UNDERSTANDING VIDEO GAMES

THE ESSENTIAL INTRODUCTION

SIMON EGENFELDT-NIELSEN / JONAS HEIDE SMITH / SUSANA PAJARES TOSCA

Routledge
Taylor & Francis Group
NEW YORK AND LONDON

while players make their choices, following classic board games such as chess or risk. Examples include *Balance of Power*, *Civilization*, and *Warlords*.

Process-oriented games

Though winning seems an essential element of games, a (growing) breed of software exists on the edges of this definition of a game. Instead of giving the player one or more goals, process-oriented games provide the player with a system to play with. These products receive the game label not so much for staging conflict or competition but because they're made for entertainment purposes; they could fit the definition of a *toy* rather than actual games. Think of populating and watching an aquarium as opposed to playing chess.

There are two main approaches to the design of process-oriented games. In one type the player is a character exploring and manipulating a dynamic and ever-changing world. Another type puts the player in charge of more fundamental variables, such as taxation levels or elements influencing an ecosystem. Process-oriented games lack any standard, or consistent, criterion for success, although each game encourages certain types of play: most players will want to build a large city in *SimCity*, or try to reach higher levels in *EverQuest*. A few other examples include *Elite*, *The Sims*, and *Zoo Tycoon*.

A subgroup of process-oriented games try their best to mimic concrete, real-world experiences, such as driving a car or flying an airplane. These are often referred to as **simulation games**. While many action games do flout ever-greater levels of realism, simulation games go further than action games, and reproduce minor details even at the expense of immediate gratification. The obstacle in these games need not be any external enemy; it is often the challenge of mastering the complexities of the **interface**. The challenge of a flight simulator, for example, is learning the details of getting a passenger plane off the ground. By this definition, games such as *SimCity* or *SimEarth* are not simulation games, since they do not try to simulate a concrete experience or strive to replicate minute details. Examples of simulation games include *Flight Simulator 2002*, *Microsoft Train Simulator*, *Sub Battle Simulator*.

The four genres are summarized in table form below. We will be referring to them throughout the remainder of this book.

	Action games	*Adventure games*	*Strategy games*	*Process-oriented games*
Typical action	Battle	Mystery solving others	Build nation in competition with	Exploration and/or mastery
Criterion of success	Fast reflexes	Logic ability	Analyzing interdependent variables	Varies widely, often nonexistent

4 HISTORY

A BRIEF PRE-HISTORY OF VIDEO GAMES/DOES HISTORY MATTER?/A HISTORY OF VIDEO GAMES/THE 1970s/THE 1980s/THE 1990s/THE 2000s/PERSPECTIVES

The history of video games, as we have seen, may have begun with the launching of a tiny white torpedo in an MIT basement. However, while the three creators of the torpedo launch—more on them later—did inspire many a programmer of the time, these three were, perhaps needless to say, standing on the shoulders of giants.

A BRIEF PRE-HISTORY OF VIDEO GAMES

In fact, the history of video games is merely the latest chapter in the fascinating and much lengthier history of games. If we hope to come anywhere near the roots of this history, we must travel several thousand miles south-east from Cambridge, Massachusetts, and some 4,600 years back in time. This will place us in ancient Egypt during the Third Dynasty (2686–2613 B.C.); here we should be able to observe people playing the game of Senet. As far as scholars can surmise, Senet was a game of skill and chance not unlike present-day backgammon. Some speculate that Senet's status changed over time, from a purely recreational pastime to an activity with potent symbolism and religious significance. But even more remarkable is that in a culture and an era utterly foreign from our own, we find a form of game that maintains its appeal four millennia later. Even with the omnipresence of computers today, and their astoundingly complex technological possibilities, we still choose to play old-fashioned board games that ancient Egyptians would have quite an easy time learning.

Around the time of Senet, although somewhat to the East, Mesopotamians played what is known as the royal game of Ur, an elaborate board game with an element of chance determined by dice. Although games at various times may have served ritual functions, it is clear that they also served the functions familiar to us—to entertain, to delight, to create social interactions.

Nor were these two games alone. The oriental game of go was played since at least 2000 B.C.. Dice were used as game of chance from the seventh century B.C., about 1,400 years prior to the first mention—in a Persian romance—of chess. This period also marks the beginning of the Olympic Games in Greece (the first documented games were held in 776 B.C.). Like board games, sports are activities carefully framed by rules, to assign scores to the performance of participants. The Olympic Games, then, like early known board and dice games, are testament to a fundamental human tendency: we create games. Indeed, we even adapt most non-recreational activities into games. Think only of how many non-game activities we have assimilated from our own lives—or the lives of those people we dream of being—into games: we cook and run and swim; we shoot and sail and fly.

At the time of the first documented Olympics, there existed a version of chess called chaturanga, a Sanskrit term referring to a battle formation. While not identical to present-day chess, chaturanga ranks as an undisputed ancestor; one particular piece, like the king, was all-important to victory, and different pieces were endowed with different powers. A plethora of chaturanga derivations existed, since rules diverged from region to region. The game traveled widely, and by the tenth century had arrived in Europe and Africa in the luggage of Arab travelers. Only in the late fifteenth century can we see the rules of chess undergo a process of standardization. At this time, card games—which had been known in Europe for two centuries—were given standardized card suits. Analogous to the history of Senet, playing cards took on symbolic or mystic functions in the mid-eighteenth century as they were employed in the service of fortune telling.

The idea of using board games to simulate actual real-world activities—as opposed to merely drawing upon them for symbolism—flourished in the wake of the Kriegsspiel, developed in 1824 by a Prussian lieutenant, Georg von Reisswitz.[1] This strategy game, in which players were offered a range of complex situations became popular with Prussian army personnel. Decidedly more peaceful was The Mansion of Happiness), released in 1843, the first commercially produced game in the United States. The board game offered a beautifully simplistic vision of the world, where good deeds were rewarded and bad deeds punished.

