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Press A to Retry: Teaching and Motivating Players Through Failure in Difficult Games

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Press A to Retry: Teaching and Motivating Players Through Failure in Difficult Games

For the degree of  Master of Arts

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Head of the Departmental Graduate Program  Date
PRESS A TO RETRY: TEACHING AND MOTIVATING PLAYERS THROUGH FAILURE IN DIFFICULT GAMES

A Thesis
Submitted to the Faculty
of
Purdue University
by
Anthony James Bushner

In Partial Fulfillment of the Requirements for the Degree of
Master of Arts

August 2015
Purdue University
West Lafayette, Indiana
To my family and the countless other networks that support me in all that I do.
ACKNOWLEDGMENTS

Thank you to my family, for your love, encouragement, and patient kindness; it is through your unwavering support that I owe complete credit for all that I do. Dad, thank you for always pursuing your passions with the utmost tenacity—your inquisitiveness and obsessive need to know all of the things are inherited traits for which I am most grateful. Mom, it is your bottomless well of empathy that has taught me to see the world from a multitude of perspectives, even if they conflict with my own. Sam, thank you for your incredible loyalty and support. But most of all, thank you for always laughing with me—you have taught me to see levity in everything.

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ABSTRACT

Bushner, Anthony J. M.A., Purdue University, August 2015. Press A to Retry: Teaching and Motivating Players Through Failure in Difficult Games. Major Professor: Samantha Blackmon.

As video games have gained greater mainstream popularity over the last couple decades, the utility of difficulty and failure in games has shifted. In an effort to create games that are accessible to an ever-increasing population of potential customers, games have trended toward lower difficulty to accommodate new players. In response to this, independent designers have created games that return to the harsh difficulty of the arcade and console games of the 1980s which also include mechanics that maintain mainstream accessibility through alternative failure punishments. This thesis analyzes the design of commercially successful hyper-difficult games to determine how their mechanics foster player motivation and learning in the face of repeated failure. Ultimately, this thesis asks if the ways in which difficult games mobilize failure to educate and motivate could be applied to other systems and to what ends.

This thesis explores the material and economic constraints that influenced the shifting role of difficulty and failure in video games from classic arcade titles through the modern age of digital distribution platforms. These hyper-difficult games offer an extreme example of how systems that are built from the ground-up to account for user failure.
I argue that the ways in which hyper-difficult games allow players to fail shifts player perspectives on failure from “not-success” to something more positive and fulfilling. Failure can be a form of progression—something to celebrate for the way it forces us to reconsider our approach and the way in which we interpret the world around us.
CHAPTER 1. DESIGNING FAILURE

1.1 Introduction

For my third Christmas, my parents gave me a Nintendo Game Boy after seeing me so enthralled with the bright colors and blinking images of Super Mario Bros. on my aunt and uncle’s Nintendo Entertainment System. Video games in the early 90s were still fairly difficult for adults to master and my fine motor skills left much to be desired. As a result, I quickly became intimately familiar with the GAME OVER screen and the frustration of the sizeable gap between my aspirations and the limits of my abilities. Now, twenty-some odd years later, I do not bat an eye when grappling with intensely difficult games. I have, over time, become desensitized to the outrageous demands a new game places on its player. Doing so has been a social necessity for most of my life: when I was in elementary school, I had a difficult time finding hobbies in common with my peers, save for my love of video games. But gaming communities—even young gaming communities—rarely hone in on just one game for any extended period of time. The nature of discussing games with friends has always been focused on the latest games or the new experiences looming on the horizon. To be a gamer is to always be ready to jump into unfamiliar territory with little else but a controller and a sense of adventure. As a result, I have learned to fail hard, often, and with little attachment to my hope for
achievement. My early exposure to video games has conditioned me to accept failure as an acceptable state of being when learning something new.

For the longest time, I thought that this was a relatively normal response to difficulty and failure: you see an obstacle (even one that seems nigh on insurmountable) and you take your best shot at it. My first semester in the MA program at Purdue, I was having lunch with a few of the members of my cohort, and the conversation drifted toward why we decided to go to graduate school. When it came time for me to answer, my response was that graduate school was like College: Hard Mode, and that really appealed to me. My friends looked at me like I was maybe a bit daft. If my lifetime of gaming has taught me anything, though, it’s that when you are good at something and there is a harder version of that something, it is your duty to beat it. This is, perhaps, a very silly reason to pursue a graduate degree, but sometimes frivolity and silliness make for the best motivators because their value is intrinsic.

Outside of games, failure has been an embodied experience for me in terms of my identity. I identify as bisexual and genderqueer. As a result, I am no stranger to failing at passing as straight or performing masculinity. And while these aspects of my identity haven’t exactly made my life any easier, it has shifted my perspective on what it means to fail. I, of course, always had some recognition that who I was did not exactly jive with who I was expected to be: I have always been soft-spoken, empathetic, and nurturing—personality traits that are at odds with Western conceptions of what it means to be masculine. I would not ever wish to change these personal qualities nor do I see them as something that needs improvement. I am in a state of always already failing, without the expectation or will to “improve” or achieve “success.” Becoming comfortable with who I
am and my existence in a state of opposition to what is expected of me by society has given me an appreciation for failing that is embodied and, ultimately, positive.

I reject the notion that failing is simply something one does on the way to success—a concept with which our society is obsessed. Our education system quantifies success through GPAs and class rankings. Our video game platforms track our success with highly visible gamer scores and achievement lists. We fill our digital social networks with success stories to the point where we have created a whole new term to describe it: “the humblebrag.” The nature of our digital sharing spaces amplifies the illusion that everyone is succeeding at everything all the time. While stories of success can be motivating and inspiring, our culture of success encourages an irrational and damaging fear of failure that hinders learning and creative exploration.

I am intensely curious about this drive to do difficult things—to see a challenge that has a high likelihood of failure and find that internal well of overwhelming optimism that allows one to give it a go. I am interested in how games consistently bring forth this optimism and how they keep players engaged in an activity that sees them fail time and time again. Games like *Hotline Miami* (Devolver Digital), *Super Meat Boy* (Team Meat), *1001 Spikes* (Nicalis), and *Risk of Rain* (Chucklefish Ltd) pit the player against a series of challenges that are frustratingly difficult and are marketed on that very quality. These games and others mark a return to classic form for video games, which were often so difficult that not even their developers knew if they could truly be beaten. Contrary to conventional thought and the steady trend of increasingly easier games in the last few decades, it is because these games are so dauntingly difficult and not in spite of their difficulty that gamers enjoy these games.
1.2 A Brief History of Failure in Games

A not uncommon complaint about many contemporary video games (especially large-budget, triple-A titles) is that they are too easy. And games from the 70s and 80s really were less forgiving of player mistakes than contemporary games. The golden age of arcade games (the beginning of which is generally marked by the North American arcade release of *Space Invaders*) saw a huge swell in the popularity of arcades across the US. These arcade games needed to be easy enough to learn relatively quickly but not so easy that a player could sit at a cabinet for hours on a single quarter. As a result, these games usually gave players a number of lives (usually three), after which they would receive a “game over” and the game ended, which prompted the player to plug in another quarter to continue. Games near the end of the golden age of arcade games became increasingly difficult in a sort of arms race between skilled game players and game designers. Tristan Donovan, author of *Replay: The History of Video Games* observed that “Dedicated video game players thrived on the ever greater challenges thrown at them, but the mainstream audience, upon whom the [arcade] boom was built, found them too demanding...and not much fun” (98).

In the mid-to-late-80s, the home console market made a recovery from the North American video game crash of 1983 due in no small part to the success of the Nintendo Entertainment system’s US launch. Though game companies did not need to worry about players dropping quarters into the machine like they did for arcade games, console games of this era were still difficult for other reasons. Game cartridges held a fairly small amount of data (most NES games were somewhere between 128 and 384 KiB), which meant designers could not pack a lot of content into such a small space. While most
games of this era could conceivably be beaten in a few hours, the learning curve for these games are steep, which helped extend the total time one needed to invest in the game before reaching the end. Due to the lingering shadow of the video game crash years earlier, game companies were hesitant to release too many games at once. The large windows of time between major game releases, coupled with the expense of purchasing a new game meant that there were usually long gaps between game purchases. In order for players to feel like they got their money’s worth from these games, designers had to ensure those games could not be beaten quickly.

Innovations in game cartridge and later in CD-ROM technologies would start a shift away from extracting player time from difficulty and push it toward providing more content to explore. One major innovation was the use of an internal battery in game cartridges that allowed for save data to be stored in the cartridge’s RAM. This let the player to save their progress to the cartridge, which allowed players to break up their time with a game into smaller increments over larger spans of time (as opposed to sitting down to attempt beating a game in one go). This prompts a movement toward games that focus less on game termination failure feedback and concentrates more on life or setback punishment. Failure in these games becomes less severe, as the player has less to lose when they can reset the console and revert back to an old save.

