitude? Mobilising and Counter-Mobilising Immaterial Game Labour." *Fibreculture* 5 (1).

Donovan, Tristan. 2010. *Replay: The History of Video Games*. East Sussex, Great Britain: Yellow Ant.

Double Fine Adventure. 2012. "Double Fine Adventure." *Kickstarter*, February 8. http://www.kickstarter.com/projects/66710809/double-fine-adventure.

Douglas, Susan J. 2004. *Listening In: Radio And The American Imagination*. Minneapolis: Univ. of Minnesota Press.

Dring, Christopher. 2016. “Curve Digital and Kuju merge to form ‘major new British publisher.” *MCVUK*, Jan. 7. http://www.mcvuk.com/news/read/curve-digital-and-kuju-merge-to-form-major-new-british-publisher/0160974

Duelli Klein, Renate. 1983. “How to Do What We Want to Do: Thoughts About Feminist Methodology.” In *Theories of Women's Studies*, edited by Gloria Bowles & Renate Duelli Klein, 88-105. London: Routledge and Kegan Paul.

Dunn, Gaby. 2015. “Get Rich or Die Vlogging: The Sad Economics of Internet Fame.” *Fusion*, December 14. http://fusion.net/story/244545/famous-and-broke-on-youtube-instagram-social-media/

Dyer-Witheford, Nick, and Greig de Peuter. 2009. *Games of Empire: Global Capitalism and Video Games*. Minneapolis: Univ. of Minnesota Press.

ea_spouse. 2004. “EA: The Human Story.” ea-spouse.livejournal.com/274.html, accessed December 29, 2014.

Edwards, Kate, Johanna Weststar, Wanda Meloni, Celia Pearce, and Marie-Josee Legault. 2014. “2014 IGDA’s Game Developer Satisfaction Survey: Employment Report.” *International Game Developers Association*. http://c.ymcdn.com/sites/www.igda.org/resource/collection/9215B88F-2AA3-4471-B44D-B5D58FF25DC7/IGDA_DSS_2014-Employment_Report.pdf

Ernkvist, Mirko. 2006. “Down Many Times, But Still Playing the Game: Creative Destruction and Industry Crashes in the Early Video Game Industry 1971-1986.” Paper presented at the XIV International Economic History Congress, Helsinki.

ESA. 2015. “2015 Sales, Demographic and Usage Data. Essential Facts About the Computer and Video Game Industry.” *Entertainment Software Association*. http://www.theesa.com/wp-content/uploads/2015/04/ESA-Essential-Facts-2015.pdf

Everett, Anna. 2009. *Digital Diaspora: A Race for Cyberspace*. Albany: Suny Press.

Fisher, Stephanie J., and Alison Harvey. 2013. “Intervention for Inclusivity: Gender Politics and Indie Game Development.” *Loading...* 7 (11): http://journals.sfu.ca/loading/index.php/loading/article/view/118.

Flew, Terry. 2014. “Six Theories of Neoliberalism.” *Thesis Eleven* 122 (1): 49–71.

Florida, Richard. 2005. *Cities and the Creative Class*. New York: Routledge.

Foddy, Bennet. 2014. “State of the Union.” Paper presented at IndieCade East, New York, Feb. 14-16.

Foucault, Michel. 1978. *The History of Sexuality, Vol. 1: An Introduction*. New York: Vintage Books.

Fox, Broderick. 2004. "Rethinking the Amateur: Editor's Introduction." *Spectator* 24 (1): 5-16.

Francis, Bryant. 2014. "The Secret Histories of Indie Games: What was Uncovered at IndieCade." *Gamasutra*, Oct. 13. http://gamasutra.com/view/news/227636/The_secret_histories_of_indie_games_What_was_uncovered_at_IndieCade.php

Frank, Allegra. 2015. "Deux Ex: Mankind Divided 'Augment Your Pre-Order' Program Canceled." *Polygon*, Oct. 1. http://www.polygon.com/2015/10/1/9431791/deus-ex-mankind-divided-augment-pre-order-canceled

Frank, Thomas. 1998. *The Conquest of Cool: Business Culture, Counterculture, and the Rise of Hip Consumerism*. Chicago: University Of Chicago Press.

Fritz, Ben. 2009a. "Activision Sues Over Brutal Legend." *Los Angeles Times*, June 5, B3.

Fritz, Ben. 2009b. "Suit Settled Over Brutal Legend Game." *Los Angeles Times*, August 7, B5.

Galloway, Alexander R. 2006. *Gaming: Essays On Algorithmic Culture*. Minneapolis: Univ. of Minnesota Press.

Galyonkin, Sergey. 2015. "On #Indiepocalypse: What is Really Killing Indie Games." *Medium*, Oct. 1. https://medium.com/steam-spy/on-indiepocalypse-what-is-really-killing-indie-games-3da3c3a1ea76#.bgla63a1g

Gifford, Tyson. 2014. "240 Upcoming Wii U Indie Games." *Nintendo Enthusiast*, April 17. http://nintendoenthusiast.com/article/wii-u-upcoming-games/

Gitlin, Todd. 2000. *Inside Prime Time*. Berkeley: University of California Press.

"Glorious Trainwrecks," 2016. "Homepage." http://www.glorioustrainwrecks.com/

Goldberg, Harold. 2011. *All Your Base Are Belong to Us*: *How Fifty Years of Videogames Conquered Pop Culture*. New York: Three Rivers Press.

