

From the Deceptively Simple to the Pleasurably Complex: The Rise of Cooperative Address in the History of Video Games

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Every change in film history implies a change in its address to the spectator, and each period constructs its spectator in a new way.

—Tom Gunning [1, p. 61]

20.1 INTRODUCTION

In 1981, Nintendo released *Donkey Kong* in the arcades. The average playtime for each life is reported to have been less than 60 seconds. In 1982, Billy Mitchell achieved a high score of 874,200 points. The cabinet promised that “when a certain screen has been cleared, Jumpman saves the lady.” Yet most players could not get past the third level. Expert players could indeed save the lady on level 4, but the scenario repeated itself until the infamous “kill screen” on level 22: Exceeding values in the level-generating algorithms led to a broken play space. The outcome arose out of pure procedural necessity, as *Donkey Kong*—as well as *Space Invaders* (Taito, 1978), *Pac-Man* (Namco, 1980), and many others—did not propose any real “winning conditions.” In fact, this ever-ascending difficulty curve called for a commitment far removed from the fistful of quarters that the typical player was willing to invest; it is more suited to the dedication of a professional athlete.

In 2009, millions of gamers were invited to free *Arkham Asylum* (Rocksteady) from the Joker’s grip. During a short introductory sequence where Batman escorts the famous villain inside the asylum, the player learns to navigate and look around the environment, with no risks of failure whatsoever. Soon enough, the Joker escapes and frees some goons to slow down Batman; this is, of course, the ideal occasion for the game to teach the basic combat mechanics. When they all face their first extraordinary foe, players will not be responsible for Batman’s death even once before receiving textual clues on how to defeat the enemy and will receive additional hints should they die. The numbers that periodically appear on the screen increase with the player’s performance, but they do not represent a score; they restore the dark knight’s health or serve as experience points that the player will spend on new abilities. Periodically, a small symbol rotates in the lower right corner of the screen: It indicates that a checkpoint has been reached. Should they find the challenge too demanding, players can restart the game and select the “Easy” difficulty setting. When they come back to their game, they will see a percentage indicating the overall progression in the game, implying that there is, indeed, a desirable state of affair that they will likely bring about without too much trouble, if they are attentive to the help provided by the software.

Contrast makes things clearer: The way video games address and engage players seems to have changed significantly in the short life of the medium. In this chapter, we propose to explore the signs of this transition through all the circuits of the video game experience, as defined by Kline et al. in their seminal effort [2]. We will review many aspects of the industrial, technological, and cultural history of the medium in order to articulate one central hypothesis: The video game experience has grown to accommodate user participation in a way that is significantly distinct from the overtly competitive attitude that was the norm in the early days and inherited from the classic gaming and sports cultures. To make things perfectly clear, the modes of address we seek to expose should not be understood solely as the direct address that game publishers put forth in peripheral marketing elements but are implicitly inscribed in the course of the immersive experience of the software itself. We do not see this shift from competition to cooperation as a transition between two distinct periods, as the introductory quote from Gunning would seem to imply; rather, it should be read as two paradigms of design. These paradigms have overlapped for the majority of video game history now. However, the development of the cooperative address has been significant in the history of the medium, and it is this rise that will be detailed in the following sections.

Our study runs parallel to the recent academic attention dedicated to the phenomenon of casual gaming, most notably the work of Jesper Juul [3]. However, it is not our goal to refine the definitions of casual games or players or to add to the study of downloadable games or mimetic interfaces. Rather, we will go much further back in history in order to pinpoint the emergence of certain design elements and marketing attitudes that announce the current popularity of casual gaming to some extent.

Before laying out the content of our study, a short overview of the few significant contributions made in the field of video game history will highlight some useful conceptual tools as well as the necessity to facilitate media archeology in the realm

of video game studies in order to write better historical narratives for future generations of game scholars and developers on which to build.

20.2 HISTORY IN QUESTION

The history of video games has been explored through a few distinctive journalistic accounts [4, 5]. Documented with hundreds of interviews, the development of the industry is given center stage in these accounts: history of the early visionaries (Ralph Baer, Nolan Bushnell), major hardware makers (Atari, Sega, Nintendo, Sony), key third-party software companies (Activision, Electronic Arts, Sierra, Blizzard), and so on. In parallel, the constant evolution of the technological aspect attracts a lot of attention; the complexity of this aspect constitutes a major pitfall for historians who are not necessarily familiar with electronic and computer engineering. The marketing shortcuts put forth by console makers are too often taken at face value. The infamous bit wars between Sega, Nintendo, NEC, and Atari at the beginning of the 1990s is a prime example of the misinformation that can infiltrate journalistic and academic accounts. Understanding the inner workings of the hardware and presenting this information in an accessible way is a great challenge, one that has been explored more thoroughly in recent publications. Nick Montfort and Ian Bogost's Platform Studies series (with an initial volume on the Atari 2600 [6] and a more recent entry on the Commodore Amiga computer, written by Jimmy Maher [7]) and Noah Wardrip-Fruin's book [8] on the evolution of operational logics (artificial intelligence and other algorithmic structures) are a few worthy examples.

In *The Video Game Explosion* [9], one of the first historic anthologies written by academics, the industrial and technological aspects are discussed at length and are used as a way to thematically organize the volume. As Wolf noted in his introduction, research on video game history has been limited in part by the difficulty to experience older games and get accurate information about them. In "Video Games Caught Up In History: Accessibility, Teleological Distortion and Other Methodological Issues" [10], I presented at length the various accessibility issues that young video game historians face: scarce institutional penetration, no archives or even accurate game listings from major companies, difficulty of having a first-hand experience with the original systems and software, and emulation discrepancies, just to name a few. The potential pitfalls in this age of accessible information and participatory Web databases are even more numerous, since the Web can become an echo chamber of misinformation. To give but one example, in my entry on CD-ROM games in *The Video Game Explosion* [9], I stated that the FM Towns Marty was one of the first CD-ROM consoles. To this day, many of the dedicated websites where I counter-checked the information still list 1991 as the year of release. However, the Marty came out in 1993 and thus is not the first console to integrate the technology. User Derboo from *hardcoregaming101* recently pointed out all the problems that can surface in order to bring accurate information to online wikis [11].

In the course of a postdoctoral research project, I had the opportunity to access the Cabrinety collection at Stanford Libraries. With more than 15,000 games in their

interactive experience is still limited (with obvious preservation goals in mind). Working in the Cabrinety collection was an invaluable opportunity to get first-hand experience with the peritextual elements of games—boxes, leaflets, manuals, posters, and so on—on a great variety of platforms from the TRS-80 and Commodore PET to popular consoles by Sega or Nintendo. Access to the materiality of games and peritextual elements is essential in order to provide accurate information in scholarly books. Many of the entries written for Greenwood's *Encyclopedia of Video Games* [12] has benefited from this extensive research. Erkki Huhtamo's work—also put forward in *Before the Crash: Early Video Game History* [13]—highlights the necessity of quality media archeology in order to build accurate historical accounts: "While illuminating the past, media-archaeological excavations also help us question the received truths of contemporary culture" [13, p. 32]. Like Huhtamo, we believe that the close reading of media artefacts can help us better understand cultural subtexts. However, game scholars can rarely afford to drop their numerous duties and go to Stanford to become a full-time historian. The promotion of these research collections is one of the major steps academia should undertake. Proper media archeology should always inform the writing of video game history.