The mid-1990s saw the rise of the CD-ROM as a viable medium for game storage, which vastly increased the potential size of games. During this time, games start to use more setback punishment for failure—forcing a player to restart at the last save point or at a checkpoint instead of making the player start the game over. The larger storage capacity in this generation of games allowed for designers to make their games longer
without having to rely on a steep learning curve and harsh failure penalties to extract extra game length. Since game designers ended up developing more content per game, it started to become an expectation that every player should be able to see all of that content. As a result of these two major factors, games started becoming easier. This trend continued into the early 2000s as game companies moved toward using DVD-ROMs to store games.

The mid-2000s saw a huge widening of the market as game platforms started to open themselves up to more mainstream markets. 2006 saw the release of the Nintendo Wii, which sported a double threat of a low sticker price and innovative motion control scheme that appealed to non-gamers on the basis of its simplicity. In order to keep games appealing to mass audiences, console games during this time became easier so as to stay just difficult enough to be compelling but not so difficult that it would alienate new players who were not as familiar with the tropes and patterns of older games. During this time, Sony’s Blu-Ray discs become the standard storage medium of choice for movies and games with high-fidelity graphics because of the whopping 25GB of space available on single-layer discs. Games with more and more sophisticated graphics and complicated game engines drove the price for games ever higher, which made it necessary for games to appeal to the widest audience possible in order to sell enough units to make up cost. As a result, these games tended to be less difficult in order to avoid alienating less skilled players.

At the same time, smart phones started their rise to ubiquity, beginning with the launch of the iPhone in 2007 and the launch of Android platform in 2008. Mobile gaming became a lucrative market, as the iOS and Android platforms large user base allowed for
cheap or free apps to make not insignificant amounts of money based on ad revenue alone. Controls for phone games tend to be relatively simple, considering touch screens lacked the precision that a dedicated controller afforded. This made games that required precise timing and exact input difficult to play on smart devices (and is the main reason why serious fighting games are practically nonexistent on smart phones). Smartphone users’ stinginess when it came to paying for apps helped bring about the rise of “freemium games”—games that are free to play but require the user to either wait a certain amount of real-world time or pay money to earn more moves or energy. Many of these freemium games required less skill than they did an investment of time and attention, which lends itself well to the freemium model.

1.3 The Rebirth of Difficult Games

Today we see a growing subsection of games that buck against this trend of decreasing difficulty, precipitated by a couple key factors. Digital distribution platforms such as Steam and console-specific online game marketplaces have opened the door to more independent developers to create games without having to deal with the infrastructural challenges of producing and distributing physical copies of their games. These independent developers lack the resources that major game companies have at their disposal, which means we are seeing a rival of genres and styles that were popular in the 80s and 90s, due to the relatively low overhead for developing these games. In addition, because independent developers tend to have relatively small design teams, the projects that they work on tend to be more personal in nature because each person making the game is involved with a larger portion of the work. The rise of bit-style aesthetics, for instance, is one result of these two factors: due to its low-fidelity, bit art is cheaper to
render and its inability to create a “realistic” aesthetic necessitates a more personal, stylistic approach. We are starting to see more games coming from indie developers that are heavily influenced by the games from the 80s and 90s that they played in their childhood (higher difficulty and all).

The second reason we are seeing more difficult games is because online distribution allows games to be produced for niche markets instead of going after the largest demographic possible. The subsection of gamers who felt alienated by the lack of challenge in modern games could be courted by game developers offering games that tested players’ skills. Ad campaigns for games like Dark Souls market the game on its steep learning curve and tendency toward unforgiving punishment for failure. These games develop a reputation among gamers for their challenging nature, which encourages players to share their (often frustrating) experience with others. Online discussion surrounding best practices and strategies and the creation of walkthroughs for these super-challenging games help players build a sense of a collaborative community, as players offer each other hints for how to defeat particularly tricky parts of these difficult games.

Part of the gamer community experience is the gamerscore and achievement list, which allows players to display their accomplishments in particular games on an online public profile for their friends and others to see. Player communities have increasingly shifted to digital spaces as online multiplayer has overtaken local multiplayer games; as a result, these online profiles are the digital equivalent to bragging to one’s friends about one’s latest in-game accomplishments. Holding achievements in über-difficult games gives players gaming capital—a phrase coined by Mia Consalvo that describes the
cultural capital afforded to gamers by their peers based on their ability to play games, their knowledge of secrets, and their ability to “[pass] that information on to others” (18). By giving players outrageously difficult challenges, designers give exceptionally skilled and driven players a goal to strive for that has extrinsic rewards. Visible achievements for beating games like Super Meat Boy or Dark Souls give a player a certain credibility and give players the ability to set themselves apart from the rest. This is especially important to “hardcore” gamers who have been playing games all their lives and feel a certain animosity toward the sudden and widespread interest in what was once a niche hobby. The ability to collect achievements for super difficult games gives those “hardcore” players a way to signal their status to other gamers.

1.4 You Received a Dungeon Map

Over the next few dozen pages, I make the argument that video games offer compelling examples of systems that are explicitly built with failure in mind and that this experience is not only positive and educational, but even enjoyable. In chapter two, I build a theoretical framework for understanding failure—not in terms of an antithesis to success, but as a positive, rewarding, and embodied experience in its own right. In chapter three, I examine the design of a number of hyper-difficult games with mechanics that allow for more instances of player failure without risking the loss of player engagement. Finally, in chapter four, I break down the innovative ways that modern games are fostering player engagement and learning through failure, as well as a few ways we might integrate these design principles into other systems.
CHAPTER 2. FAILURE AS IDENTITY

2.1 Shifting Understandings of Failure

Understanding the function of failure in games requires a more in-depth examination of how we understand and process failure in general. In American culture, failure is not just something one does; it has moral properties to it—it becomes an identity and embodied experience. According to Scott A. Sandage, author of *Born Losers: A History of Failure in America*, "the concept of failure as something that defines your whole identity is a new thing. In terms of language, it doesn't exist at all before the Civil War: you will not find a sentence like 'I feel like a failure' in American writing before 1860" (qtd. in Le Feuvre 88). Instead, “failure” was a verb, not an identity: one made a failure, but that did not make one a failure. And the term was used mostly in economic contexts, usually if one were overly ambitious and invested in the wrong sort of venture. Sandage observes a curious shift in the way contemporary Americans conceive of what it means to be a failure: “If you ask an ordinary American today to describe a person who is a failure, they would say, ‘An underachiever who sort of ambles through life without a real plan and is stagnant’” (qtd. in Le Feuvre 89). The term has undergone a massive shift in how it is applied and has picked up moral connotations along the way.
“Failure” as a label picked up moral implications with the appearance of the first
credit reporting agencies in 1841—a service necessitated by the development of speedier
communication technologies and transportation systems that facilitated business to be
conducted remotely and quickly over large distances. The credit rating system assigned a
value to each person based on their financial assets (which correlated to their ability to
pay back loaned funds) and moral character (which correlated with their likelihood of
paying the money back). Sandage explains how credit rating terms such as “A Number 1”
and second/third-rate have crept into conversational language and taken on connotations
of social worth—which is directly tied to our economic worth. As the two are so deeply
intertwined, one’s economic failure becomes a reflection on that person’s moral character
and social standing. It ceases to be a discrete action and becomes an identity.

Judith Halberstram further elaborates on the concept of failure as identity,
especially in regards to queer identities, in her book The Queer Art of Failure: all too
often, success “equates too easily to specific forms of reproductive maturity combined
with wealth accumulation” in capitalist societies (2). Queer identities exist in opposition
to heteronormative markers of reproductive success, and thus exist in a state of failure by
the very nature of their being. Halberstram offers a view of failure not as the negative
binary to success or a pit stop on the road to success, but as a state of being with its own
unique merits. Failure helps us retain part of our unruly childhood, before societal
pressures mold us into “orderly and predictable adulthoods” (Halberstram 3). The Queer
Art of Failure is, above all, “a book about failing well, failing often, and learning…how
to fail better” (Halberstram 24). It is a celebration of the disruptive power of failure to
provide alternative ways of seeing and interacting with the world.
The texts analyzed in *The Queer Art of Failure* are various pieces of popular culture—from the lesbian drama, *The L Word*, to the children’s cartoon, *Spongebob Squarepants*, to the dark comedy film, *Little Miss Sunshine*. It is *because* of the frivolity and the lack of “seriousness” of these texts that Halberstram is able to apply what she calls “low theory…a kind of theoretical model that flies below the radar, that is assembled from eccentric texts and examples and that refuses to confirm the hierarchies of knowing that maintain the *high* in high theory” (16). By engaging with “unserious” texts, Halberstram resists the arbitrary distinction between high and low culture, and is able to extract meaningful demonstrations of failure in action. In this way, she performs her theory, intentionally failing at choosing the “right” texts that warrant “serious” academic consideration. In finding deep meaning in what appear to be frivolous texts, Halberstram demonstrates the efficacy of failure to produce alternate ways of seeing the world.