Goldberg, Harold. 2013. "Where Indie Game Producers Come out to Play: Annual IndieCade Convention Bucks a Video Game Trend." *New York Times*, Oct. 1. http://www.nytimes.com/2013/10/02/arts/video-games/annual-indiecade-convention-bucks-a-video-game-trend.html?emc=eta1&_r=0

Good, Owen S. 2014. “Indie Studio Polytron Resurfaces with Polytron Partners.” *Polygon*, June 15. http://www.polygon.com/2014/6/15/5812118/polytron-partners-phil-fish-fez

Govil, Nitin. 2013. “Recognizing ‘Industry.’” *Cinema Journal* 53 (2): 172-176.

Gitelman, Lisa. 2008. *Always Already New: Media, History, and the Data of Culture*. Cambridge, MA: The MIT Press.

Graft, Kris. 2009. “Activision Sues Double Fine Over Brutal Legend Release.” *Gamasutra*, June 5. http://www.gamasutra.com/view/news/114872/Activision_Sues_Double_Fine_Over_Brutal_Legend_Release.php.

Grant, Christopher. 2013. “Microsoft Details ‘Initial Phase’ of its ‘Independent Developers @ Xbox’ Self-Publishing Program.” *Polygon*, August 20. http://www.polygon.com/2013/8/20/4638518/independent-developers-at-xbox-self-publishing-xbox-one

Guevara-Villalobos, Orlando. 2011. “Cultures of Independent Game Production: Examining the Relationship Between Community and Labour.” Proceedings from Digital Games Research Association (DiGRA) Conference: Think Design Play, Sept. 14-17, Netherlands.

Guins, Raiford. 2007. “‘May I invade your space?’ Black Technocultural Production, Ephemera, and Video Game Culture.” In *Afro-geeks: Beyond the Digital Divide*, edited by Anna Everett, 113-134. Santa Barbara, CA: Center for Black Studies Press.

Guins, Raiford. 2014. *Game After: A Cultural Study of Video Game Afterlife*. Cambridge, MA: The MIT Press.

Handrahan, Matthew. 2014. “Hotline São Paulo: Meet the indies taking aim at Brazil.” *Games Industry*, November 6. http://www.gamesindustry.biz/articles/2014-11-06-hotline-sao-paulo-meet-the-indies-taking-aim-at-brazil

Haraway, Donna. 1991. “A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century.” In *Simians*, *Cyborgs and Women: The Reinvention of Nature*, 149-181. New York: Routledge.

Harris, Cliff. 2013. “Indies Publishing Indies: Redshirt, 1 Month After Release.” *Indiegames.com*, Dec. 17. http://indiegames.com/2013/12/indies_publishing_indies_redsh.html

Harvey, Alison, and Stephanie Fisher. 2015. “‘Everyone Can Make Games!’: The Post-Feminist Context of Women in Digital Game Production.” *Feminist Media Studies* 15 (4): 576–592.

Harvey, David. 2005. *A Brief History of Neoliberalism.* New York: Oxford University Press.

Heineman, D.S. 2014. "Public Memory and Gamer Identity: Retrogaming as Nostalgia." *Journal of Games Criticism* 1 (1): http://gamescriticism.org/articles/heineman-1-1

Hesmondhalgh, David. 1999. "Indie: The Institutional Politics and Aesthetics of a Popular Music Genre." *Cultural Studies* 13 (1): 34–61.

Hesmondhalgh, David, and Leslie M. Meier. 2014. "Popular Music, Independence and the Concept of the Alternative in Contemporary Capitalism." In *Media Independence: Working with Freedom or Working for Free?*, edited by James Bennett and Niki Strange, 94-116. New York: Routledge.

Hills, M. 2015. "Veronica Mars, Fandom, and the "Affective Economics" of Crowdfunding Poachers." *New Media & Society* 17 (2): 183–197.

Holt, Jennifer, and Alisa Perren, eds. 2009. *Media Industries: History, Theory, and Method*. Malden, MA: Wiley-Blackwell.

Huntemann, Nina B. 2013. "Women in Video Games: The Case of Hardware Production and Promotion." In *Gaming Globally: Production, Play, and Place*, edited by Nina Huntemann and Benjamin Aslinger, 41-58. New York: Palgrave.

Huyssen, A. 2000. "Present Pasts: Media, Politics, Amnesia." *Public Culture* 12 (1): 21-38.

IGDA. 2009. "The IGDA Starts Healthcare Program," *International Game Developers Association*, Nov. 16. http://igdaboard.wordpress.com/2009/11/16/the-igda-starts-healthcare-program/

IGDA, 2015. "Developer Satisfaction Survey (DDS) 2015 Summary Report." *International Game Developers Association*.

inXile Entertainment. 2014. "Wasteland 2." *Kickstarter*. http://www.kickstarter.com/projects/inxile/wasteland-2

Ito, Kenji. 2007. "Possibilities of Non-Commercial Games: The Case of Amateur Role-Playing Games Designers in Japan." In *Worlds in Play: International Perspectives on Digital Games Research*, edited by Suzanna Castell and Jennifer Jenson. New York: Peter Lang International Academic Publishers.

Izushi, Hiro, and Yuko Aoyama. 2006. "Industry Evolution and Cross-Sectoral Skill Transfers: A Comparative Analysis of the Video Game Industry in Japan, the United States, and the United Kingdom." *Environment and Planning A*38 (10): 1843–61.

Jenkins, Henry. 2006. *Convergence Culture: Where Old and New Culture Collide*. New York: New York University Press.

Jenkins, Henry. 2012a, "'Cultural Acupuncture': Fan Activism and the Harry Potter Alliance." *Transformative Works and Cultures* 10: http://journal.transformativeworks.org/index.php/twc/article/view/305/259

Jenkins, Henry. 2012b. *Textual Poachers: Television Fans and Participatory Culture 2nd Edition*. New York: Routledge.