In *Before the Crash*, I also presented some of the issues with the journalistic and academic narratives of video game history. Researchers are spending a lot of time and efforts to trace back the technological evolution of the medium. Focusing on technological aspects, it is easy to slip into a celebration of innovation, where the complexity of the phenomenon is ironed out in favor of the familiar progress-laden teleological account. The official Wikipedia page on video game history promotes a technocentric periodization (the famous seven generations of hardware), while many discrepancies can be pointed out in the defining criteria of each generation. For instance, using the bit rating of a system's CPU to distinguish consoles clearly misrepresents the actual complexity of the hardware and its operations. The marketing efforts deployed during the "bit wars" between major hardware companies probably played a part in shaping the community's framing of previous gaming hardware. It is a revisionist attitude that has led to odd pair ups in earlier systems. Moreover, many accounts are written with a clear emphasis on good storytelling, celebrating the rise of the new cultural industry, highlighting key father figures, their qualities, and the numerous personality conflicts that eventually led to striking moments, such as the industrial crash of 1983. Incidentally, the crash is the other major aspect used to organize the narratives and acts as a period marker, along with the arrival of colossal corporations like Sony and Microsoft.

In 2003, a seminal contribution proposed a more complex framework to lay out the history of the medium. In *Digital Play* [2], Stephen Kline, Nick Dyer-Witheford, and Greig de Peuter study the evolution of games on three circuits: technology, industry, and culture. As the authors have pointed out, video games are the perfect cultural object to illustrate the passage to a post-Fordist economy, based on volatile experiences driven by technological innovation. This commodification of play is further accelerated by marketing strategies and synergistic practices between media properties held by large conglomerates. At the same time, this acceleration is the site of a new cultural exchange between creators and audience, and this manifestation of

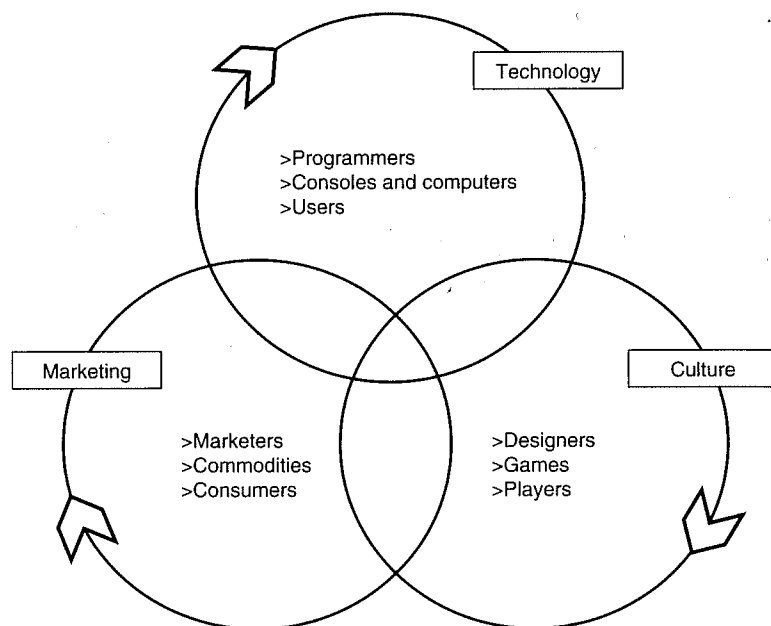


Figure 20.1 Three circuits in interaction [2, p. 53].

previous generations. The circuits are separated for the purpose of analysis but should be discussed separately only with precaution: “The subcircuits are mutually constitutive. In theory, they can be abstracted and described as semiautonomous moments. In practice, they interpenetrate and dynamize each other” [2, p. 58]. As we can see in Figure 20.1, this interconnected framework—wheels within wheels to paraphrase the authors—is the most complete tool to discuss all the aspects of video game history and highlight the multidirectional influence of the three circuits on one another.

For the purpose of this study, we have expanded the three circuits while maintaining the same premises. The marketing aspect should also encompass the industrial context as a whole, with production structures and social spaces of consumption taken into account. On the other hand, we propose to keep the focus of the cultural circuit on the themes and mechanics experienced in the course of game play; after all, the forces that drive the production of technology and the industrial organization could be said to be part of the culture at large. We feel these minor terminology adjustments reflect the original intentions of the scholars. The framework is an essential tool to reform historical narratives, since it invites us to go beyond the obvious technological fascination that drives the medium, beyond the glorification of key father figures who built the industry, into a full exploration of the video game experience and the various agents and objects that determine its evolution.

Throughout the chapter, we will review the evolution of many elements that define the experience of video games, insisting on the interactions between the different circuits. Instead of proposing a clear shift between the two design paradigms

that we presented briefly in the introduction, we will strive to progress more casually through the historical matter, jumping back and forth in time, from one aspect of the industrial context, technological innovations, or game play features while trying to highlight the interplay, mutual influences, and occasional clear causal relationships. In the first part of the chapter, we will review the evolution of the interactive experience from simple yet emergent competitive rule systems to a lengthier and more diverse experience, similar to what Jesper Juul called progression games [14]. We will highlight the technological and industrial aspects that favored this transition. At the same time, we will review how peritextual elements presented and sold the experience, from a very competitive address to a more heroic spiel that corresponds to the rise of certain game play motifs and the Nintendo Generation. While the early arcade game model is characterized by what I call the “pushing hand,” the overarching evolution I want to document saw the creation of a “guiding hand.” In the second part, we will present the rise of various assistance systems—increasingly embedded in video game technology—that seek to help players progress more smoothly in the experience and thus play a major part in the evolution of the game play experience. The systems are so numerous that their study is circumscribed in the second half of the chapter, yet the interactions of these game play features with technological and industrial developments are fundamental in the historical evolution we seek to trace. Both parts will allow us to give a proper overview of the cooperative address that can be seen as one of the major historical movements in the young history of video games.¹

20.3 THREE CIRCUITS IN MOVEMENT

In the mid-1960s, Ralph Baer had the idea to repurpose the television set—a technology owned by most American families at the moment. The initial intended price (approximately \$20) could have kick-started the domestic video game market by six years. However, Magnavox’s high price and poor marketing left the Odyssey in the dark when it came out in 1972. As Van Burnham points out [15, p. 56], selling electronic games to use at home was a completely novel idea at the time. Playing games in arcades and bars, however, had been part of the American lifestyle for many years. An industrial model was already in place, with the infamous Chicago coin-op makers (Bally, Midway, Williams, Gottlieb, Chicago Coin), known exploitation sites, and middlemen who connected the two together collecting money and repairing machines. After decades of popular entertainment in the shapes of jukeboxes, mechanical theaters, novelty games, and the decisive rise with the advent of the flipper in the 1940s, the next big push would come from the video game industry. The arcade was the most logical commercial outlet to bring video games to customers. The coin-op model was better suited to the production of expensive new technology: A popular machine could gather hundreds of quarters in a day, and the revenue stream could be

¹ It would not have been possible to provide such a detailed account without an extended visit to Stanford Libraries and to many institutions such as the Computerspielmuseum in Berlin and the ViGaMus in Rome.

uninterrupted for a long period. Following Bill Pitts and Hugh Tuck's dual cabinet that sought to bring *Spacewar* to the masses, Nolan Bushnell's *Computer Space* (1971) and Atari's *Pong* (1972) started an era of relentless technological innovation that grew strong until the crash of 1983. In spite of the slowing business, arcade games would remain at the technological forefront of gaming culture for many years. At home or in the arcades, the technological novelty has been a constant in video game marketing. The two circuits are strongly tied together, as video game innovations act as an attraction, inciting potential players to spend the money. The arcade context saw the rise of basic game play types that are still used by designers nowadays. As we will see, it also favored a very competitive game experience.