By obsessing with success, we tend to stick to tried and true paths. Innovation comes from embracing failure or, at the very least, from an attitude that regards failure not as a lesser end-state but merely another potential outcome with its own merits. For example, standardized tests are really great if your goal is to assess people on their ability to take standardized tests. But rarely in life are answers standardized or predictable. Similarly, in universities, knowledge of canons and established modes of thinking breed scholars that think within the neat boxes of disciplinary lines. Instead, Halberstram argues that we should be encouraging interdisciplinary ways of thinking—ways of looking at situations from multiple and new perspectives, searching for unconventional answers.
That is not to say that everything about failure is good; Halberstram admits that there is a great deal of negative affect that comes part and parcel with failure. However, those negative emotions help us “poke holes in the toxic positivity of contemporary thinking” (3). At the very least, failure is something that is real, tangible, and authentic. When I fail at something, I can start to grasp at the root cause in myself or in the situation that led to that failure. This is refreshing to me, having grown up in a time of constant praise from adults, who all sang positive refrains about everyone being special. The “toxic positivity” to which Halberstram alludes undermines any sense of accomplishment that success may bring, as praise has always come cheaply—and as a result, it seems less real. Failure and admonishment for that failure somehow *feels* real. It is almost always earned. Its motives are not suspect, but it merely *is*. I have always felt that the consequences for failure were, in many ways, more tangible than those of success.

Unfortunately, far too little has been written by scholars regarding failure. In his book *The Success of Failure*, Joel Fisher highlights the need for a study of anaprokopology, or “not success.” Fisher identifies failure as existing on “the edge of the acceptable or possible, a boundary fraught with possibilities,” and sees value in the work that happens at this perimeter (qtd. in Le Feuvre 118). Failure is something deeply personal, something that is completely ours; while we are happy to share our stories of success with others, we are often reticent to share our stories of failure. Unfortunately, our unwillingness to publicly recognize our failures exacerbates the negative affect associated with it, and Fisher claims, “We could even say that an acknowledged failure does not exist” (qtd. in Le Feuvre 121). Because of our tendency to only share stories of success, it creates a toxic illusion that everyone is constantly succeeding all the time, and
we are utterly alone in our own various states of failure—we are in an echo chamber of success stories, with too few opportunities to cut through the overwhelming positivity and share our sundry tales of abject failure. Fisher identifies the scientific method as perhaps the closest our society comes to celebrating failure, since it actively looks for “facts to prove the hypothesis wrong. You look for failure and hope you won’t find it” (qtd. in Le Feuvre 121). However, this is a far cry from actually celebrating failure itself.

2.2 Failure in Games

Games are an intriguing object of study when it comes to failure, as so much of the ludic experience is tied up in it. One does not simply pick up a controller for the first time and waltz through all eight worlds of Super Mario Bros. without losing a few lives. Failure in game worlds is a designed experience, meant to give feedback to new players about the rules of the digital world that they are inhabiting. When a new hazard is introduced in a well-designed game, it is either preceded by a checkpoint or followed by a power-up to help reduce the setback incurred by interacting with that new hazard in the “wrong” way. The failure of the player to interact with the hazard correctly is met with negative feedback, which not only nudges the player toward taking a different approach but encourages the player to get it right next time.

It seems unintuitive to suggest that failing at a game might actually motivate players to keep playing; after all, we do not generally play games with the intention of losing. However, most of playing games is, itself, an exercise in failure; that is, most of our time playing games is spent failing. In Reality is Broken: Why Games Make Us Better and How They Can Change the World, Jane McGonigal claims that “Roughly four times out of five,” the average gamer does not complete the task at hand in a way that satisfies
the game’s win conditions (64). However, this high chance of failure is not
discouraging—in fact, it has the opposite effect: it makes us optimistic that we might
eventually win.

In her chapter on difficulty and failure, McGonigal shares the findings of the
M.I.N.D. Lab team’s study on player’s reactions when playing *Super Monkey Ball 2*
(2002). The researchers found that players reacted with the most powerful positive
emotional response not when they completed a level but when they lost. The failure
animation in *Super Monkey Ball 2* is very dynamic: the ball goes flying off the platform,
the monkey flails around inside the ball, and the ball drops into the void and out of view.
Players are, in a sense, rewarded for their failure with a comical animation. McGonigal
observes that “Positive failure feedback reinforces our sense of control over the game’s
outcome. And a feeling of control in a goal-oriented environment can create a powerful
drive to succeed” (67). The satisfaction that one achieves from failing in *Super Monkey
Ball 2* can also be attributed to player agency; there is a very clear connection between a
player’s actions and the results of those actions. There are no random hazards or
gameplay elements that are outside the player’s control and it is easy to determine cause
and effect relationships due to the simple game mechanics: you tilt the control stick to
make the platform move and the ball rolls in that direction. So players have clear and
predictable consequences for their actions, have direct control over their avatar, and,
when they fail, it is visually interesting and dynamic. This leads to positive player
response to their own failure.
In what is perhaps the most thorough examination of failure in games, *The Art of Failure*, Jesper Juul explores the experience of playing difficult games and its motivating qualities. Juul begins by establishing what he calls the “Paradox of Failure:”

1. We generally avoid failure.
2. We experience failure when playing games.
3. We seek out games, although we will experience something that we normally avoid. (33)

Games are systems that we voluntarily enter into that create a skill deficit. Each game has a unique set of mechanics, controls, and visual language to which a new player must adapt. The first time a player dies in a game, it is telling him/her: “You are not good enough. Try again.” However, there is always the promise that you will get better. Unlike real-world systems, well-designed games always give feedback to the player to signal how the player failed so s/he can keep an eye out for that hazard or try a different approach in the future.

Juul lays out three potential paths to success that players can take when attempting to complete a game. Games of skill are systems in which the player’s ability to manipulate their avatar determines whether they win or lose. Games like *Super Mario Bros.* or Chess are examples of games of skill, as every interaction within the game is under direct control of the player. Since success in games of skill is entirely dependent on the player’s abilities, it is the most discouraging kind of game to lose because the player has no one to blame but themselves for their failure; however, it is also the kind of game in which the most learning can occur, since it forces the player to consider how their actions led to a failure state (74).
Games of chance, such as *Win, Lose, Banana* or Blackjack, ultimately depend on luck to lead the player to a success condition. While there is less of a blow to the ego when one fails a game of chance, it is also more frustrating for the player, since they have no direct control over the outcome of the game. Though some skill is involved in a game like Blackjack, luck still determines the outcome of the game—even the best Blackjack player can lose a hand to a novice player. Games of chance become more skill-oriented the more times the game is played—multiple plays of games of chance allow for patterns of best practice to emerge and mitigates the randomness. Learning still occurs in these games, but it takes a larger number of games before players can distinguish the difference between a fail state brought on by the player’s choice or just sheer bad fortune (74-5).

Games of labor (such as *FarmVille* [2009]) exist on the opposite side of the spectrum from games of skill, in that it is generally difficult to actually lose them by a lack of ability. Advancement or success in games of labor rely upon the player showing up and performing a few tasks; time invested in the game is the largest determining factor of one’s success. In these games, failure “is rather not-having-succeeded-yet and can be downplayed” (Juul 79). While learning still definitely happens in these games, a player is still ultimately limited in how far they can advance in the game by how much time they are willing to invest. In games of labor, players can usually only play so many moves in a given amount of time or are given experience for carrying out actions. Advancement in these games is the result of their avatar gaining abilities or their moves gaining efficacy through a leveling system that rewards time investment (75-6).

It is rare that a game will only feature one kind of path toward victory; most games are a mixture of skill, luck, and labor. *Tetris* (1984), for instance, is a game of skill,
in that intimate knowledge of how pieces fit together and muscle memory will usually carry a player on the path toward victory. However, a player may get wholly unlucky in the pieces they receive, which gives the game some element of chance. Similarly, many contemporary first-person shooter games have incorporated RPG elements into the mechanics which allow players to increase their damage or upgrade to better guns as they invest more time in the game. Collectable card games like Hearthstone (2014) feature elements of all three types of games, as they require a player to know how to make the best exchanges and how to build decks (skill), the order in which cards are drawn can have a huge impact on the game (chance), and players who have spent a lot of time with the game tend to have a larger pool of cards from which they can build their decks (labor).