Jenkins, Henry, Sam Ford, and Joshua Green. 2013. *Spreadable Media: Creating Value and Meaning in a Networked Culture*. New York University Press.

Johns, Jennifer. 2006. "Video Games Production Networks: Value Capture, Power Relations and Embeddedness." *Journal of Economic Geography* 6 (2): 151–80.

Johnson, Erik. 2014. "NPD Totals Hurt by Significant PS4, Xbox One Digital Game Sales – Analyst." *MCVUK*, November 17. http://www.mcvuk.com/news/read/npd-totals-hurt-by-significant-ps4-xbox-one-digital-game-sales-analyst/0141460

Kafai, Yasmin B., Carrie Heeter, Jill Denner, and Jennifer Y. Sun, eds. 2008. *Beyond Barbie and Mortal Kombat: New Perspectives on Gender and Gaming*. Cambridge, MA: The MIT Press.

Kareem, Soha. 2015. "The Games That Are Too Underground to Be Indie." *Motherboard*, April 23. http://motherboard.vice.com/read/the-games-that-are-too-underground-to-be-indie.

Keogh, Brendan. 2015. "Between Triple-A, Indie, Casual, and DIY: Sites of Tension in Videogames Cultural Industries." In *The Routledge Companion to the Cultural Industries*, edited by Kate Oakley and Justin O'Connor. New York: Routledge.

Kerr, Aphra. 2006. *The Business and Culture of Digital Games: Gamework and Gameplay*. SAGE Publications Ltd.

Kerr, Chris. 2016. "Video Games Raised over $46 Million on Kickstarter in 2015." *Gamasutra*, Jan. 16. http://www.gamasutra.com/view/news/263584/Video_games_raised_over_46_million_on_Kickstarter_in_2015.php.

Kessler, Andy. 2011. "How Videogames Are Changing the Economy." *Wall Street Journal*, January 3, sec. Opinion. http://www.wsj.com/articles/SB10001424052970203418804576040103609214400.

Kickstarter. 2012. www.kickstarter.com/year/2012

King, Geoff. 2005. *American Independent Cinema*. Bloomington: Indiana University Press.

King, Geoff. 2009. *Indiewood, USA: Where Hollywood Meets Independent Cinema*. New York: I. B. Tauris.

King, Geoff. 2014a. "Differences of King and Degree: Articulation of Independence in American Cinema." In *Media Independence: Working with Freedom or Working for Free?*, edited by James Bennett and Niki Strange , 52-70. New York: Routledge.

King, Geoff. 2014b. *Indie 2.0: Change and Continuity in Contemporary American Indie Film*. New York: Columbia University Press.

Kirkpatrick, Graeme. 2013. *Computer Games and the Social Imaginary*. Polity.

Kirkpatrick, Graeme. 2015. *The Formation of Gaming Culture: UK Gaming Magazines, 1981-1995*. New York: Palgrave Macmillan.

Kleckner, Stephen. 2014. "Nintendo's Wii U Could Become the Next Big Home for Indie Console Developers (Interview)." *Venture Beat*, March 25. http://venturebeat.com/2014/03/25/nintendos-wii-u-could-become-the-next-big-home-for-indie-console-developers-interview/

Klepek, Patrick. 2013. "Crowdfunding's Secret Enemy is Paypal." *Giant Bomb*, Sept. 30. http://www.giantbomb.com/articles/crowdfunding-s-secret-enemy-is-paypal/1100-4743/

Kline, Stephen, Nick Dyer-Witheford, and Greig de Peuter. 2003. *Digital Play: The Interaction of Technology, Culture, and Marketing*. Montréal: McGill-Queen's University Press.

Kocurek, Carly A. 2013. "The Treachery of Pixels: Reconsidering Feelies in an Era of Digital Play." *Journal of Gaming and Virtual Worlds* 5 (3): 295-306.

Kohler, Chris. 2008. "Sept. 24, 1993: Beautiful 'Myst" Users in Era of CD-ROM Gaming." *Wired*, Sept. 24. http://www.wired.com/2008/09/sept-24-1993-beautiful-myst-ushers-in-era-of-cd-rom-gaming/

Kohler, Chris. 2014. "Indie Studios, Not Corporate Giants, are the Future of Videogames." *Wired*, Feb. 20. http://www.wired.com/2014/02/indie-game-renaissance/

Kopas, Merritt. 2016. "*Forrest Ambassador About Page*." http://forestambassador.com/about

Kücklich, Julian. 2005. "Precarious Playbour: Modders and the Digital Games Industry," *Fibre Culture* 5: http://journal.fibreculture.org/issue5/kucklich_print.html

Lee, Mary-Anne. 2014. "We Want Indie Developers to Provide New Experiences for Gamers, says Sony." *Games in Asia*, May 21. https://www.techinasia.com/we-want-indie-developers-to-provide-new-experiences-for-gamers-says-sony

Legault, Marie-Josée and Johanna Weststar. 2012. “More than the Numbers: Independent Analysis of the IGDA 2009 Quality of Life Survey.” *Gameqol.com*.

Legault, Marie-Josée and Johanna Weststar. 2013. “Are Game Developers Standing Up for Their Rights?” *Gamasutra,* Jan. 9. http://www.gamasutra.com/view/feature/184504/are_game_developers_standing_up_.php?print=1.