20.3.1 "Easy to Learn, Difficult to Master"

On the box for the home conversion of *Jungle Hunt* (Taito, 1983), one can read: "This three-scenario contest fits the classic formula for successful video games: easy to learn, difficult to master." This design motto is often used as the summarizing definition of classic arcade games. Indeed, these games could be said to be deceptively simple; the simplicity of the operational rules were largely counterbalanced by the difficulty of becoming proficient. The game play on offer can be summed up with a few common game play motifs: Players were asked to "position" abstract shapes in a specific way through other props, testing their reflexes or their wits in similar ways that classic abstract games and sports have been exploring for centuries. Other examples in the action genre required the "neutralization" of abstract (*Breakout*, Atari, 1976) or figurative elements such as saucers (*Computer Space*) or aliens (*Space Invaders*, Taito, 1978).² Other game play logics also became prevalent after the release of seminal titles: racing games (*Gran Trak 10*, Atari, 1974; *Speed Race*, Taito, 1974) and platformers (*Donkey Kong*, Nintendo, 1981; *Jungle King*, Taito, 1982) asked players to master the "navigation" of a course with environmental obstacles or antagonists; *Pac-Man* (Namco, 1980) brought the logic of "collection" to the foreground, with many key titles taking on this type of game play (*Crystal Castles*, Atari, 1983). While the game play can be summed up easily with these simple labels, the actual complexity of the manipulation and the variation of the mechanics—the balance of possibilities and constraints that defined the systems—made games stand out from each other.

As we mentioned in the introduction, many early classics simply did not feature an official ending, but rather featured a progressively steeper difficulty curve through algorithmic modifications from one level to the next. Even when clear endings were established in games such as *Crystal Castles*, reaching the end was an unlikely feat. After level 10, the player was rewarded with this admission of victory: "I give up: you win. You must be a video game whiz," emphasized by a synthetic version of the

² Interestingly, the inspiration for *Space Invaders* was *Breakout*. Both rely on this principle of eliminating elements from the world, but Taito's game expands on it by creating a scenario that fits, whereas its predecessor builds an autonomous abstract world, which perpetuated the game play of traditional flipper games.

triumphant Overture of 1812 by Tchaikovsky. What's more, arcade game developers had to take into account the growing skills of expert players. Noah Falstein—one of the designer for the notoriously difficult *Sinistar* game (Williams, 1982)—notes: "As players got better at them, coin-op games got more challenging in order to keep the coin drop high. . . . I don't actually disagree with this, you have to be careful about profitability, but I do think it contributed to the collapse of the arcade market" (quoted in *Replay* [16, pp. 97–98]). In order to maximize the turn rate at the machines, the difficulty was constantly increasing, and this alienated large crowds from the arcades. The ties between the industrial and cultural circuits here are obvious: The social and commercial contexts were perfectly geared toward expert players feeding on the attraction of displaying one's proficiency.

20.3.2 "Destroy Rock and Saucers for Points": The Pushing Hand

In the logic of arcade exploitation, clear endings were not a necessary feature. Technological constraints also favored simple algorithmic modifications to make the experience last longer in response to the rising competence of players. The kill screens found in *Pac-Man* or *Donkey Kong*—most often created by numerical overloads in the generative algorithms—were obviously not supposed to be reached. Most gamers should not have been expecting to see the final state of arcade games designed with a clear ending either, judging from the taunting attitude displayed in the promotional artefacts (more on this in an upcoming section). Of course, the goal of these games was not to reach a desired ending, but rather to display proficiency at the face of other players. In this sense, the real end was represented by the number 1 position on the high-score tables that games integrated quite early. The concept of a comparative score list is obviously inherited from sporting practices and existed in the arcades long before the advent of video games. Pinball machines and other electromechanical devices displayed the top scores and offered the opportunity for the best players to enter their initials. The score—and the competitive practice it sought to encourage—thus acted as an extrinsic motivator, as opposed to the intrinsic pleasures associated with playing a game.³ Video games that remediated sports—such as *Pong* and many of its offspring—integrated this aspect naturally, but even games based on more elaborate make-believe scenarios—such as *Computer Space*—rated the performance of the players in a clear numerical value; the simulated actions were translated into a score to provide clear meaning in the competitive practice. In 1976, the *Sea Wolf* (Midway) machine displayed the best score on the screen at the end of a play session and during the attract mode, as an incentive for competitive players.

³ Interestingly, extrinsic vs. intrinsic motivation has become a hot topic in industry conventions in the last few years. See: Alexander [17] and Remo [18]. For James Paul Gee, "intrinsic rewards" is an essential aspect in his typology of 36 learning principles [19]. The structures of autotelic activities—activities that are gratifying in themselves—has been studied most notoriously by Mihaly Csikszentmihalyi [20], and many of the design elements that will be discussed in the second part are directly related to the aspects underlined by the researcher.

Many popular arcade cabinets—including *Asteroids* (Atari, 1979), *Tempest* (Atari, 1980), *Pac-Man*, and *Donkey Kong*—integrated scoring tables to indicate which enemies or actions were the most profitable to the player's ego. In 1982, Walter Day launched the Twin Galaxies National Scoreboard—soon to become international—after amassing high scores from dozens of arcades across America. Day organized contests between star players and even between state teams in national competitions. The best scores have been published in the *Guinness Book of World Records*.

Many of the classic arcade titles were converted on home entertainment systems like the Atari VCS, with detailed scoring information provided in the leaflets and manuals. These manuals also commonly included blank pages at the end for players to note their best scores; since it was impossible to write on the storage media used by early consoles, high scores would be lost when the power was shut down. The thrill of competition—against oneself or others—was still promoted outside of the arcade, as many popular titles created specifically for the domestic market made use of the perfectible score as the major goal to be pursued. David Crane's *Pitfall!* (1982) proposed an expansive game world with more than 250 screens, where the player had to collect 32 treasures while avoiding danger. But those riches were not worthy in themselves; the amount appearing on screen referred not to an alleged cash equivalence but to a self-sufficient evaluation of the player's performance that could be perfected up to the mark of 114,000 points. The pervasiveness of this competitive mode of address is nowhere more obvious than in the popular adventure games from Sierra On-Line. Even though these gaming experiences were proposing new intrinsic pleasures, where navigation was complicated by "social exchange" with characters and "tool management," allowing players to revisit and bring to closure classic stories, *King's Quest* (1984), *Space Quest* (1986), and their successors displayed a score on top of the screen, pushing players to perfect their performance over successive playthroughs.

It is well documented that soon after the release of *Asteroids* players found a way to maximize their score by exploiting the game system: By keeping only one small rock on the screen—and thus preventing them from moving to the next, more difficult stage—players could shoot the saucers that respawned, scoring extra points every time. The commercial disaster that represented these "lurkers" was one of the main incentives to integrate the feature that remains, to this day, one of the most obvious signs of the utterly competitive and punitive design paradigm that the arcade games were part of: the "pushing hand." Here, the commercial and experiential aspects run hand in hand. Extradiegetic timers made their debut in many games, clearly indicative of the forthcoming and inevitable—save for one extra quarter—ending to the technological thrills. Evil OTTO in *Berzerk* (1980) could even be seen as a diegetic integration of this pushing hand; the pursuer chased the player's avatar relentlessly and drove the performance forward at an increasing pace. Some games even integrated quite literally this aspect; in *The Simpsons* (Konami, 1990), a giant hand—as a pure index of the game designer's decisive hold on the game experience—appeared with no diegetic justification whatsoever, flashing at an increasing rate along with a ringing bell, and literally pushed players forward if no action was taken. But things could be worse: in *Teenage Mutant Ninja Turtles: Turtles in Time*

(1991)—another classic Konami adaptation—players were killed with a bomb if they didn't obey the "hurry!" sign.

20.3.3 "Can You Beat That?": The Impossible Challenge

From the early days of video game marketing, the industry insisted that the experience could appeal to everybody. As such, marketers were probably influenced by centuries of similar rhetorical practices in the marketing of domestic media devices such as the Stereoscope and the Zoetrope [13]. The promotional images created to sell the Magnavox Odyssey and its successors featured the whole family having fun in front of the TV [15]. An ad for the Atari 2600 rapidly cut between footage of the latest games and an ever-growing crowd; the extended family of two kids—all the way up to the grandparents—took turns to play the technological wonder. Walter Day declared in a 1982 *Prime Access* show on KTVO:

More and more people are discovering video games. In fact they are everywhere, even in the dentists' offices around the United States. And who's playing them in dentists' offices? Mothers and grandmothers and uncles and aunts and cousins and everybody that you can think of seem to have played videogames by now.