No matter which paths to victory a game allows the player to take, game designers need to build in ways to give feedback to a player that lets him/her know when they should adopt a different strategy. These failure feedback mechanisms have varied in popularity depending on how punishing the designers want to make their games. In a study measuring these different punishments for failing, Jesper Juul sought to determine what kind of failure feedback was best able to keep users engaged with a game. The four types of failure feedback that Juul observed in games are:

- **Energy Punishment**: loss of energy, bringing the player closer to life punishment
- **Life Punishment**: Loss of a life (or "retry"), bringing the player closer to game termination
- **Game Termination Punishment**: Game over.
- **Setback Punishment**: Having to replay part of the game; losing abilities. ("Fear of Failing" 1-2)
Juul tested the same game with two different types of failure feedback: energy punishment and setback punishment. Curiously enough, he found no real correlation between type of failure feedback and level of user engagement. What he did find was that those who found the game too easy or too hard rated it poorly, while those who found it sufficiently challenging rated it positively. Juul concludes that properly adjusted difficulty has a positive effect on the experience of “flow” in a game but most players generally do not actively seek out ways to make an easy game more difficult.
CHAPTER 3. DIFFICULT GAMES AND PLAYER ENGAGEMENT

3.1 Mitigating Player Failure

As a subset of games are making a return to providing more challenging experiences to their players, the return of difficulty in games does not exactly mirror early arcade and home console experiences. Accessibility is still a major concern for game developers, but the rise of digital distribution platforms for computers, home consoles, and mobile devices allows for the production of games that will fit more niche audiences rather than going for mass appeal. These new difficult games take into consideration the evolution of game design that allows for games to be easy to pick up and play while still maintaining a high level of difficulty to master. In order to keep players engaged in an experience that often ends in a failure-state, game developers have created ludic systems that provide an immense challenge to their players without punishing failure as harshly as classic games had in the past. Part of this movement is to do away with game termination punishment and, in some cases, do away with life punishment altogether. Some of these games allow for players to adjust the difficulty of the game on the fly by providing optional challenges that can be completed to unlock extra content or other perks. The shift toward difficult yet accessible games has even started to transform and reinvigorate one of the oldest
video game genres: the roguelike. In all of these cases, game developers are creating systems that not only provide abundant opportunities for player failure but, in many cases, encourage it.

3.2 Hotline Miami: Rapid-Fire Failure

One game marketed specifically on its difficulty is the 2012 hit Hotline Miami, wherein the player takes on the role of a silent and unnamed assassin caught up in a mysterious organization that sends the protagonist cryptic commands through telephone messages. The player views the action from a top-down perspective, guiding the protagonist through various missions that more or less revolve around killing everything that moves—be it mobsters, attack dogs, or whatever else happens to be perceived by the player as a threat. Most enemies can be taken out with a single well-timed attack, and if the player is careful, s/he can leverage the element of surprise to assassinate enemies before they even notice anything is amiss. However, unlike most games, the player character is just as vulnerable as the enemies, which means a single mistake usually results in death. Failure in Hotline Miami is met with a setback punishment: the player has to restart at the beginning of the level or at the last cleared checkpoint (usually demarcated by stairs or elevator leading up to the next floor).

Failure in Hotline Miami is clearly anticipated by the designers. There is no life punishment or game over punishment to limit the number of attempts one can make at a given level. After reaching a checkpoint, nothing short of quitting the game will force the player to start the level from the beginning. Moreover, the time between a failed attempt and a new one is nearly instantaneous—the player is not forced to watch any cutscenes, nor is there a replay of the player’s death. The camera simply freezes above the
protagonist’s corpse and the mobsters et al. continue to walk around on their semi-randomized patrols. A brief message reads, “YOU’RE DEAD! A TO RESTART!” The exclamation marks add a sense of urgency to the command, suggesting that the player is supposed to make another attempt as soon as possible.

The rapid pace at which one can make new attempts in Hotline Miami lends the game to a play style of rapid iteration. You try, you die, you learn, you try again. Since the penalty for failure is relatively small, the player is free to recklessly experiment with different approaches to particularly tricky areas of the level. Once a reliable method of tackling a particular area of the level is found, it can be repeated in subsequent attempts and eventually becomes second-nature to carry out the requisite button presses—it becomes instinctual, second-nature as a result of its repetition. The instances in which sub-optimal tactics break down are communicated to the player by the swift death of their avatar. At first failure, the player may try the same strategy a few times with the intent of determining whether the error lies in a simple lack of manual dexterity or (in the case of several repeated failures) if a change in tactics is in order. The game provides feedback to the player by doling out life punishments whenever the player makes a mistake; each avatar death signifies a mild admonishment for picking a sub-optimal strategy.

While one could certainly take a more measured, methodical approach to playing Hotline Miami, everything from the game’s aural and visual aesthetic to the metrics on which performance is scored cues the player into the fact that this game is meant to be played quickly. The background music that plays in each level sounds like something from an 1980s underground dance club: fast-paced, seedy, and meant to get the adrenaline pumping. The bit-style graphics distill the setting and characters to their
essential details: the white suits of the mobsters pop against the dull interior decor and they are the only other things that move besides the protagonist. At the end of each level, the player is awarded a letter grade that is determined by several factors including speed, flexibility, mobility, combos, and boldness. “Number of attempts” is not a metric that is scored at any point in the game. While playing through a level slowly and carefully is certainly possible, it will not be met with a favorable grade in the end—instead, the player is urged to run in, improvise, and rely on the instincts that the game helps the player build from the beginning.

3.3 Iterative Attempts and Dynamic Difficulty

Just as developers started shifting toward casual, accessible games around the mid-2000s, independent web game developers pushed back against a perceived trend of games being “too easy.” Flash-based platformers like *I Wanna Be the Guy* (2007) and *N+* (2004) were two of the more popular games freely released to players and played in web browsers. *I Wanna Be the Guy* was an homage to 8-bit platformers, with game sprites and music ripped directly from games such as *Tetris* and *Super Mario Bros* (among others). While it borrowed many tropes from classic games and their level designs, *I Wanna Be the Guy* was notorious for its unconventional, often hidden, hazards which often necessitated a trial-and-error approach and rote memorization to avoid. While every failure in *I Wanna Be the Guy* resulted in a “Game Over” screen, players could restart at the last checkpoint an infinite number of times. *N+* was a more conventional platformer where the player guided a stick-figure ninja through levels filled with explosive mines and tiny platforms. While all hazards were clearly displayed in *N*, the timing and precise input needed to complete later levels made it notoriously difficult to complete.
While long-time gamers engaged with these games to test their mettle and earn bragging rights, the design of these games left them with a rather small audience. Edmund McMillen and Tommy Refenes took these hyper-difficult games as inspiration in their development of the critically and commercially successful *Super Meat Boy* (2010). While it was originally designed to be a small Flash game, like its inspirations, development later shifted to release on the Xbox Live Arcade and, eventually, the Steam digital distribution network for PC. In a postmortem on *Super Meat Boy*, they describe it as a reimagining of *Super Mario Bros.* in their own weird style. Instead of controlling a portly Italian plumber, *Super Meat Boy* finds the player controlling (as the name may suggest) a little boy made of meat; instead of rescuing a princess, Meat Boy seeks to rescue Bandage Girl, who has been kidnapped by Dr. Fetus—a fetus who pilots a robot body. The game consists of six worlds, all with 20 levels (except for the final world, which only has five levels). Each of those levels has a parallel “Dark World” level that maintains the original design of its parallel world, but adds significantly more hazards to avoid. Meat Boy has no health bar, so hitting a hazard results in life/setback punishment, which sends the player back to the beginning of the level. By design, there are no checkpoints in *Super Meat Boy*.

While McMillen and Refenes wanted to maintain the level of difficulty set by *I Wanna Be the Guy* and *N+*, they also wanted to make sure that the design of their game was accessible enough to reach more than just the masochistic niche of hardcore gamers. In an article justifying the difficulty of their game, McMillen writes that *Super Meat Boy* adhered to three very simple design philosophies that helped it remain engaging despite its difficulty. First, all levels were designed to be “small enough for the player to see his
or her goal,” which helps players memorize the location of hazards and minimizes the
time it takes to re-traverse the level after death (McMillen, “Why So Hard?”). Secondly,
Super Meat Boy maintains a constant momentum of action. This is achieved by
minimizing the time between dying and respawning; letting the player progress from one
level to the next without having to access the world map; and keeping cutscenes and
transitions short. This allows the player to maintain the fast-paced nature of the game,
regardless of whether the player fails or succeeds on any given attempt. Finally (and,
perhaps, most interestingly), players are rewarded when they complete a level: a video
shows every attempt the player made at beating the level all at once. This gives the player
a visual representation of their improvement over time, with the beginning of the level
being filled with Meat Boy sprites, each one of them moving on their own course and
dying out at various parts of the level until only one reaches the end. In keeping with the
second design philosophy, this video can be skipped at any time.