Legault, Marie-Josée and Johanna Weststar. 2016. “Quality of Life/Quality of Work Discussions.” *GameQOL*. http://www.gameqol.org/quality-of-lifequality-of-work

Lipkin, Nadav. 2013. “Examining Indie’s Independence: The Meaning of ‘Indie’ Games, the Politics of Production, and Mainstream Cooptation.” *Loading...* 7 (11): http://journals.sfu.ca/loading/index.php/loading/article/view/122.

Liu, Alan. 2004. *The Laws of Cool: Knowledge Work and the Culture of Information*. Chicago: Univ. of Chicago Press.

Lobato, Ramon. 2012. *Shadow Economies of Cinema*. London: Palgrave McMillan.

Malaby, Thomas M. 2009. *Making Virtual Worlds: Linden Lab and Second Life*. Cornell University Press.

Martin, Chase Bowen, and Mark Deuze. 2009. “The Independent Production of Culture: A Digital Games Case Study.” *Games and Culture* 4 (3): 276–95.

Maxwell, Richard, and Toby Miller. 2012. *Greening the Media*. New York: Oxford University Press.

McCrea, Christian. 2013. “Web Zero: The Amateur and the Indie-Game Developer.” In *Amateur Media: Social, Cultural and Legal Perspectives*, edited by Dan Hunter, Ramon Lobato, Megan Richardson and Julian Thomas, 178-183. New York: Routledge.

McGonigal, Jane. 2011. *Reality Is Broken: Why Games Make Us Better and How They Can Change the World*. Reprint edition. New York: Penguin Books.

Merton. R. K. 1949. “On Sociological Theories of the Middle Range.” In *Social Theory and Social Structure*, edited by R. K. Merton, 39-53. New York: Simon & Schuster.

Miller, Toby, Nitin Govil, John McMurria, Ting Wang, and Richard Maxwell. 2005. *Global Hollywood: No. 2*. 2nd edition. London: British Film Institute.

Montfort, Nick., and Ian Bogost. 2009. *Racing the Beam: The Atari Video Computer System*. Cambridge, MA: MIT Press.

MPAA. 2013. “The Economic Contribution of the Motion Picture & Television Industry to the United States.” Motion Picture Association of America. http://www.mpaa.org/Resources/92be6469-1d3c-4955-b572-1d3f40f80787.pdf

Neff, Gina. 2012. *Venture Labor: Work and the Burden of Risk in Innovative Industries*. Cambridge: The MIT Press.

Newman, Michael Z. 2009. “Indie Culture: In Pursuit of the Authentic Autonomous Alternative.” *Cinema Journal* 48 (3): 16–34.

Newman, Michael Z. 2011. *Indie: An American Film Culture*. New York: Columbia University Press.

Newman, Michael Z. 2012. “Free TV File-Sharing and the Value of Television.” *Television & New Media* 13 (6): 463-479.

Newman, Michael. 2016. “Indie Film as Indie Culture.” In *Companion to Indie Film*, edited by Geoff King (forthcoming).

Newman, James. 2004. *Videogames*. Routledge, NY.

Newman, James. 2012. *Best Before: Videogames, Supersession, and Obsolescence*. New York: Routledge.

Nichols, Randy. 2014. *The Video Game Business*. London: British Film Institute.

NintendoAge Garage Cart n.d. Available from: http://www.nintendoage.com/index.cfm?FuseAction=Element.View&egID=904&lgID=399

Nooney, Laine. 2014. “When Indie Games Came in Ziploc Bags.” Paper presented at IndieCade East, Museum of the Moving Image, Astoria, NY, Feb. 15.

Nooney, Laine. 2015. “Destined to Repeat Itself: The Rise and Fall of ‘Indie’ Games, 1979-1984.” Paper presented at Extending Play, Rutgers University, New Brunswick, NJ, April 18.

Nutt, Christian. 2011. “Schafer Admits Fantasy of Flatulence on Youth.” *Gamasutra*, February 11. http://www.gamasutra.com/view/feature/134654/schafer_admits_fantasy_of_.php

Nutt, Christian. 2014. “Looking Back at XBLIG: The Do-It-Yourself Console Marketplace.” Gamasutra, Nov. 12. http://www.gamasutra.com/view/news/229941/Looking_back_at_Xbox_Live_Indie_Games_The_doityourself_console_marketplace.php

O'Donnell, Casey. 2010. "The Nintendo Entertainment System and the 10NES Chip: Carving the Video Game Industry in Silicon." *Games and Culture* 6 (1): 83-100.

O'Donnell, Casey. 2014. *Developer's Dilemma: The Secret World of Videogame Creators*. Cambridge, MA: The MIT Press.

Parfitt, Ben. 2014. "Vita Indie Game Mega Pack Detailed." *MCVUK*, Jan. 31. http://www.mcvuk.com/news/read/vita-indie-game-mega-pack-detailed/0127494

Parker, Felan. 2013. "An Art World for Artgames." *Loading...* 7 (11): http://journals.sfu.ca/loading/index.php/loading/article/view/119.

Parks, Lisa. 2007. "Falling Apart: Electronics Salvaging and the Global Media Economy." In *Residual Media*, edited by C.R. Acland, 32-47. Minneapolis: University of Minnesota Press.

Paasonen, S. 2011. "Revisiting Cyberfeminism." *Communications* 36 (3): 335-352.

Payne, Matthew T. 2008. "Playing the Déjà-New: 'Plug it in and Play TV Games' and the Cultural Politics of Classic Gaming." In *Playing the Past: History and Nostalgia in Video Games*, edited by Z. Whalen and L.N. Taylor, 51-68. Nashville: TN: Vanderbilt University Press.

Penley, Constance. 1991. "Brownian Motion: Women, Tactics, and Technology." *Technoculture* 135: 155.