While the striking rise of the video game industry attracted everybody's attention, games were catering to a specific demographic: the tech savvy and competitive young adult (two interest fields with clear gender associations at the time; see Kline et al.'s chapter on militarized masculinity [2]), whose proficiency would also contribute to the industry's demise in the early 1980s.

Underneath the official "family fun" coating of the first marketing campaigns, developers specifically addressed expert players in commercials or on the retail packaging by emphasizing the tremendous challenge on offer and even adopted a taunting attitude toward the potential player. Game makers did not refrain from pointing out the difficulty on the arcade cabinets, in instruction manuals, or in the ad campaigns. *Space Invaders'* cabinet instructions bluntly stated that the "game ends when players 'laser bases' are all hit by invaders missiles or when invaders overrun the game." In the TV commercial for Atari's home conversion of Stern's *Berzerk* (1982), a charming old grandmother, dared by her grandson, took on the challenge while the classic Atari jingle relates their adventures; the commercial ended with grandma reversing the roles: "can you beat that?" For the home coming of *Ms. Pac-Man*, the announcer underlined the challenge of the game, with its ultimate maze "so difficult to reach, you might never see it again!" "Getting through your patrol in one piece is almost impossible," assured the manual for the Atari 400/800 port of *Moon Patrol* (Irem, 1983). Trying out his first video game adventure released by Parker Brothers on the Atari VCS, a semiconfident Spiderman asked the viewer: "Is this more action than even Spiderman can handle?" In the leaflet of the popular multiplatform game *River Raid* (1982), Carol Shaw—one of the first female game designers—taunted players overtly: "If you make it back to allied territory, write to me." From one version to the other, Enix's *Impossible Mission* (1984)

flaunted its “never ending challenge” and made it clear that “saving the world wasn’t meant to be easy.” For the rerelease of the notoriously tough *Cauldron* games (Palace Software, 1985–1986) in a single pack, the back cover highlighted the tremendous challenge, “difficult even for experienced players.”⁴

In the context of rapidly evolving technology, the newest audiovisual tricks often act as an incentive to take on the incredible challenges. “Have you got the courage to load up the experience that makes all the other games you’ve played seem prehistoric?” asks the back cover for DMA Design’s *Blood Money* (1989); for the “greatest challenge yet faced by any games player” is even more worthy of being taken on, with the promise of techno-sublime wonders. The lengthy game manual goes much further into this technological celebration. It includes a section written by lead programmer David Jones, who details the technical excellence of his game with unusual depth, specifying the amount of kilobytes used for the assets and the logic of his sprite routines. Throughout all the historical movements we seek to highlight in this chapter, the connection between technology and marketing is one of the most durable aspects of the video game experience and is likely to remain at the forefront as long as the hardware makers push the envelope.

The taunting marketing ploy was prevalent during an era dominated by arcade games and their ports/variations on home consoles. It remains associated with genres that rely on fast hand-eye coordination but has been used outside of that enclave. The convoluted problem solving proposed by textual and graphical adventure games also represented a tremendous challenge at the turn of the 1980s, and a company like Sierra On-Line made certain to underline the skill required to play their games on the box of many early classics: “Each Sierra adventure provides fascination and intrigue, and require several weeks to unravel. So muster up all your wit and perseverance, for this is a Sierra adventure—a challenge to your ingenuity.”

20.3.4 Transition

The causes of the great video game crash of 1983 are multiple and well documented [5, 16]. The increasing difficulty of arcade games that was made necessary by the rising skills of aficionados certainly played its part in alienating players from the venues. The model that gave rise to a billion-dollar industry crumbled, with major arcade locations closing down and regular restaurant or bar owners storing away the cabinets. To get back on its feet, the industry would have to stop pretending its products appealed to everybody while catering to expert players. Some significant changes were made to the typical rhythms of game play; the dominance of the domestic market made it possible to make profit on technology without brushing off customers as fast as possible to get the next quarter. As Huhtamo has pointed out

⁴ The marketing department even added a comedic spin to the taunting attitude: “Hold it right there! REALLY. We mean it. Don’t even think about it. Just put it down, right now. Then turn around and very quietly walk out of the store. No one has to know. Whatever you do, don’t play the sequel!!!!” A yellow sign even stated the following: “For your protection licensed psychiatrists are on duty in every city where this game is sold.”

[13, p. 35], the domestic context has been associated to a safe haven since the rise of the bourgeois Victorian home, where clear social hierarchies are maintained and members of the family are protected from the chaos of the rising industrial life. It would be a stretch to say that this cultural connotation had a direct impact on the development of less punitive game play experiences in video games geared for the domestic market, but the development of these “safer” experiences in such a context is still an interesting parallel. Instead of addressing the most competitive player, designers started to show a more cooperative attitude toward their customers, with the integration of various assistance systems. Marketing strategists started to target a key demographic more specifically: kids. As Kline et al. have shown, the rebirth of the industry depended on the creation of the “Nintendo generation” [2].

20.3.5 “An Ending You Just Have to Experience for Yourself”: The Pleasure of Closure

Throughout the revival of the industry, the evaluation of performance (scoring systems) was still widely implemented in games. Popular arcade hits like *Galaga* (Namco, 1985), *Alien Syndrome* (Sega, 1987), *After Burner* (Sega, 1988), *Ikari Warriors* (SNK, 1986), *Operation Wolf* (Taito, 1989), and *Target Renegade* (Ocean, 1990) were ported to the Nintendo Entertainment System (NES), with a strong emphasis on achieving the highest score. Even the ludification of popular movies—such as *Karate Kid* (Atlus, 1987), and *Home Alone* (Bethesda, 1991)—featured specific scoring rules; enemies and actions were presented in the manuals along with their numerical value. The manual for *Cabal* (Tad Corporation 1990) listed two goals: (1) go through the five levels and (2) rank up as many points as possible. Here, one can sense a change in the way players were addressed; designers decided to put emphasis on the first directive and sometimes brushed off the score feature at the periphery of the experience. In *Rollergames* (Konami, 1990) and *Shatterhand* (Natsume, 1991), the score was displayed at the end of each level, almost as an afterthought, and the presentation of enemies in the manuals did not include any numerical values. In *Batman: The Video Game*, the score appeared only when the game was paused. A high-score page was included in the manual, but it is fair to assume few players actually cared about it. Numbers still played an important role in role-playing games (RPGs), but these numbers referred to experience points accumulated by players throughout their quest and were literally reinvested in the fantasy when the characters leveled up, sometimes with the possibility of “buying” new abilities. Some action games also transformed the score into something diegetic—like the pile of money Scrooge amasses in *Duck Tales* (Capcom, 1989)—and even integrated this accumulation of resources into the mechanics; in *River City Ransom* (Technos, 1989), players were able to buy new fighting moves and many other goodies at various stores located in the game world.