Despite its absolutely massive difficulty, Super Meat Boy was met with both
critical and commercial success. In the first year since its release, it sold 600,000 copies
across Xbox Live Arcade and Steam, and received high praise from game review
websites. Part of Super Meat Boy’s success can be attributed to its reliance on well-
established design conventions: true to McMillen and Refene’s vision, Super Meat Boy
plays like a harder, faster, and weirder Super Mario Bros., which is one of the most
recognizable and widely played games. It is also a very easy game to read: unlike I
Wanna Be the Guy, there are no hidden hazards that trick the player into failing. In Super
Meat Boy, if it looks like it will hurt you, it probably will. The difficulty comes not from
deciphering the hazards in the game but from finding the optimal path for dealing with
these hazards. It is important that systems with steep learning curves clearly communicate the hazards within that system, so users are not caught unaware by unexpected negative feedback. Finally, *Super Meat Boy* is an absolutely massive game—including all of the original levels, Dark World levels, warp zones, and secret levels, there are over 300 stages to complete in order to 100% finish the game.

The intensely difficult Dark World levels in *Super Meat Boy* not only help the developers recycle content to make the game longer, but they also provide a system of dynamic difficulty with which players can engage. By keeping the Dark World content optional, *Super Meat Boy* allows less experienced or less invested players feel like they have completed the game in its entirety by beating the easier set of levels only. But the optional Dark World levels give players who are more invested in taking on difficult challenges a way to increase the difficulty of the game while not affecting the main path taken by less skilled players. While McMillen and Refene could have implemented these more difficult levels by creating a “regular” and “hard” mode that could be accessed in a menu or at the beginning of the game, this choice of options can be problematic for new and veteran players alike. Giving players the choice of “easy, medium, or hard,” mode at the beginning of the game asks players to make an assessment about their skill level with absolutely no context for the overall difficulty of the game. Similarly, giving players the option to change the difficulty mode mid-game can also have negative consequences: players are often reluctant to downgrade to an easier difficulty setting because doing so is a blow to the ego—it is admitting that the game is just too difficult for the player. Players are also less likely to turn up the difficulty on a game if it is too easy unless there is some incentive to do so. As game designer David Jaffe observed, game players are essentially
lazy and they “will take the path of least resistance to get from A TO B” (qtd. in Juul, “Fear of Failing”). Unless players start with “hard” mode from the beginning, they are less likely to crank up the difficulty, for fear that they will eventually have to scale things back as the game gets progressively harder in later levels.

Features like Super Meat Boy’s optional “Dark World” content are part of a growing trend in scaling difficulty based on optional content, rather than arbitrary “easy/hard” labels. The newest entries in the Super Mario Bros. franchise for the Nintendo Wii and Wii U achieve dynamic difficulty scaling in a slightly different way: by including hidden collectables in each level, players can scale their experience to their own abilities. A player who reaches the end of a level in Super Mario 3D World, for example, has completed a “medium” difficulty task. If the player is having a particularly hard time and dies five times in a level that they have not yet previously completed, the game offers an optional super-powerful item—the golden leaf. This item makes the player’s avatar invincible and slows the fall time from jumps to make jumping from platform to platform easier. This item is, of course, optional: the player is not compelled to use it and can continue trying to complete the level without the assistance of the golden leaf if the player finds the game appropriately challenging. For more skilled players, each level has three green stars and one ink stamp hidden in each level (usually in difficult to reach areas). Finding these collectables forces the player to fully explore each level and often take a higher level of coordination to reach. If, at some point, the player finds collecting these items is too difficult, they can always focus on completing the level and go back to get the green stars at a later time. Like Super Meat Boy’s “Dark World,”
players can go back to previous levels to take on extra challenges after they have honed their skills completing more “normal” levels.

*Super Mario Bros. Wii* (2009) for the Nintendo Wii features another unique system that helps users who struggle with completing any given level, in the form of the Super Guide. If a player dies eight times in a row, a green block appears on the ninth attempt. If struck, the level restarts and a computer-controlled Luigi will demonstrate how to complete the level (though it will not reveal the location of hidden exits, shortcuts, or collectables). At any time, the player can press the (+) button and resume control of the avatar where the video left off, which allows players to let the computer complete the more challenging parts of the level. While one could theoretically let the Super Guide finish all of the levels, the game does differentiate between levels completed with and without the use of the Super Guide by labeling the level with different colors on the world map. The Super Guide provides an alternative path to victory for players who are simply not willing to put the effort into completing a level on their own, but it can also be used by players who want to complete the level themselves but need something to show them how it should be done. Engaging with the Super Guide itself is even optional, so players who prefer doing things on their own are able to simply ignore the little green box entirely. By allowing players to opt into easier difficulties on a case-by-case basis, they avoid the stigma associated with choosing an easy difficulty while still providing incentive to beat the level on one’s own by raising a visual flag on the overworld screen that indicates the guide was used.
3.4 Checkpoints and Their Discontents

The critically-acclaimed 2014 release by Yacht Club Games, *Shovel Knight*, features a slightly different kind of dynamic difficulty scaling in the form of destructible checkpoints. At six regular intervals throughout any given level, the player can walk past an ornate torch, which lights up to indicate that a checkpoint has been activated. If the player dies, they lose a fraction of their money and respawn at the last checkpoint that was activated, and the player is given the chance to retrieve their lost money (we can call this the “death-cache”) at the location of their previous death. However, if players want a little extra challenge, they can break these checkpoints to keep them inactive in exchange for more money. This allows players who are less skilled to use the checkpoints to make their way through the level without having to start over at the beginning every time they die. More skilled players can seek a larger cash payout at the end of the level by breaking the checkpoints, which makes completing the level far more difficult, since they will have to re-traverse more of the level if they die. The developers at Yacht Club games basically allow *Shovel Knight* players to determine the extremity of the setback punishment for failure in their game. There is an extrinsic incentive for players to take on a greater challenge but it does not punish those players for not taking on the extra difficulty.

In a blog post detailing their checkpoint design, Yacht Club Games designers explain how their checkpoint system evolved. While *Shovel Knight* is designed to look and feel like a game for the Nintendo Entertainment System (even the color palette and sound board were as close to the limitations of the NES as possible), Yacht Club Games wanted to avoid making the game as frustrating to play as other platformers from that era.
For that reason, they decided to add in checkpoints so a player death would not be punished as severely. The checkpoint system started with invisible checkpoints such as the ones we have seen in games like *Mega Man* (1987), which automatically activate without notification when a player reaches a specific part of the level. However, since players could not see where the checkpoints were located, the designers tended to implement too many checkpoints and it made progression far too easy. The next iteration featured checkpoints that players could pay a certain amount of in-game money to use. However, this idea was scrapped for several reasons: first and foremost, the design was unintuitive. It was difficult for new players to figure out how to activate the checkpoint and when they did, the only noticeable effect was that they lost money and gained nothing (the checkpoint’s function is only really apparent later, after the player’s avatar died). Even worse, less skilled players who arguably needed these checkpoints the most were unable to afford to use them, which defeats the purpose of their existence in the first place. The designers at Yacht Club Games finally settled on the current design of checkpoints that automatically activate when touched which could be broken/de-activated for a big payout for greedier/more skilled players.

The change from pay-to-use checkpoints to high-risk-high-reward breakable checkpoints created an elegant system for dynamic difficulty scaling that shifts the way players think about mitigating failure. In the pay-to-use model, players are asked to project into a possible future where they might fail and assess whether it is worth taking a loss of points to mitigate that risk. Players that either cannot pay to use the checkpoint or choose not to use it risk losing more of their money if they die, as they will have to safely traverse more of the level to recover the death-cache than if they had paid a smaller
amount to use the checkpoint in the first place. This is especially frustrating for players that cannot afford to use the checkpoints because they have no choice in the matter. Alternatively, if a player decides to pay into the checkpoint and safely reaches the next one, they feel as if that money was ill-spent and regret their decision, which makes them less likely to want to use the checkpoint feature in the future. The high-risk-high-reward checkpoint system, however, gives players a choice that is easier to assess: by using the checkpoint, it makes recovering money lost due to death a lot easier because there is less ground to cover between the start-point and the death-cache. This is the safer option, and allows players who are more risk-averse to play the game comfortably. Riskier players who want to seek a bigger challenge can choose a bigger payout by cranking up the difficulty of the game. Both choices allow the player to engage with the game’s challenges on their own terms and at no point are players locked into the choice they have made—the ramifications of the decision really only lasts until the next checkpoint is reached.