Perren, Alisa. 2013. *Indie, Inc.: Miramax and the Transformation of Hollywood in the 1990s*. Austin: University of Texas Press.

Phin, Christopher. 2014. "Think Retro: How HyperCard Inspired a Generation of Future Developers." *Macworld*, Dec. 24. http://www.macworld.com/article/2862265/think-retro-how-hypercard-inspired-a-generation-of-future-developers.html

Plante, Chris. 2013. "Apogee: The One-Man Online Game Publisher of 1987." *Polygon*, September 27. http://www.polygon.com/features/2013/9/27/4741076/apogee-shareware-1987

Plunkett, Luke. 2015. "The Struggle to Release 'Indie' Games Inside Ubisoft." *Kotaku*, March 12. http://kotaku.com/the-struggle-to-release-indie-games-inside-ubisoft-1690974596

Postigo, Hector. 2003. "From Pong to Planet Quake: Post-Industrial Transitions from Leisure to Work." *Information, Communication & Society* 6 (4): 593–607.

Postigo, Hector. 2010. “Modding to the Big Leagues: Exploring the Space between Modders and the Game Industry.” *First Monday* 15 (5).

Powdermaker, Hortense. 1950. *Hollywood, the Dream Factory: An Anthropologist Looks at the Movie-Makers*. Mansfield Centre: Martino Fine Books.

Prince, Caspian. 2014. “Because You’re Worthless: The Dark Side of Indie PR.” *Puppy Games*, Aug. 18. http://www.puppygames.net/blog/?p=1574

Richtel, Matt. 2007. “Vivendi to Acquire Activision.” *The New York Times*, December 3. http://www.nytimes.com/2007/12/03/technology/03activision.html.

Rose, Mike. 2011a. “Minecraft Hits 3 Million Sales Milestone.” *Gamasutra*, Aug. 5. http://www.gamasutra.com/view/news/126391/Minecraft_Hits_3_Million_Sales_Milestone.php.

Rose, Mike. 2011b. “Uncredited LA Noire Staff Allege ‘Praise-Free’ Working Conditions.” *Gamasutra*, June 21. http://www.gamasutra.com/view/news/35364/Uncredited_LA_Noire_Staff_Allege_PraiseFree_Working_Conditions.php.

Rose, Mike. 2014. “Switch from Work-For-Hire to Indie Studio Kills Two Tribes, but Reboot on the Cards.” *Gamasutra*, Jan. 8. http://www.gamasutra.com/view/news/208219/Switch_from_workforhire_to_indie_studio_kills_Two_Tribes.php?

Rosten, Leo C. 1942. *Hollywood : The Movie Colony, the Movie Makers*. 2nd edition. Harcourt Brace & Company.

Ruffino, Paolo. 2013. “Narratives of Independent Production in Video Game Culture.” *Loading…* 7 (11): 106-121.

Sacco, Dominic. 2014. “Digital Downloads Account for 92% of PC Game Sales.” *PCR Online*, Aug. 18. http://www.pcr-online.biz/news/read/digital-sales-make-up-92-of-global-game-revenues/034551

“Salary Survey,” *Game Developer Magazine*, April 2013. Archived at http://twvideo01.ubm-us.net/o1/vault/GD_Mag_Archives/GDM_April_2013.pdf

Scavvio, Meggan. 2016. “Do You Want to Go to Japan?” *DLC Podcast*. Episode 117. March 14.

Schneider, Nathan. 2015. “5 Ways to Take Back Tech.” *The Nation*, May 27. http://www.thenation.com/article/208057/5-ways-take-back-tech

Scholz, Trebor, ed. 2012. *Digital Labor: The Internet as Playground and Factory*. New York: Routledge.

Schreier, Jason. 2014. "A Game Industry Layoff That Didn't Suck (And Four That Did)." *Kotaku*, Nov. 24. http://kotaku.com/a-game-industry-layoff-that-didnt-suck-and-four-that-d-1660857291

Schreier, Jason. 2015. "The Horrible World Of Video Game Crunch." *Kotaku*, May 15. http://kotaku.com/crunch-time-why-game-developers-work-such-insane-hours-1704744577

Scott, S. 2015. "The Moral Economy of Crowdfunding and the Transformative Capacity of Fan-ancing." *New Media & Society* 17 (2): 167–182.

Scullion, Chris. 2013. "Nintendo Digital Download Sales Hit New Peak." *Computer and Video Games*, Oct. 31. http://www.computerandvideogames.com/436178/nintendo-digital-download-sales-hit-new-peak/?cid=OTC-RSS&attr=CVG-General-RSS

Serrels, Mark. 2015. "When The Game Industry Thinks You're Too Old to Make Video Games." *Kotaku*, May 18. http://kotaku.com/when-the-game-industry-thinks-youre-too-old-1705240167

Shaw, Adrienne. 2009. "Putting the Gay in Games Cultural Production and GLBT Content in Video Games." *Games and Culture* 4 (3): 228–53.

Shaw, Adrienne, Shira Chess, Mia Consalvo, Nina Huntemann, Carol Stabile, and Jenny Stromer-Galley. 2014. "GamerGate and Academia." *ICA Newsletter*, Nov. 4. http://icanewsletter.com/2014/11/04/gamergate-and-academia/.