Clearly, the promoted goal of video games at this point not only was about the display of proficiency at the face of others but also involved reaching a desired state of affairs, be it to overcome all of the challenges in the game or to achieve a

about a specific narrative development. In the *Ninja Gaiden* (Tecmo, 1988) manual, a section entitled “Epilogue” stated: “Cinema action ‘Ninja Gaiden’ is depending on your skills to save the world. Can you do it? It is essential that you succeed! Awaiting you is an ending that you just have to experience for yourself.” Or course, reaching the ending of such a notoriously difficult game was a sign of proficiency in itself and conferred bragging rights on the achiever. But the sense of closure that came with defeating adversity—understood in its fictional incarnations as well as in the sense of “beating the game”—was an intrinsic motivator. This is a transition to what Jesper Juul labeled “progression games” (as opposed to emergence games) in his book *Half-Real* [14]. It is an important development from a historical perspective since, as the author notes, the thrill of progressing in a preset course of obstacle has never been as prevalent in the history of games as it is with contemporary video games. By the late 1980s, it is clear that the thrill of progression in a carefully constructed game world became an inherent part of the pleasure provided by a lot of successful video games. Instead of punishing players who were not performing well enough, the hand of the designers gradually sought to help them progress to that desired state. The change of commercial model (arcade vs. domestic market) along with the augmentation of budget, creative personnel, and new technological affordances such as better storage all contributed to this change in the cultural circuit.

Outside of action-oriented games, major genres that became popular in the 1980s—namely, the adventure game and the RPG—were already based on the pleasure of progression through the world and the “tool management” and “resource management” in the case of RPGs. This game play logic would play a significant part in the development of the video game experience and even more so on its marketing.

20.3.6 “Now You’re Playing with Power”: Of the Confident Hero

During the contraction of the American market from 1983 to 1985, few companies were willing to risk investing in a new electronic venture. The makers of *Donkey Kong* saw this as an opportunity to grab the U.S. market. Nintendo had success in Japan with its Famicom console; the launch of its American counterpart revolved on the company’s ability to convince retailers of the NES’s viability and on a marketing strategy that would target kids more specifically. The Nintendo generation was about to emerge.

Like their predecessors, the first wave of hits for the NES often insisted on the incredible challenge on offer. An infamous early TV commercial for the NES featured computer-generated imagery (CGI) renditions of creatures seen in NES games: “We are Nintendo. You cannot beat us,” proclaimed their scary voices. After briefly describing the fictional setting of the games, the box for *Super Mario Bros.* (1985) and *Metroid* (1986) stated that “it won’t be easy.” Nintendo declared *The Legend of Zelda* (1986) to be “the most challenging video game we’ve ever created.” Besides predicting their doom, it was customary to stir up the pride of players with a question: “Do you have what it takes to save the Mushroom Princess?” (*Super Mario*

Bros.); “Will you and Mega Man penetrate the seven separate societies of Dr. Wily and preserve the human race?” (*Mega Man*, Capcom, 1987). Some games showed a little more confidence in the player’s abilities. Embarking in the second *Mega Man* opus (Capcom, 1988), you were told, “Civilization relies on your skill and courage—confident that you, MegaMan, will stand tall in the end.” The reason for this newfound confidence? Power.

In the heyday of arcade games, it was customary to list the actions and weapons afforded in the context of the game. In 1980, a new twist on game play mechanics became a major part of video games: power-ups.⁵ In *Pac-Man*, the power pellet reverses the power dynamics, allowing the first video game star to chase Blinky, Pinky, Inky, and Clyde and score extra points along the way. This feature would soon be put at the forefront of video game marketing. It had been used early in the context of computer RPGs, which rely on the management of weaponry, spells, and power items; *Ultima II* listed as an ultimate feature the opportunity to “grow and wield the most powerful magic known to man.”⁶ The empowerment rhetoric became really prevalent during the rise of the Nintendo empire, starting with the new slogan proposed by the company in 1986: “Now you’re playing with power,” insisted the TV commercials. “Mario’s back!, declared the box for the western version of *Super Mario Bros. 2* (Nintendo, 1988), bigger and badder than ever before!” while *Super Mario Bros. 3*’s back cover highlighted the animal power suits that granted new abilities to the popular hero (Nintendo, 1990). New superheroes emerged, wielding incredible powers. Besides the headliners Mario and Mega Man, players could take on evil as Ryu Hayabusa (*Ninja Gaiden*, Tecmo), who starred in a trilogy where he progressively acquired “exciting new power and weapon” and who remains at the forefront of action games to this day. As *Shatterhand*, “No arms on earth can withstand the power in your hands.” Of course, old timers were invited to the party. For the adaptation of Tim Burton’s *Batman* (Sunsoft, 1989), the caped crusader was “totally new. Totally tough. And he’ll stop at nothing to make sure justice prevails! . . . Incredibly strong. Armed to the teeth.” Similar emphasis became mandatory to bring over comic book and cartoon heroes. For its appearance on the Genesis, Spider-Man was definitely up to the challenge: “He punches and kick with spectacular strength . . . uses his webbing to trap enemies and spin protective shields.”

The taunting attitude is still present in contemporary video game marketing, especially for franchises known to be particularly challenging (*Ninja Gaiden*, Team Ninja; *Dark Souls*, From Software). But it is clear that the game play motif “tool management” and its submechanics have become prevalent in the majority of video game genres. In return, this development in the cultural circuit led to one of the most pervasive marketing spins, first geared toward the childhood power fantasies of the Nintendo generation, now fed to all the generations of gamers.

⁵ The creators of the Videotopia exhibit have underlined the power-up feature as essential to the video game experience. The “game design” interactive display discussed “bonuses and power-ups” on the same level as “rules” and “story.”

⁶ Of course, the acquisition of power is a prevalent thematic feature in many literary traditions; it is one of the essential functions underlined by Vladimir Propp’s classic study of folktales, a corpus with a striking transcultural aspect.

20.4 RISE OF ASSISTANCE SYSTEMS

The clarity of rules is one of the defining factors of games. Part of the pleasure comes from the easy assimilation of a rule system, which is still complex enough to ensure that players will explore the possibilities for a long time and get better at manipulating it along the way. As many scholars have pointed out, one of the advantages of video games over traditional games lies in their procedural nature, which allows the player to learn the rules as the system operates. However, the development of progression in video games complicates this model quite a bit; distinct rules—sometimes unique, as in the case of adventure game puzzles—are introduced progressively throughout the experience, bringing for the player another kind of complexity to master. In his book *What Video Games Have to Teach Us about Learning and Literacy* [19], James Paul Gee underlines the tremendous expertise developed by game developers to facilitate learning in the course of an interactive experience, going as far as to present the medium as an example to be followed in other domains of life. We will now present the historical emergence of various strategies to assist players throughout this learning experience; as we will see, technology has allowed designers to perfect classic assistance strategies and integrate these features more seamlessly into the experience.

20.4.1 “Jump Button Makes Jumpman Jump”: Tutoring the Player

In his book, Gee studies the tutoring strategies of contemporary games such as *System Shock 2* (Irrational Games, 1999) and *Tomb Raider: The Last Revelation* (Core Design, 1999). Even when rule systems were much simpler, clear instructions were provided to potential players. Early arcade games are well known for their deceptive simplicity; the potentially ironic fourth instruction on the *Donkey Kong* cabinet—quoted as the title of this section—is really misleading about the frustrating nature of the experience the player is about to embark on. Newer mechanics introduced by games were prominently displayed on the arcade cabinets, with the clear intention to attract players while teaching them at the same time. The *Galaga* (Namco, 1981) cabinet used a combination of written instructions and color images to detail the introduction in the shoot’em up genre of the “ship recovery” mechanic. Similarly, *Zaxxon* (Sega, 1982) featured bright color images around the joystick to illustrate the altitude variation system and a new deadly possibility: “Avoid crashing into the walls and electronic barriers.” Information redundancy between the printed instructions and the attract mode of the game was also a common tutoring strategy. In *Berzerk*, for instance, the events of the short on-screen demonstration echoed the written instructions. Similarly, *Zaxxon*’s attract mode highlighted the likeliness of crashing if players did not pay close attention to their altitude.