3.5 Roguelikes: Learning and Transfer

Roguelike games have seen a massive surge in popularity since 2006, around the same time the Nintendo Wii hit the market. The mainstreaming of games and the reduction in difficulty that came with it brought about a counterculture of gamers who sought after difficult games to master. The genre conventions of roguelike games have a special appeal to gamers looking for an extra challenge. Unlike other games that offer levels designed from the ground up to give the user a particular experience, roguelikes offer only a set of rules and mechanics as constants, with the design of each level and the distribution of hazards and items therein being randomized by the the game’s built-in
algorithms. Roguelike players cannot merely memorize levels like they do in most games (jump here, dodge there, mind that hazard!). Instead, skills developed on one run should help make the next run better, as the player learns to read the game for contexts in which past proven strategies could be beneficial in new circumstances. Roguelikes often feature permanent death (permadeath), which punishes failure by making the player lose all gained levels, treasure, or other forms of progress when their avatar dies. Permadeath in roguelike games forces players into a play style that mitigates risk whenever possible, as failure can result in the loss of progress from several hours’ worth of play time.

The term “roguelike” is derived from the 1980 video game Rogue, which featured procedurally-generated dungeons, permanent death, and items with procedurally-generated properties. While Rogue was not the first video game to feature these mechanics (Beneath Apple Manor and DUNGEON preceded Rogue by a couple years and featured similar mechanics), its massive popularity on college campuses made it the game that defined the genre. While many games iterated on the formula established by early roguelikes, the 1990s saw two of the first “roguelites,” or games that borrowed certain conventions from roguelike games (usually randomly generated dungeons and items). The 1991 Sega Genesis game ToeJam and Earl was the first such “roguelite” game. Where most roguelike games are heavily influenced by Dungeons & Dragons, ToeJam and Earl features two rapping aliens that crash land on Earth. Its quirky humor and toned-down, casual-friendly difficulty set the game apart from its roguelike predecessors. Blizzard Entertainment’s Diablo series is perhaps one of the most popular roguelite franchises. While Diablo sticks with the fantasy setting and themes, it is a relatively accessible game for new players to pick up and play, which sets it apart from
traditional roguelikes. Their emphasis on greater accessibility helped establish these games as long-running and popular franchises, even if it meant that these games strayed away from the traditions of classic roguelike games.

Though player failure is met with harsher punishments in roguelikes, death and failure are expected gameplay elements of playing a roguelike. While games that are too punishing risk alienating new players or players with lower skill, the randomness of the level generation and item distribution takes some of the edge off of losing (“the odds were not in my favor this time, so it is not entirely my fault that I lost”). Though roguelikes are definitely games of skill, the chance factor helps salve the sting of failure by displacing some of the cause of failure on the system itself and not the player. Communities of roguelike game players use an acronym to describe moments where the randomness of the game ended their run: Yet Another Annoying Death (YAAD). Players use this acronym to describe failure-states that were the result of circumstances that could not be anticipated or were mostly outside the control of the player. Yet Another Stupid Death (YASD), on the other hand, is used to describe failure-states where the player makes an error; usually, YASD is the result of the player not exercising an appropriate amount of caution or not paying enough attention to their in-game actions. Both of these terms highlight what makes roguelike games unique: their focus on vigilance and risk-mitigation.

Roguelike games tend to foster another avenue for learning about the game’s intricate mechanics: theorycrafting. Modern roguelike games often have dedicated online fan communities that create online resources to aid new and veteran players alike in learning the ins and outs of what are otherwise a set of fairly opaque mechanics.
pages for games like *The Binding of Isaac* (2011) and *Crypt of the Necrodancer* (2015) serve as repositories of information for players to collaboratively share their knowledge about the abundant intricacies of these games. Where players of classic roguelikes needed to rely on their own experience or the experience of those around them to learn the deep mechanics of the game, online communities can now share that knowledge with the player community as a whole. Since these theorycrafting wikis exist as a paratext to the game itself, it is accessible to those that wish to seek out the guidance of their fellow players but can be ignored for those that prefer discovering the intricacies of the game on their own.

The recent piqued interest in roguelike games has resulted in a huge spike in the number of “roguelite” games being released since 2013. Games like *Rogue Legacy* (2013) and *Spelunky* (2008) inject roguelike elements into a more popular and accessible genre (the platformer) in order to make the game more appealing to a wider audience. Where traditional roguelikes are often slower-paced and often feature an intense learning-curve to understand the complexities of its system, the roguelite platformer offers players a similar experience wrapped in a set of mechanics with which they are likely more familiar. Roguelite games maintain the emphasis on exploration and risk-mitigating strategies of the roguelike genre but they present that experience in a way that is accessible to those unfamiliar with those genre conventions.

*Crypt of the Necrodancer* (2015), for example, is a roguelite role-playing-rhythm-game that makes a small but innovative alteration to traditional turn-based RPG mechanics: the duration of each player turn follows the rhythm of the background music. *Necrodancer’s* play space takes place on a two-dimensional grid, and players can move
their avatar one orthogonal space per beat. Enemies in *Necrodancer* follow a similar movement pattern, so both player and enemies move together on each beat. Both player and enemy attacks happen in much the same way as a game of chess: if the player moves onto a space occupied by an enemy, the player attacks said enemy. Conversely, if an enemy moves into the same space as the player, the enemy attacks the player instead.

Unlike conventional roguelike games, *Crypt of the Necrodancer*’s weapons and items have fairly simple effects. Classic roguelikes often feature items that cause a percentile increase or decrease in a variety of different skills and attributes (such as health, attack power, defensive power, magic power, etc). Since these items generally affect more than one attribute, players must spend more time deliberating over how a given item will affect their character’s ability. *Crypt of the Necrodancer* streamlines these decisions by giving the player only two attributes to worry about: attack power and defense. These two ratings are never affected by a percentile increase but by a simple integer value. Players begin with a dagger that deals one damage and any items that increase damage do so by adding a static increase (e.g., Titanium weapons deal +1 damage) or an easy-to-calculate variable increase (e.g., Blood weapons deal 999 damage only if the player has minimum health remaining but otherwise deals no extra damage). Likewise, players start with a defense rating of zero, which does not reduce enemy damage at all; if an item increases the defense rating to one, enemies will deal one less damage, down to a minimum of a half-heart of damage. Because *Crypt of the Necrodancer*’s fast-paced gameplay does not leave the player much time to think out their moves, the designers made the effects of in-game items relatively simple (each item’s description takes up a few words at most). By keeping the battle mechanics and
character statistics as simple as possible, *Crypt of the Necrodancer* is not only more fast-paced than traditional roguelikes, but it is also more accessible to new players who are unused to the genre. While the designers made the game easier for newcomers to pick up and play, the game still retains the intense difficulty and sense of infinite exploration that is the hallmark of the roguelike genre.

One of the defining features that sets these new roguelite games apart from their roguelike predecessors is the addition of long-term upgrades. Where roguelikes tended to punish failure with full game termination (i.e., permadeath), roguelites soften the blow by allowing players to use resources acquired during a play session to purchase various upgrades that carry over into subsequent attempts at beating the game. In *Crypt of the Necrodancer*, these long-term upgrades take the form of health increases and the addition of better/more varied items to the list of potential items distributed to the player in a given level. In *Rogue Legacy*, these upgrades take the form of anything from unlocking new attributes for one’s progeny to better weapons, to increased health, damage, or magic power. *Risk of Rain* (2013) (a platforming roguelite, similar to *Rogue Legacy*) has similar options, with the addition of artifacts that actually change the way levels are constructed: players can activate an artifact to make all enemies tougher or only spawn one type of enemy in a given level. The benefit of including long-term upgrades is that it allows players to see a tangible indication of their progress in the game. While players improve their skills through practicing at a game, it is sometimes difficult to see the incremental progress being made, especially in games with heavy randomization; persistent benefits allow players to see the fruits of their labor while still maintaining the randomness that is the hallmark of the roguelike genre. And while benefits accrued from long-term upgrades
do make the game easier, they rarely make the game easy; even with a fully-upgraded character in *Rogue Legacy*, the game is still a monumental challenge to complete.

In short, roguelike and roguelite games offer players an ever-changing environment to explore and a set of rules that are transparent enough to be inviting but just opaque enough to force players to experiment to discover all of their intricacies. These games are uniquely difficult due to their unpredictability and foster play styles that encourage the mitigation of risk and thoughtful caution. More than any other video game genre, roguelike/roguelite games ask their users to play adaptively: one cannot simply rely on memorizing levels in a roguelike but must instead learn to recognize patterns of situations and the tactics that have proved useful in similar situations. In this way, roguelikes mirror real life more than most game genres. When one makes a mistake, there is no reset button that allows a do-over. Instead, we must live with the consequences of our mistakes and use those moments to inform the way we approach novel situations.