Shaw, Adrienne. 2015. "#INeedDiverseGames and Why Representation in Games Matters." *University of Minnesota Press Blog,* Jan. 21. http://www.uminnpressblog.com/2015/01/ineeddiversegames-and-why.html

Sherr, Ian and Daisuke Wakabayashi. 2014. "Apple, Google Vie to Offer Exclusive Game Apps." *The Wall Street Journal*, April 20. http://on.wsj.com/1eSnodg

Sinclair, Brendan. 2014a. "EA Not Looking for Big Acquisitions." *Games Industry*, Dec 2. http://www.gamesindustry.biz/articles/2014-12-02-ea-not-looking-for-big-acquisitions

Sinclair, Brendan. 2014b. "Sony: Turnover Helped Foster Indie Love." *Games Industry*, June 27. http://www.gamesindustry.biz/articles/2014-06-27-sony-turnover-helped-foster-indie-love

Sinclair, Brendan. 2014c. “Making an Indie Label in the Era of Self-Publishing.” *Games Industry*, Jan. 28. http://www.gamesindustry.biz/articles/2014-01-28-making-an-indie-label-in-the-era-of-self-publishing

Sinclair, Brendan. 2014d. “The Behemoth Helping Other Indies with Funding, UX, QA.” *Games Industry*, April 3. http://www.gamesindustry.biz/articles/2014-04-03-the-behemoth-helping-other-indies-with-funding-ux-qa

Sinclair, Brendan. 2014e. “Indie Devs Facing ‘Mass Extinction Event’ – Prince.” GamesIndustry, Aug. 22. http://www.gamesindustry.biz/articles/2014-08-22-indie-devs-facing-mass-extinction-event-prince

Sinclair, Brendan. 2015. “Can Salary Gamification Really Work?” *Games Industry*, Aug. 21. http://www.gamesindustry.biz/articles/2015-08-21-can-salary-gamification-really-work

Smith, Andrew J. 2011. “Be Honest, Be Nice: Marketing and PR for Indie Developers.” *Gamasutra*, Dec. 21. http://www.gamasutra.com/view/feature/134941/be_honest_be_nice_marketing_and_.php

Smith, A. N. 2015. “The Backer–Developer Connection: Exploring Crowdfunding’s Influence on Video Game Production.” *New Media & Society* 17 (2): 198–214.

Sotamaa, Olli. 2010. “When the Game is Not Enough: Motivations and Practices Among Computer Game Modding Culture.” *Games and Culture* 5 (3): 239-255.

Stacey, Judith. 1988. “Can There Be a Feminist Ethnography?” *Women’s Studies International Forum* 11 (1): 21–27.

Staiger, Janet. 2013. “Independent of What? Sorting out Differences from Hollywood.” In *American Independent Cinema: Indie, Indiewood and Beyond*, edited by Geoff King, Claire Molloy, and Yannis Tzioumakis, 15-27. New York: Routledge.

Sterling, B., and R. Kadry. 1995. *Dead Media Project*. http://www.deadmedia.org/

Sterne, Jonathan. 2003. *The Audible Past: Cultural Origins of Sound Reproduction*. Durham: Duke University Press Books.

Stone, Allucquère Rosanne. 1996. *The War of Desire and Technology at the Close of the Mechanical Age*. Cambridge, MA: The MIT Press.

Streeter, Thomas. 1996. *Selling the Air: A Critique of the Policy of Commercial Broadcasting in the United States*. Chicago: University of Chicago Press.

Streeter, Thomas. 2010. *The Net Effect: Romanticism, Capitalism, and the Internet*. New York: NYU Press.

Suellentrop, Chris. 2013. "Game Developers Conference Celebrates Indie Creators." *The New York Times*, March 31. http://www.nytimes.com/2013/04/01/arts/video-games/game-developers-conference-celebrates-indie-creators.html

Suominen, J. 2008. "The Past as the Future? Nostalgia and Retrogaming in Digital Culture." *fibreculture* 1 (11): http://eleven.fibreculturejournal.org/fcj-075-the-past-as-the-future-nostalgia-and-retrogaming-in-digital-culture/

Susman, Warren. 2003. *Culture as History: The Transformation of American Society in the Twentieth Century*. Washington, D.C.: Smithsonian Books.

Švelch, Jaroslav. 2013. "Say it with a Computer Game: Hobby Computer Culture and the Non-entertainment Uses of Homebrew Games in the 1980s Czechoslovakia." *Games Studies* 13 (2): http://gamestudies.org/1302/articles/svelch

Švelch, Jaroslav. 2015. "You're Standing in the Living Room: Homebrew Games and Everyday Life in the 1980s Czechoslovakia." Paper presented at Society of Cinema and Media Studies Conference, Montreal, CA.

Swalwell, Melanie. 2007. "The Remembering and the Forgetting of Early Digital Games: From Novelty to Detritus and Back Again." *Journal of Visual Culture* 6 (2): 255-273.

Swalwell, Melanie. 2009. "Towards the Preservation of Local Computer Game Software Challenges, Strategies, Reflections." *Convergence* 15 (3): 263–79.

Sweeney, Tim. 2016. "Microsoft wants to monopolise games development on PC. We must fight it." *The Guardian*, March 4. http://www.theguardian.com/technology/2016/mar/04/microsoft-monopolise-pc-games-development-epic-games-gears-of-war

Szczepanik, P., and P. Vonderau, eds. 2013. *Behind the Screen: Inside European Production Cultures*. 2013 edition. New York: Palgrave Macmillan.

Taco Bell. 2015. "Indie Game Garage." https://www.indiegamegarage.com/#the-program

Takahashi, Dean. 2015. "Even in Siberia, You Can Make a Game with 30M Downloads in Today's Global Game Market." *Venture Beat*, Oct. 27. http://venturebeat.com/2015/10/27/even-siberians-can-make-a-game-with-30m-downloads-in-todays-global-game-market/

Te, Zorine. 2014. "Sacred 3 Designer Says, "Marketing Department of Deep Silver Responsible for the Game's Change in Direction." *Gamespot*, August 17.

http://www.gamespot.com/articles/sacred-3-designer-says-marketing-department-of-dee/1100-6421779/

Terranova, Tiziana. 2000. “Free Labor Producing Culture for the Digital Economy.” *Social Text* 18 (2): 33–58.