By contrast with the “easy to learn, difficult to master” arcade model, early RPGs published on home computers were sold with the promise of an expansive and varied world to explore. Building on the *Dungeons and Dragons* rule books,

these games included voluminous instruction manuals, densely packed with important information to complete the quest. *Temple of Apshai* (Automated Simulations, 1979) featured more than 200 rooms, 20 different monsters, and 80 types of treasures, all of which were painstakingly described in the 54-page booklet. In SSI’s *Phantasie* (1985), players created a character by making selections out of six races and six professions that determined their rating in five attributes such as strength, charisma, and dexterity; they performed a variety of tasks in many different locales—such as banks, armories, and inns—and faced 80 types of monsters with 100 weapons and more than 50 spells. New entries in the genre competed by increasing these numbers. In doing so, they were mostly catering to players already acquainted with tabletop RPGs; the difficulty curve for early RPGs was quite steep due to the amount of information to assimilate early on, and the openness of the game world meant that players were more likely to face challenges they could not overcome.⁷

In 1985, *Gauntlet* (Atari) took up the challenge of bringing the dungeon crawler experience to the masses in the arcades. In order to integrate some of the complexity seen in the home RPGs, the designers created an elaborate interactive tutorial that spans many levels. Every time a new element was encountered, the game froze to provide textual instructions that were also spoken by a synthetic voice; in level 2, players were instructed to “save potions for later use,” and the introduction of grunts in level 4 also called for specific instructions. In *Thunder Blade* (Sega, 1987), stage 1 was clearly identified as a “flight training” mission; 30 seconds was afforded to players to get acquainted with the control of the ship. Interactive tutorials represent a major development in the rise of the cooperative design paradigm. The overt address to the player is not the most significant aspect here. *Gauntlet* carefully orchestrated the order in which players would encounter new objects or enemies, and this careful pacing is what defines tutorial sections in essence. Earlier games often provided tutorials without any overt address or labeling. For instance, the manual for *Star Warrior* (Automated Simulations, 1980) notes that the first level is ideal for learning the game. Atari’s *I, Robot* (1983) featured written speech balloons coming from the avatar, who addressed its master directly to share important information about the game world. A carefully balanced learning curve has actually become synonymous with good game design. Lowering the difficulty curve early on sends a cooperative signal; it echoes Gee’s “Psychosocial Moratorium” principle, where learners “can take risks in a space where real-world consequences are lowered” [19, p. 222].

20.4.2 Get a Clue

The first iteration of hints in the video game experience was an extension of the tutoring aspect. The main incentive to provide additional tips and strategies was the

⁷ On the other hand, it is fascinating that many RPG developers felt they should include a “what is a role-playing game” section at the beginning of the game manuals (*Temple of Apshai*; *Alternate Reality: The City*, Paradise Programming, 1985). *Dragon Warrior*’s manual (Chunsoft, 1989) included a section entitled “how to start off on the right foot (what you must do at the beginning of the game),” and the lengthy *Final Fantasy* (Square, 1987) also included a similar section.

introduction of new mechanics and objects; the overall challenge was increased by the newfound diversity and balanced by giving additional information from the get go. Many hints pertained to the possibility of maximizing one's score but could also provide valuable game play strategies: the *Battlezone* (Atari, 1980) cabinet recommended to "use the radar; keep moving; use the cubes and pyramids as shields; listen for the enemy's tank shots," while *Tempest* players received hints such as "Hold the fire button down for continuous fire" and "Use the 'SUPERZAPPER' to zap all enemies on the tube." The manuals or leaflets that came with the home conversions of popular arcade titles usually proposed additional tips and strategies. Whereas *Joust*'s instructions in the arcades cryptically mentioned "Beware of 'undefeatable?' pterodactyl" (Williams Electronics, 1982), the leaflet for the Atari VCS port (1983) clearly stated that "The pterodactyl will try to eat you, but if you hit it directly on its beak you'll destroy it and earn bonus points." It also featured a hint section stating the best game play strategies. The complexity associated with computer RPGs also prompted game designers to provide additional guidance in the form of hints. Throughout its 30 pages, the manual for SSI's *Phantasia* (1985) is scattered with "playing hints" under appropriate sections.

Here, again, the major development came with the creation of hint systems built into the software itself to assist the player. Many early examples can be found, but the actual help or guidance on offer was often quite limited. The box for Mike Edwards' *Realm of Impossibility* (1983) highlighted its "on-line" help screens that the player could call up by pressing the space bar. Many of Scott Adams' games in the *Adventure* series invited users to type "HELP" on the text parser in the hope of receiving some assistance. Adventure games enjoyed mass popularity in spite of their challenge; the vastness of the semantic associations that could be imagined by the player, in conjunction with the sometimes whimsical solutions to the puzzles, often stopped the flow of progression in Lucasfilm or Sierra On-Line games. Surprisingly, extensive hint systems did not emerge until the 1990s. In *Under a Killing Moon* (Access Software, 1994), players had access to location-specific hints that they could "buy" with points. *Roberta Williams's Phantasmagoria* (Sierra On-Line, 1995) also featured a hint system that was less cautious; inquiries led to perfect solutions and thus ran the risk of spoiling the fun. The reception of the game was not as stellar as previous Sierra games. Part of the adventure aficionados felt that the experience was not challenging enough; "in a bid to lure the new game player, Sierra had made the game's puzzles too easy" [21, p. 155]. Industrial and technological factors clearly played a role in the development of this game play assistance: Production costs were exploding because of the advent of CD-ROM technology and the resulting fascination for live action video in games, and the genre's popularity was starting to wane.

Hint systems have been implemented more systematically with the revival of the genre, for instance in the rerelease of classic games from Revolution Software since 2009 (*Beneath a Steel Sky*; *Broken Sword: Shadow of the Templars*) and Telltale games since *Sam & Max—Season 2* (2008). A recent development of this tutoring strategy is particularly interesting: In contemporary action games such as *Infamous* (Suckerpunch, 2009) and *Batman: Arkham Asylum* (2009), the system

automatically provides textual hints when players face certain new challenges. This assistance often takes the shape of a reminder of a tutorial element: In *Crysis 2* (2011), for instance, the player is instructed to "press Q to activate armor mode" before jumping down from high ground or "press C to crouch" in certain spots. This dynamic integration of hints corresponds perfectly with Gee's "explicit information on-demand / just-in-time" principle, where the information is given "when the learner needs it or just at the point where the information can best be understood and used in practice" [13, p. 226].

20.4.3 "Can I Play, Daddy?": The Extradiegetic Management of Performance

In the home market, users could rely on the challenge rating that many companies provided for their products to decide which game to buy and play: Epyx games were rated according to three icons (action, strategy, and learning). Each game box featured a combination of these icons—for instance, "strategy/strategy" for *Temple of Apshai*—in an attempt to communicate the nature of the challenges set forth by the games. Similarly, the side of the boxes for SSI games always specified the difficulty level (intermediate, advanced) and the estimated play times.

Adjustable difficulty settings appeared quite early in the arcades, but in a paradoxical and deceptive way. In *Tempest* or *Star Wars* (Atari, 1983), for instance, players could select the wave at which they wanted to start. But this choice was not consequence free; actually beginning the game on the first level meant that players had to sacrifice a generous bonus to their score, and thus the system was really counterproductive with regard to the competitive practice otherwise promoted. In the heyday of the arcades, the real person in control of the difficulty was the owner. Manufacturers integrated dual in-line package (DIP) switches on the game boards that could control a variety of aspects, most notably the cost of play, but also the number of lives allocated per quarter and other aspects pertaining to the difficulty of the game. When a new, technically superior game took the arcades by storm, inviting the best players to the challenge, arcade owners could easily up the ante to maximize profits. The attraction of technology could influence the very nature of game play.