### 3.6 *Rogue Legacy*: Failure as Tutorial

*Rogue Legacy* (2011) is a game about failure, family, and adaptability. Its mechanics and aesthetic are a mashup of old-school two-dimensional platformers, like *Super Mario Bros.* (1985) or *Castlevania* (1986), and roguelike role-playing games (RPGs). As such, the basic platforming mechanics allow the player to run, jump, dash, and attack as they make their way through four regions of increasing difficulty: the main castle, the forest that surrounds it, the high tower, and the castle’s dungeons. Unlike most platformers, however, each player avatar only has one life—upon each life punishment for failure, the player must select one of the previous avatar’s three progeny as the new avatar for their next attempt at beating the game. Each of these offspring has their own unique traits: some of
these traits work to the player’s benefit, some work to the player’s detriment, and others confer a bit of both. The rooms of the castle are procedurally generated with each new attempt, so the player must constantly adapt to new situations and challenges as they make their way through the randomly-generated levels. These randomized elements and permanent death are inspired by slower-paced, turn-based roguelike RPGs.

It is, in fact, impossible to beat Rogue Legacy without many failed attempts. The game’s very design is such that repeated failures are required to both learn and subsequently beat the game. Lead designer Teddy Lee described the tutorial section of Rogue Legacy as a three-part process in a 2014 Gamasutra.com article. The game begins with a tutorial proper, which tells the backstory of Rogue Legacy while simultaneously showing the player the most basic mechanics necessary to understand the game: how to jump, attack, and activate platforms. After this tutorial is completed, the player is brought to the title screen, which signals to the player that the game proper will begin. However, this is a false start: many of the more complicated game mechanics are removed from the first attempt at exploring the castle. After the title screen, the player is brought directly into the castle and given direct control of Sir Lee, a generic knight with no traits. The false start completely bypasses the lineage screen, upgrade screen, and the gold-loss mechanic. The reason for bypassing these more complex parts of the game in the “false start” is to avoid any random traits that would give players a bad first impression for how the game “feels” and avoiding “decision paralysis” by giving the players too many choices without first experiencing the game (Lee). It is only after Sir Lee’s death that the player is given access to the lineage screen and upgrade tree. By incrementally unlocking
more features, the developers are able to “obfuscate the learning process” by stretching out the tutorial beyond the basic “tutorial” level (Lee).

Like Hotline Miami, failure is an integral part of progression in Rogue Legacy. As such, the punishments for failure in the latter are minimized—and, in some ways, failure is even rewarded and necessary. Rogue Legacy does not have a game termination punishment for failure, but instead opts for life and setback punishments to give feedback to players that they must improve their skills and the power of their avatar. This makes Rogue Legacy not just a game of skill but also one of labor. The game is almost impossible to beat without investing some serious time in upgrading the various avatars through building better equipment/runes and investing in the skills tree. The knowledge that progression in the game necessitates dying and trying again takes some of the sting out of failing; the game mechanics themselves take a share of the blame in failure, instead of the player blaming their lack of progression solely on a lack of skill. Rogue Legacy solves one of the issues that super-difficult games face: that is, it is difficult for a player to assess skill increases in any tangible way, and if a player perceives a lack of progression for a long period of time, they are likely to give up on the game. It is, however, very easy for a player to see their progression in terms of acquiring upgrades to their avatar’s stats and equipment. Even a failed attempt at beating Rogue Legacy still allows the player to make progress toward eventually beating the game, as any gold collected in the failed run can be used to make their next avatar better than the last.
CHAPTER 4. MAKING DIFFICULT SYSTEMS MORE ACCESSIBLE

4.1 Easier Games Are More Accessible Games?

The historical shifting toward easier games was driven by a few key factors. Early arcade games needed to be simple enough to learn but difficult to master, in an effort to keep players plugging quarters into the machines. This created an arms race between the best arcade players and game designers that culminated in the alienation of new players and the eventual death of the age of arcades. In addition, the technological constraints of low processing power and limited digital storage capacity meant that games were often shorter; as a result, designers needed to make games difficult to complete in order to extract more play time from their players. As processing and storage capacity increased, so did the budgets needed for creating higher-definition graphics and more designed content. Larger budgets necessitated the sale of more units, which meant games needed to be accessible to a wider audience. In an effort to bring in new gamers, games became easier to make learning games less punishing. With the proliferation of smartphones in the late-2000s and greater access to web-based games, designers sought to capitalize on a market of potential gamers that were previously discouraged from engaging with games due to the price of investing in a dedicated game console.
While making games easier is certainly one way to make them more accessible, I argue that it also makes them less engaging. Jesper Juul’s experimentation with failure punishments in “Fear of Failing” suggests that games that are too easy suffer from the same lack of player engagement as game that are perceived to be too difficult. From a design perspective, however, it is clear why games have erred on the side of ease. The home console market crash in the early eighties was the result of a market flooded with games that were shoddily produced as third-party developers tried to make a quick buck on the rising interest in video games. These games were often poorly designed and difficult to play as a result. To the undiscerning eye of a new gamer, there is little functional difference between a game that is difficult but well-designed and a game that is difficult as a result of its poor design; both feel like they unduly punish the player for their inability to interface correctly with the game.

The recent deluge of successful, super-difficult games coming out of independent development teams is an indication that perhaps games can be both difficult and accessible. The shift that allows this to happen is a change in the way failure is punished in games. Now that designers no longer face the same material constraints as they did in the arcade and early home console era, there is no need to punish players severely in order to extract extra playing time. These new games show that difficulty itself does not strictly make games less accessible; indeed, it is unforgiving punishments for failure that makes games less accessible.

4.2 How to Handle Failure

The games surveyed in chapter three showcased some of the strategies modern game developers are taking to make their games more accessible without sacrificing difficulty.
While these strategies are also being employed in less difficult games, their efficacy is especially notable in these more extreme examples. While my interest in these mechanics stem from a passion for playing and designing games, I see the strategies employed by these designers as potentially fruitful approaches to keep in mind when designing any kind of interactive system that needs to foster user engagement and learning.

Across all of the games surveyed, one of the most important aspects shared in common is the use of failure-feedback to nudge (but not shove) the player in the right direction. While there were often long gaps between the release of games in the 80s and 90s, the video game market has ballooned considerably in the last couple decades, and the proliferation of independent developers and the rising ubiquity of games means the gaps between major game releases are quite small. As a result, few modern games punish player failure with major setbacks such as game termination, as it diminishes the player’s sense of progress. Even in genres that traditionally feature game termination failure states, such as roguelikes, the movement toward elements of long-term progress or customization are picking up speed. Where once games used a limited number of attempts to complete a task as a way to stymy overall progress, modern games are switching to providing players unlimited attempts to complete a task. Games like *Super Meat Boy* provide an unlimited number of lives, which allows players the freedom to try unorthodox paths to victory without having to play conservatively, worrying about the long-term ramifications of “wasting” attempts. Whichever form of failure-feedback a game utilizes, it is important that the game is absolutely clear about why the player failed in that particular instance. Part of that clarity lies in keeping the internal logic of the game rules consistent—failure states should be predictable and avoidable—never random nor
arbitrary. The visual design of a hazard should be such that at a glance it is clear to the player that the object or character is a threat. If possible, players should be introduced to new threats in a way that minimizes punishment: for example, new enemies or hazards should be introduced at the beginning of a level or when the player is guaranteed to have extra health, so that a failure to interact with that hazard correctly does not result in a major setback to the player. Haphazardly introducing new challenges in a way that makes new players lose significant progress is a surefire way to breed resentment for the game, as it violates the unspoken agreement between designer and player that the game will be a “fair” challenge.

In addition to providing players multiple attempts to solve a challenge, the reviewed games leave ample room for players to take several different paths to victory. While the win conditions for these games tend to be relatively straightforward and simple (e.g., reach the end of the level or survive for a given length of time without being hit by an enemy), these games are open-ended enough for the player to define their own strategy for combating the challenges ahead of them. Rarely is there ever one “right” way to complete a challenge, and designers give their players multiple different tools for choosing the path that fits their play style. Roguelite games like Rogue Legacy allow the player to alter the in-game equipment chests and special abilities for subsequent runs, which lets the player tailor the experience to his/her play style. Shovel Knight offers multiple different ways to defeat enemies, from using the shovel for melee attacks to using various spells/projectiles to destroy enemies at a distance. By giving the player several tools that can be used in multiple different contexts, it allows the player to solve the problems the designer throws at them in a way that is both personal and performative.
In a similar vein, it is becoming an increasingly popular design decision to provide opportunities for players to adjust the difficulty of the game by offering multiple optional objectives for experienced players. Adding extra objectives seems at first glance to be a risky design decision, as it is generally true that gamers will often take the path of least resistance to arrive at a win state (even if it is not most entertaining strategy to play).