Terranova, Tiziana. 2004. *Network Culture: Politics for the Information Age*. New York: Pluto Press.

Thorsen, Tor. 2009. “Brutal Legend Sells 216k, DJ Hero 123K.” *Gamespot*, November 12. http://www.gamespot.com/articles/brutal-legend-sells-216k-dj-hero-123k/1100-6239988/.

Toffler, Alvin. 1980. *The Third Wave: The Classic Study of Tomorrow*. New York: Bantam.

Tryon, Chuck. 2013. *On-Demand Culture: Digital Delivery and the Future of Movies*. New Brunswick, N.J: Rutgers University Press.

Tzioumakis, Yannis. 2012. *Hollywood’s Indies: Classics Divisions, Specialty Labels and the American Film Market*. Edinburgh: Edinburgh University Press.

UberArcade. 2016. “Jet-Paco by The Mojon Twins now available for order.” *NintendoAge Forum*, Feb. 25. http://nintendoage.com/forum/messageview.cfm?StartRow=26&catid=22&threadid=152711

Vanderhoef, John. 2013. “Casual Threats: The Feminization of Casual Video Games.” *Ada* 2: http://adanewmedia.org/2013/06/issue2-vanderhoef/.

Vanderhoef, John, and Michael Curtin. 2016. “The Crunch Heard ‘Round the World: The Global Era of Digital Game Labor.” In *Production Studies The Sequel: Cultural Studies of Global Media Industries*, edited by Miranda Banks, Bridget Conor, and Vicki Mayer, 196-210. New York: Routledge.

Van Dijck J. and Nieborg, D. 2009. “Wikinomics and its Discontents: A Critical Analysis of Web 2.0 Business Manifestos.” *New Media & Society 11* (5): 855–874.

Vogel, Jeff. 2014. “The Indie Bubble is Popping.” *Jeff Vogel Blog*, May 21. http://jeff-vogel.blogspot.de/2014/05/the-indie-bubble-is-popping.html?

Wahlgren, J. 2010. “Features: NES Homebrew is Where the Heart is.” *Nintendo Life*, October 19. http://www.nintendolife.com/news/2010/10/features_nes_homebrew_is_where_the_heart_is

Walker, John. 2012. “Interview: Tim Schafer on Kickstarter, Passion and Dads.” *Rock, Paper, Shotgun*, Feb. 27. https://www.rockpapershotgun.com/2012/02/27/interview-tim-schafer-on-kickstarter-passion-and-dads/

Walker, John. 2013.“Interview: Humble Bundle on Humble Bundles.” *Rock, Paper, Shotgun*, August 23. http://www.rockpapershotgun.com/2013/08/23/interview-humble-bundle-on-humble-bundles/

Wawro, Alex. 2013. “Over $100 Million Pledged to Kickstarter Game Projects in 2013.” *Gamasutra*, Dec. 30. http://www.gamasutra.com/view/news/207868/Over_100_million_pledged_to_Kickstarter_game_projects_in_2013.php.

Weber, M. 2010. “What’s Rarer: A Prototype Action 52 Cart or a Person Who’s Met Vince Perri?” *Video Game Museum*, June 17. http://www.videogamemuseum.com/2010/06/17/whats-rarer-a-prototype-action-52-cart-or-a-person-who-met-vince-perri/

Webster, Andrew. 2014. “Meet Gaming’s Punk Rock Label.” *The Verge*, March 20. http://www.theverge.com/2014/3/20/5530398/devolver-digital-gamings-punk-rock-label

Westecott, Emma. 2013. “Independent Game Development as Craft.” *Loading...* 7 (11): http://journals.sfu.ca/loading/index.php/loading/article/view/124

Whalen, Z., and L.N. Taylor. 2008. “Playing the Past: An Introduction.” In *Playing the Past: History and Nostalgia in Video Games*, edited by Z. Whalen & L.N. Taylor, 1-18. Nashville, TN: Vanderbilt University Press.

Williams, Dmitri. 2002. “Structure and Competition in the U.S. Home Video Game Industry.” *International Journal on Media Management 4* (1): 41–54.

Williams, Raymond. 1961. *The Long Revolution*. Westport, Connecticut: Greenwood Press.

Williams, Raymond. 1981. *Culture.* London: Fontana Paperbacks.

Williams, Raymond. 2003. *Television: Technology and Cultural Form*. New York: Routledge.

Wilson, Jason. 2005. “Indie Rocks! Mapping Independent Video Game Design.” *Media International Australia 115* (1): 109-122.

Wilson, Mike. 2014. “Devolver Digital Just Wants to Help.” *Giant Bomb*, April 11, podcast, http://www.giantbomb.com/podcasts/devolver-digital-just-wants-to-help/1600-829/

Winston, Brian. 1998. *Media Technology and Society: A History From the Telegraph to the Internet*. New York: Routledge.

Wortham, Jenna. 2009. "Dollar by Dollar, Patrons Find Artists on the Web." *The New York Times*, August 24. http://www.nytimes.com/2009/08/25/technology/start-ups/25kick.html.

Wu, Tim. 2011. *The Master Switch: The Rise and Fall of Information Empires*. New York: Vintage.