Considering the ever-present concern of play time versus profitability in the arcades, adjustable difficulty made more sense for domestic systems. Home conversions of classic arcade games such as *Joust* or *Berzerk* often added different skill levels from which to choose. On the Atari VCS, one can find switches labeled "game select" and "difficulty." In the VCS version of *Space Invaders* (1980), these switches allowed players to adjust the size of the laser cannon—and consequently, the probability of being hit by the invaders' bombs. Some aspects could be modified directly during a game. It was common to organize the challenge in increasingly difficult waves/levels, and games like *Fast Eddie* (Sirius Software, 1982) allowed players to jump directly to more difficult waves by using the "game select" switch. However, this freedom came at a cost, as these manipulations could reset the scores accumulated up to that point.

Beyond the canonical “easy/medium/difficult” selection, variable difficulty settings have also been used to address the pride of players and thus acted more like a taunting mechanism. *Wolfenstein 3-D* (Id Software, 1992) proposed five settings, from “Can I play, daddy?” to “I am death incarnate.” But the ego of players could be spared by providing a covert adjustment of difficulty—or dynamic adjustment, as it is called nowadays. As Ernest Adams pointed out [22], the feature was introduced quite a long time ago: in *Astrosmash* (Mattel Electronics, 1981), an *Asteroids* clone released on Intellivision, the system lowered the difficulty automatically when players only had one life left. It was customary for arcade beat ‘em ups like *Teenage Mutant Ninja Turtles* (Konami, 1989) to modify the amount of enemies or the difficulty of bosses depending on the amount of simultaneous players. Still, arcade games have remained very challenging compared to recent offerings. In *The Elder Scrolls IV: Oblivion* (Bethesda, 2006), the “judgmental” difficulty settings have been replaced by a generic “difficulty” slider that could be adjusted at any moment in the game without consequence. What’s more, in order to avoid frustrating encounters in the open world, as was often the case in RPGs, the creatures all over the world leveled up at the same pace that the avatar did, so that the fictional abilities were always sufficient to take on the challenge. Interestingly, many hardcore fans of the genre and the series were shocked by this design change. The basic challenge of RPGs was definitely altered, favoring a smoother progression over the difficulty of finding a proper path in the expansive world. For some, the change also destroyed a sense of consistency and coherence. But it certainly made the open-ended experiences more appealing to new players and is another clear sign of the pressure developers are facing in the contemporary expansion-driven and insecurity-laden industrial context.

20.4.4 “Q: When Should I Save the Game? A: As Often as Possible”

Like the adjustable difficulty systems, the pause function made more sense in the domestic context. The developers of *S.C.I.M.M.A.R.* (Avalon Hill, 1983) for the Apple II said it best: “This will allow you to stop a game to deal with burning supper, telephone calls, fire drills, reactor meltdown, or any other petty annoyances of civilized life.” Arcade games were in fact more concerned about players ending their session and make way for the next quarter, and hence the presence of timers and other incentives. The controller for Fairchild’s Channel F already featured a pause button in 1976; this feature would reappear on the infamous 5200 controller (1982). In the Atari 400/800 conversion of *Space Invaders*, players could suspend play by pressing the “control” and “1” keys at the same time. On most home computers, the pause function was usually associated with the spacebar or the “p” key.

In the manual for Microprose’s *The Legacy. Realm of Terror* (1993), a Q&A section seeking to guide new players seems to comment on this reality with a sardonic tone: “Q: When should I save the game? A: As often as possible.” Compared

to the quick thrills of arcade classics, the adventure and role-playing genres relied on puzzle-solving and strategic thinking and orchestrated these challenges over much lengthier play sessions. In order to avoid the loss of many hours worth of efforts, game designers have created save state features. In *Snowball* (Level 9 Computing, 1983) and other games in the *Silicon Dreams* interactive fiction trilogy, users who faced death on the colony starship could undo their last command by typing “OOPS” in the text parser. The long-term implications of players’ decisions in *Ultima* (Richard Garriot, 1981) or the lengthy war games and RPGs of SSI required a more permissive save feature; these games allowed players to save a specific game state at will. The writable media—cassettes and floppy disks—used by early home computers allowed designers to implement these systems more easily; it was already featured in *Adventureland* (1978). The cartridges used for home consoles did eventually integrate battery-powered chips to store games (*The Legend of Zelda*, Nintendo, 1986), and some systems had dedicated volatile memory on board to manage the saves from all games. Other games relied on alphanumeric codes that were provided to players at the end of a session in order to restart at a similar game state (*Metroid*, Nintendo, 1987). In the world of PC gaming, with its seemingly infinite storage space on hard-disk drives, frenetically saving the game after every challenge became compulsory for many players, with “quick save” and “quick load” features appearing in many action games.

In 1983, the box of *Moon Patrol* for the Atari 5200 highlighted its “unique continue feature.” To prevent the frustration of starting over from the beginning, many arcade games in the 1980s offered the possibility to continue—at the cost of a quarter—from the start of the current section after all lives were lost. *Wonder Boy*’s world was similarly sectioned and identified with numbers that acted as checkpoints (Sega, 1986). This feature was widely implemented during the NES era, and automatic checkpoints became prevalent in many genres. In popular platformers such as *Super Mario World* (Nintendo, 1990) or *Sonic the Hedgehog* (Sega, 1991), players had to run past some sort of marker to automatically start over at that particular point in space should they lead Sonic or Mario to their doom. Interestingly enough, many contemporary games seem to rely on automatic checkpoints instead of letting players save whenever they want. Whereas the first *Crysis* (Crytek, 2007) let players accumulate all the saves they wanted, the second game in the series (2011) automatically and frequently saves the game state.

As Jesper Juul has argued (2009), interruptibility is essential to the rise of casual gaming. But as we highlighted in the previous sections, many genres required save features early on in the history of video games. Designers have longed to create longer immersive journeys. Thanks to the development of the domestic market along with the advent of proper save state technologies, the overall length of these journeys have been expanded to the point where the worlds of some RPGs can take several dozen hours to be visited and brought to a peaceful state. In turn, the lengthier formats built up expectations in terms of the diversity and quality of the journey, raising production costs. Here we can clearly see that the rise of progression games is resulting from the multidirectional interactions between the circuits of game play, industry, and technology.

20.4.5 “You Will Not Be Able to Fulfill Your Prophecy, Sir Graham, without Mapping Your Progress”: Spatio-Narrative Guidance

Classic arcade games typically organized the game world into clear-cut segments to be visited in a specific order: waves, levels, stages, and so on. In *Gran Trak 10*, *Space Invaders*, or *Crystal Castles*, each segment is seen in its entirety on the screen. In *dnd* (Gary Whisenhunt, Ray Wood, 1975) or *Colossal Cave Adventure* (Will Crowther, 1977)—games developed in the academic context—a continuous and expansive world is there to be explored; this new challenge was widely implemented in role-playing and adventure games. In *Temple of Apshai* and other early RPGs, mapping the dungeons became part of the optimal strategy to complete the game. In fact, many games of the era peremptorily instructed players to draw a map; “you will not be able to fulfil your prophecy, Sir Graham, without mapping your progress” revealed the manual for *King’s Quest* (Sierra On-Line, 1984). Game developers started to provide assistance for this task by including map pages in manuals (*Alternate Reality: The City*, Paradise Programming, 1986) or even large maps with preidentified labels (*The Legend of Blacksilver*, Epyx, 1988), to be completed by players. In 1985, *Swords & Sorcery* on the ZX Spectrum (Mike Simpson, Paul Hutchinson) featured an overview of the dungeon along with the first-person view. In 1986, Sierra’s *King Quest 3: To Heir Is Human* featured a “magic map”; the landscape appeared on a separate screen, paralleling the player’s exploration. Westwood Associates have integrated automapping since its 1988’s sci-fi RPG *Mars Saga*; the screen was divided to integrate the overhead synthetic map view. The feature became customary in other major series—such as *Might & Magic* (New World Computing) and *The Bard’s Tale* (Electronic Arts) around the same time.