It is important to note, however, that the games that include challenge objectives tie enticing rewards to these tasks, such as extra gold that allows players to purchase dynamic avatar upgrades or access to secret levels. While it is acceptable for the game to dole out these rewards for long-term cumulative completion of extra objectives, it is far more effective if there is an accumulation of smaller, more immediate rewards to keep players engaged. If the requirements for meeting these long-term goals are perceived to require more time or effort than they are worth and are only rewarded after completing a long list of tasks, the player has less incentive to engage with them. It is also important that these extra challenges never detract from the experience of the core game. Less skilled players who do not wish to engage with extra challenges should still be able to finish the game without feeling like they are missing out on important and necessary content. There is a fine balance to be struck between making the rewards for extra challenges enticing enough to invite players to engage with them but not so enticing that average players will feel like they are being excluded from the experience. Players should always feel as though they are being rewarded for completing difficult tasks, as it keeps them willing to engage with even harder tasks.

One of the most important elements of these difficult games is that they provide some kind of tangible indication that the player is improving, even when they fail. Super
*Meat Boy* does this in a spectacular way by replaying all of the attempts at completing a give level at once as a reward for reaching the goal. By letting player see all of their attempts at beating the level in one animation, it provides a visual representation of their constant improvement. Roguelite games that offer permanent upgrades that can be applied to all future attempts give players a tangible metric for their own improvement. *Rogue Legacy*’s upgrade system allows players to sink the gold collected in the previous run into improvements to their character’s health and magic power, among other things. Even with these improvements, however, players must still increase their skill to succeed in the game, as these upgrades only make playing the game slightly easier. In this way, *Rogue Legacy* gives tangible metrics by which their character improves, which helps players feel more in control of their own success. Improvement at any task is often so incremental that it is difficult to notice, especially if the task at hand is difficult. It is important that games offering significant challenges build in mechanics that highlight user improvement. So much of the experience of playing these games is in the struggle of failure, and it is through that struggle that gamers hone their skills.

If players spend a large majority of their time failing at the long-term goal of beating a difficult game, one way these games foster player motivation is through the use of more immediately-attainable short-term goals. *Rogue Legacy* breaks up the game into four different environments of various difficulties, which allows players to focus on defeating several small chunks of the game. *Super Meat Boy* features very short levels without checkpoints in an effort to avoid forcing players to replay large chunks of a level over and over while they figure out the best way to get to the end. *Crypt of the Necrodancer* breaks the game into four distinct zones that can be practiced on their own.
before the player attempts to beat the whole game in one attempt. By breaking the game into several smaller, more attainable challenges, it makes the long-term goals of the game far less intimidating and allows players to feel as though they are making progress as they take these smaller steps.

One final element of these games that helps salve the sting of failure is something that is not necessarily built into the game itself but exists within the discourse community surrounding the game: the social sharing of failure. On YouTube, “Let’s Play” videos feature gameplay footage narrated by the person playing the game. Videos abound of people struggling with these difficult games and voicing their frustration with the experience. However, instead of submitting a highlight reel of just the most successful attempts, many “Let’s Play” videos feature both the successes and failures of that particular attempt. Providing the failures alongside the successes of one’s engagement with a game serves two major purposes. Firstly, games that are marketed on their difficulty create an audience expectation that when they watch someone play that game, they will see that player fail at least a few times. Secondly, the social sharing of one’s failures helps normalize that failure. That is what makes these difficult games so fascinating: they provide an exigency in which people can collectively share their experience with failure. In fact, the more dynamic and epic the failure, the more it is celebrated for its novelty. Some games have even implemented various mechanics to help promote community sharing to aid with player motivation. Super Mario Bros. U (2012), for instance, provides opportunities for players to draw pictures or write short text messages on their online community system, The Miiverse. Whenever a player beats a level or fails repeatedly on the same level, the player is asked if they want to share a
message with other players. When a player fails at a particular point in a level, the game will bring up posts from other players who have died in that same part of the level. Mid-level Miiverse posts range from players giving hints and tips about how to beat that level to expressions of frustration at a particular difficult hazard. The sharing of these posts provides a sense of solidarity to the player who is stuck on a particular level, letting them know that they are not alone in their struggle.

4.3 Failure Outside Games

While the study of games and their design is important in its own right, the question that I feel looming over this study is the extent to which understanding the role of failure and difficulty within ludic systems has utility in the “real world.” Outside of professional or competitive gaming, there are rarely real stakes attached to games, and games are almost exclusively objects of leisure into which players choose to invest their time. This perceived frivolity could make it difficult to see where the lessons learned from game design could be made relevant in other spaces. However, it is the very frivolity of games that make them ideal objects of study when looking at the effects of failure. There is nothing that forces players to engage with difficult games and nothing to stop a player from quitting a game when it becomes too hard, and yet gamers are more likely to rate their interactions with games more positively when the game presents a significant challenge (Juul, “Fear of Failing”). If gamers are willing to take on extra challenges as a leisure activity, there must be something truly compelling about those systems that can be exported outside of game design.

Some of these ludic elements have creeped into the way I format my feedback in my freshman composition course. One of the reasons why modern games are able to
provide such intense challenges is because they keep failure relatively low-stakes; that is, one can try over and over again until one arrives at the desired result. This allows gamers to try new or unconventional methods to accomplish a specific task—methods that are often unpredictable to the designer in the first place. In the classroom, I try to emulate this model by giving students multiple chances to rewrite assignments that did not live up to their standards. Allowing students repeated attempts at the same problem gives them the freedom to pick approaches that are not necessarily conventional, because the negative effects of a failed attempt are mitigated by the ability to retry the task from a different angle. This approach also allows students to learn by working through approaches that may not work in their own right but allow the student to see the topic form a different perspective.

When games introduce a new mechanic or hazard, they do so in a way that reduces the punishment for failure in order to acclimate the player to the new information. This provides the player with a low-stakes environment in which failing acts as a teaching moment without causing the player undue setback. Some games will present a hazard in a way that merely slows the player down instead of causing a life termination; others will give the player a power-up and then let the new hazard take that power-up away when the player fails to avoid it. By reducing the punishment for failing in a new context, the player learns the negative consequences for his or her actions in a way that does not impact their ability to succeed in the long run. In the classroom, a similar effect can be achieved through the use of low-stakes assignments that challenge the student to take on a new concept with little to no prior practice or experience. The goal of such a task is not to expect the student to arrive at the right answer but to interrogate the process
that led the student to the answer they submitted. By working through the ways in which one incorrectly approaches a given problem, we learn a great deal about our assumptions and thought processes along the way.

One aspect of game design that may not directly translate well to the classroom is that of dynamic difficulty systems. Students, like gamers, tend to follow the path of least resistance, so finding sufficient motivation to engage with more challenging tasks is a constant struggle. Whereas gamers will sometimes engage with more challenging tasks as a way of building gamer capital with their gaming community or online via leaderboards, students rarely engage with curricular content in the same way. However, some games (especially games that do not offer social networking or online leaderboards as part of their design) offer players incentives to complete difficult tasks in the form of perks, upgrades, or extra unlockable content. A similar system could be built into the classroom by providing students incentives for taking on extra challenges, such as extensions to future projects or extra unexcused absences. Such a system could encourage students to put more effort into the beginning of the class in order to make the end of the semester easier. While engaging with such a system would require more forward-thinking than is perhaps typical of the average college freshmen, they could be convinced to take on the extra challenges if the perks were perceived as worth the extra time investment and effort.

Perhaps one of the most difficult elements to import into the classroom setting is the sharing of failure narratives. Considering the heavy social stigma placed on failure, it is hard to imagine circumstances in which students would be willing to share with their peers their experiences with failure as they happen in the classroom. However, we may be able to shift students’ perspectives on failing through assignments that ask them to
share reflections on their own past failures outside the classroom as part of a narrative assignment. A syllabus or unit centered around the benefits of failure could begin to erode some of that social stigma, even if only within that semester’s discourse community. Even if such an assignment or course made students reconsider their own failures in a different light, it may invigorate their classroom struggles with a more positive energy that allows them to push to succeed with greater tenacity.

4.4 Concluding Thoughts

To me, video games represent a safe space in which I can reposition the struggles of life into something more manageable. In games, there is an implicit agreement between the designer and the player that, no matter what hardships lie ahead, I am capable of overcoming them with enough dedication and work. The failures experienced therein are crucial teaching moments that force me to reflect upon my actions; further, I am assured that when I do something wrong, the ludic system will give me solid, reliable feedback that tells me I should be trying something different. Real life offers no such agreement. Real-world systems are ambiguous and amorphous in their feedback; it is often difficult if not impossible to know for certain if one is on the correct path—or even if a correct path exists at all.

But my lifelong obsession with games has also taught me that the dichotomy of success and failure is a false one. Even in my worst failures, there is something to be gained in how the experience transforms me as a person. And in success, I realize that what I yearned for was something even more challenging. I climb a mountain, only to discover the true summit that I was seeking was still on the horizon. Success is fleeting,
ephemeral, and often empty. The struggle, the sweat, the climb up the mountain, and the
stumbles along the way are, for me, the moments in which I feel most alive.
WORKS CITED
WORKS CITED


*Shovel Knight.* Yacht Club Games. 2014. Video game.