Ww, Tim. 2014. "Q&A: itch.io Interview with Leaf Corcoran." *Gamesutra*, Dec. 1. http://www.gamasutra.com/blogs/TimWw/20141201/231247/QA_itchio_Interview_with_Leaf_Corcoran.php

Yin-Poole, Wesley. 2010. "Double Fine's Tim Schafer." *Eurogamer*, July 14. http://www.eurogamer.net/articles/double-fines-tim-schafer-develop-interview

Zimmerman, Eric. 2002. "Do Independent Games Exist?" In *The History and Culture of Videogames*, edited by Lucien King, 120-129. London: Laurence King Publishing.

Zimmerman, Eric. 2014. "Manifesto for a Ludic Century." In *The Gameful World: Approaches, Issues, Applications*, edited by Steffen P. Walz and Sebastian Deterding, 19-22. Cambridge, MA: MIT Press.

Zimmermann, Patricia R. 1995. *Reel Families: A Social History of Amateur Film*. Bloomington: Indiana University Press.

Gameography

Action 52 (Active Enterprises 1991)

Action 53 Function 16 Vol. 1 (Infinite NES Lives 2013)

Adventure Construction Set (1984)

Adventure Game Construction Kit (1988)

Antichamber (Bruce 2013)

Armed for Battle (1010 Howe 2014)

Battle Kid: Fortress of Peril (Sivak 2010)

Battle Kid 2: Mountain of Torment (Sivak 2014)

Best of ZZT (Epic 1991)

Braid (Blow 2008)

Broforce (Vlambeer 2015)

Broken Age (Double Fine 2014)

Brutal Legend (Double Fine 2009)

Castle Crashers (Behemoth 2008)

Castlevania (Konami 1986)

Cave Story (Studio Pixel 2004)

Commander Keen (id Software 1990)

Construction Set (1983)

Costume Quest (Double Fine 2010)

Day of the Tentacle (LucasArts 1993)

Delve (McCann 2014)

Democracy 3 (Positech 2013)

Demon in Danger (Martin Maly nd)

Depression Quest (Quinn 2013)

Doom (id Software 1993)

Double Fine Happy Action Theater (2012)

Duck Game (Podbielski 2014)

DuckTales (Capcom 1989)

Duke Nukem 3D (3D Realms 1996)

Dys4ia (Anthropy 2012)

Electronic Sweet n Fun Fortune Teller (Rachel Weil 2013)

E.T. The Extraterrestrial (Atari 1982)

The Fall (Over the Moon 2014)

Full Throttle (LucasArts 1995)

Garry Kitchen's GameMaker (1985)

Gimmick! (Sunsoft 1993)

Gone Home (The Fullbright Company 2013)

Grand Theft Auto IV (Rockstar North 2008)

Gratuitous Space Battles (Positech 2009)

Gratuitous Tank Battles (Positech 2012)

Grim Fandango (LucasArts 1998)

Halo 2600 (Ed Fries 2010)

Half-Life (Valve 1998)

Hotline Miami (Dennaton 2012)

Iron Brigade (Double Fine 2011)

Kentucky Route Zero (Cardboard Computer 2013)

Kroz (Apogee 1987)

Lim (Kopas 2012)

Limbo (Playdead 2010)

Load Runner (Smith 1983)

Luftrausers (Vlambeer 2014)

Mainichi (Brice 2012)

Maniac Mansion (LucasArts 1987)

Megaman (Capcom 1987)

Metroid (Nintendo 1986)

Midway Arcade Treasures (Digital Eclipse 2003)

Minecraft (Mojang 2011)

Monaco: What's Yours is Mine (Pocketwatch 2013)

Myst (Cyan 1993)

Namco Museum Vol. 1 (Namco 1996)

Nighttime Bastards (One Bit Games 2014)

Ninja Gaiden (Tecmo 1988)

No Man's Sky (Hello Games 2016)

Nomolos: Storming the Castle (Gradual Games 2012)

Nuclear Throne (Vlambeer 2015)

Papers, Please (3909 2014)

Phone Story (Molleindustria 2011)

Pier Solar and the Great Architects (Watermelon 2010)

Pong (Atari 1972)

Psychonauts (Double Fine 2005)

Resogun (Housemarque 2013)

Rock Simulator 2014 (Strange Panther Games 2014)

Secret of Monkey Island (LucasArts 1990)

Sesame Street Once Upon a Monster (Double Fine 2011)

Shadow Warrior (Flying Wild Hog 2013)

Shoot-'Em-Up Construction Kit (1987)

Shovel Knight (Yacht Club Games 2014)

The Sims (Electronic Arts, 2000-present)

Stacking (Double Fine 2011)

Streemerz (Arthur Lee 2010)

Sudoku 2007 (Sialagogic 2007)

Super Bat Puncher (Miau 2011)

Super Mario Bros. (Nintendo 1985)

Super Meat Boy (Team Meat 2010)

Terraria (Re-Logic 2011)

Towerfall (Thorson 2013)

Track+Feel II (Rachel Weil 2012)

Ultima Online (Origin Systems 1997)

Wasteland 2 (inXile Entertainment 2014)

The Witness (Blow 2016)

Wolfenstein (id Software 1992)

World of Goo (2D Boy 2008)

Yatagarasu: Attack on Cataclysm (Nyu Media 2014)

ZZT (Epic 1991)

ZZT's Revenge (Epic 1992)

Filmography

Blair Witch Project (Sanchez and Myrick 1999)

Indie Game: The Movie (Pajot and Swirsky 2011)

The Light Bulb Conspiracy (Dannoritzer and Michelson 2010)

Pulp Fiction (Tarantino 1994)

Sex, Lies and Videotape (McDowell 1989)

Tangerine (Baker 2015)