The expansion of game worlds was quickly supplemented by the integration of on-screen spatio-narrative guidance systems. With these dynamic displays, game developers went beyond the logic of highlighting elements as players encounter them, as in the case of auto-mapping. The screen was divided, with another depiction of the world providing additional information. In *Battlezone*, the player had access to a simple radar screen on top of the main display, where dots indicated the position of nearby enemies. The scanner in *Defender* (Williams, 1980) showed the totality of the level, along with the evolving location of both enemy alien saucers and humans that players had to protect from abduction. *Kapstone Kapers* (Activision, 1983) used a similar system, but the presence of the “radar” was not justified by the vehicular/sci-fi setting. *Safecracker* (Imagic, 1983) made good use of the controller plastic overlays bundled with Atari 5200 games to direct players. As one drove in the open world presented in isometric perspective, the border of the screen changed colors; each of the four colors referred to a corner of the controller overlay, thus indicating the general direction of the next safe to crack. In *The Legend of Zelda: A Link to the Past* (Nintendo, 1991), players had access to an overview map, on which icons highlighted the current position of Link and the location of the next important items to be collected. Many contemporary games—from rail shooters to open-world

updated about the goals to be pursued in order to drive the narrative forward. From open worlds like *The Simpsons: Hit & Run* (Radical, 2003) or *Red Faction: Guerilla* (Volition, 2009) to smaller and more linear game worlds as in *Dead Space 2* (Visceral, 2011), arrows or trails appear directly on the virtual space to make sure that players advance in the most efficient way possible and move the narrative forward.

On top of these elements, it is essential to note that the spatio-narrative guidance system also encompasses many other visual signs overlaid directly on top of the main depiction of the virtual world. Early games were mostly concerned about depicting the objects essential to the game play and in doing so already presented their worlds in a highly functional and idealized way. The creation of ever more photorealistic visuals—both in the 2D and 3D eras—is largely responsible for the integration of directional arrows and highlighters that assist players in deciphering the lush virtual spaces in which they immerse themselves. Technological evolution in audiovisual fidelity is thus one of the factors that made these assistance systems mandatory to insure a gratifying game play experience.

20.5 CONCLUSION: THE PLEASURABLY COMPLEX

As Henry Lowood pointed out in a contribution on the history of early arcade machines [23], the phenomenal success of *Pong* can be attributed in great part to the simplicity of the simulated events and of the operational rules, summed up by the famous directive “avoid missing ball for high-score.” By contrast, the lukewarm reception of *Computer Space* is largely attributed to its complexity for the time. As video games evolved, in arcade parlors as well as in the domestic space with home consoles and personal computers, game designers have longed to create more complex experiences without alienating potential players. Salen and Zimmerman [24] as well as Juul [14] have noted that video games—in comparison with their nondigital cousins—open up new gaming possibilities, since the computer can uphold more complex ludic systems than the shared mental effort of human players typically could. To say it in other words, video games have managed to propose more elaborate make-believe scenarios and worlds. Of course, the social competition aspect can feed on the mastery of this newfound complexity in comparison with other players.

Up to this day, players feeding on the thrills of competition can easily find challenging single-player experiences, and it is now almost customary for major titles to integrate a competitive multiplayer component even if the single-player aspect is significantly fleshed out. While the prime competitive context of yesterday—the arcade and its technologically superior machinery—has been largely replaced in the western world by online multiplayer arenas, the convenience of networked competition means there’s more people than ever who invest significant amounts of time in order to “pwn” each other. In some parts of the world, televised E-sports create stars that are celebrated as much as traditional athletes. The introduction of “achievements” on Xbox Live and “trophies” on PlayStation 3 have further

this competitive spirit even more than high-score charts did in the early days; even single-player games integrate dozens of these virtual rewards for players to accumulate and display on their online profile. But significantly, every player will receive some of these rewards throughout the experience; some games even hand in a trophy for completing the tutorial level.

Even though video games are still an ideal playground for the social competitive practice it was built on, the medium has evolved to favor gratification beyond the thrills of competition or technological attraction. Just like in other fictional institutions developed with cinematic and literary apparatuses, the immersive journey into a fictional world has become an intrinsic pleasure in itself. The rise of the cooperative paradigm that we have presented throughout this chapter is a clear sign that designers want to help players progress in a world that was carefully crafted to provide gratification; the discovery of this world, the assimilation of its narrative possibilities, and the progress until closure can be powerful intrinsic rewards. The pushing hand, which encourages a steady confrontation of challenges in order to make the better players stand out, has become more lenient; it can also simply act as a “guiding hand” that periodically taps all the players on the back, encouraging everyone to move forward and experience gratification. From the deceptively simple arcade games of the early days, the medium has seen the rise of more complex and lengthy experiences, where the complexity is carefully introduced and where good design rhymes with good balance. Through user testing prior to release and algorithmic adjustments during the game according to the player’s performance, frustration is being avoided by design; it makes more sense from a commercial standpoint. In a way, every mainstream game now has the potential to be a casual game.

The recent revival of the “natural interaction” marketing strategy represents an interesting paradox in the way video game creators address potential players. Just like the text parser of interactive fiction—through its mediation of natural language—and many failed interface experiments in the 1990s (the Sega Activator, the U-force, and other interfaces inspired by the ideal of virtual reality), Nintendo’s Wiimote (2006), Sony’s Move (2010), and Microsoft’s Kinect (2010) are marketed on principles of accessibility and ease of use. Early Wii commercials featured the whole family enjoying a variety of interactive experiences in an instant, using knowledge they already possess—natural interaction with the world—to get in the game. “You are the controller,” says the Kinect marketing campaign, echoing perfectly Sega’s formula for the Activator. The message is more or less explicit but the same altogether: We know you think games are too complex, with so many rules to learn in order to perform, but now you do not need to learn how to use the interface and interact with the world anymore. Yet nothing is as complex as the real-world interactions we must manage in the course of our lives, and even the ludification of sports with these motion-sensing interfaces can prove to be really frustrating. And this is where the paradox shines: In order to remain gratifying, successful “natural games” have to rely to a great extent on the systems developed under the assistance mode of address we have underlined. That is to say, their apparent naturalness is balanced by all the extra layers of mediation that we have put forward: clear and

and distribution of information beyond the limits of the avatar’s point of view through spatio-narrative guidance systems.

Of course, many other aspects contribute to this idealization of experience, such as the segmentation of interactive moments into the “minigame” format, along with one of the most fundamental features of the medium: augmentation of input [25]. The player’s gesture is rarely as complicated or forceful as the fictive actions represented in the games. This is also one of the learning principles highlighted by James Paul Gee [19]; not only is the physical involvement potentiated by the medium, but the efforts invested to learn to operate within the rule system are more potent than in everyday life. This potentiating nature is one of the major factors that can account for the gratifying nature of the medium.

As we have seen throughout this chapter, the interactions of technology, industrial context, and the experience of game play itself are complex and constantly shifting; much work needs to be done in order to refine the historical narratives in a way that can reflect the complexity of the medium and its evolutions. In order to expand on the historical research proposed in this chapter, one would benefit from a precise set of methodological tools to evaluate the variations of gaming rhythms. For instance, the rhythms of failure and progression, as marked by in-game events such as the avatar’s death or the completion of a segment, could be observed on many different groups of players, changing the focus from current games evaluated with such protocols by the industry to older key titles in the history of games. The real usefulness of early hint systems—and thus the appearance of a genuine guiding hand in game design—could be measured and dated by comparing a group who has to use the features with a group who cannot. On top of the assistance systems we have exposed, the study of the overall orchestration of players’ efforts in the course of the interactive experience is a necessary step to better understand the modes of address put forth by the medium and their relative importance at any given time.

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Part III

Game Design and Development