The Mansion of Happiness, however, will lie forever in the shadow of that singular international success story: *Monopoly*. Published in the mid-1930s by Parker Brothers, it was based on an earlier board game *The Landlord's Game* and a number of derivatives from this, but achieved a fame unknown to its predecessors. Perhaps anticipating much of the second half of the twentieth century, *Monopoly* makes no pretence of lauding in-game niceties. The game, which has sold more than 200 million copies worldwide, combines chance and strategic thinking as players vie for domination of a fictional world of real estate.[2] To the seeming delight of twelve-year-olds everywhere, the game rewards nothing as much as bold capitalist perseverance, and is a fascinating example of how games can reflect—as well as foster—cultural values. Its success also helped establish the board game as a foundational activity for family and friends, young and old alike.

In the aftermath of World War II, electronic games were struggling towards life in circuits of various types, but the launch of the tiny white torpedo was still a long way off. The 1950s, however, saw the publication of numerous strategic wargames, including the still influential Risk and Diplomacy. While the complex rules of the Kriegsspiel does live on in many of these wargames, it is worth noting that Diplomacy relies on nothing but the most minimalist of rule sets. As players battle for domination of First World War Europe, negotiation and interpersonal scheming come to the fore, thus creating a layered Machiavellian experience out of the simplest of rules.

By the mid-twentieth century, games were an established part of cultures around the globe, in myriad manifestations: we played games of chance, games of war and strategy, and games that simulated more and more aspects of the rest of our lives. One development that cannot go un-mentioned (even if it did not technically come *before* video games) is pen-and-paper role-playing games (RPGs). These did not develop in a cultural vacuum (few things do) but rather were the result of a remarkable convergence of popular trends and interests in the early 1970s. The 1960s had seen the commercial proliferation of *wargames*, tabletop games of strategy where maps, dice and figures were used to simulate battles,

allowing players to recreate historical conflicts. And in 1954, worldwide publication of J.R.R. Tolkien's *The Lord of the Rings* altered the landscape of literature and introduced the world to the fantasy genre. A host of authors followed suit, recreating worlds from the medieval to the mythical, stocked with magic, dragons and heroes. These derivations, though never attaining the popularity of Tolkien's epic, catered to the many hungry readers and fostered a community of fantasy fans that continues to thrive today.

Both wargames and fantasy literature found their primary audience amongst teenage males, so it was perhaps only a question of time before the two genres merged. Soon after, fantasy-themed wargames appeared where elves and orcs replaced the armies of European empires. In fact, the mother of all role-playing games, *Dungeons and Dragons*, was directly based on a fantasy wargame called *Chainmail*. Created by Dave Arneson and Gary Gygax, *Dungeons and Dragons*, was commercially launched in 1974. Despite a slow start, it was selling 7,000 copies a month by 1979, **spawning** a multitude of sequels and inspiring untold numbers of gamers to become game designers of their own. The game's complex rules seemed to be a magnet for burgeoning designers, who adapted them in countless ways to their own worlds of fantasy.

In the medieval world of *Dungeons and Dragons*, a player chose to be either a wizard, a warrior or a cleric, and decided to be a member of one of the world's three races: hobbits, dwarves or elves. Groups of players, seated around a dining room table or huddled in a basement, conducted their adventures in hostile dungeons and castles, battling monsters, and trying to accumulate treasure and "experience points." The game revolved around a "dungeon master," who conducted the adventure and interpreted the rules for the rest of the players. Playing occurred (and still occurs) through a lot of talking: the dungeon master described the imaginary scenes the players were encountering, and controlled the endless monsters and dragons and other non-playing characters; the players, in turn, would state what actions their characters would take. The result of a player's action was then decided by a roll of the (often many-sided) dice; the result of each roll was interpreted in accordance with what was agreed in rulebooks. The dungeon master might describe a scene, for example, in which an unknown, hunch-backed troll-like creature approaches my dwarf warrior. My options are to attack or to run; I decide on the former, and roll a dice, one with twenty sides, to decide whether I hit the man based on my dwarf's abilities and skills. The dungeon master consults our rulebook, and can see that I hit the creature. I then roll again to see how much damage I do adjusted for my abilities and any spells in play. The creature then gets an attack on me where the dungeon master rolls the dice. He misses and I get another attack, where I hit the foul creature; slaying it. I then get experiences points based on the difficulty on the opponent, which in time will bring my dwarf to a higher and more powerful level.

The materials necessary to play were remarkably simple: the book of rules, sheets that describe the abilities and proficiencies of each character, and often maps and figures to create a visual representation of the adventure. Interestingly, these tools remain the basic setup for all role-playing games, although contemporary ones insist more on character interpretation, dialogue and storytelling more generally, whereas older games are more centered on the accumulation of points and treasure.

After *Dungeons and Dragons*, role-playing games seemed to grow like weeds. Some aimed to simplify its complex rules while maintaining a fantasy setting, like 1976's *Runequest*. Set in a fictional world during the bronze-age, its rules have been praised as

the beginning of modern role-playing. Others introduced new settings and universes, such as the successful science-fiction game *Traveller*, from 1977. However, by the end of the 1970s there was widespread concern about the hobby of role-playing, as the news media connected cases of youth suicide or criminal behavior to role-playing games. The general public did not always appreciate a pastime that encouraged young people to sit in their living rooms and discuss the finer points of medieval weaponry and slaughtering monsters, all with a passion that struck more than a few parents as morbid and unhealthy. Especially, within religious circles role-playing games were lamented for being blasphemic. Not surprisingly, video games have become embroiled in nearly identical controversies.

Despite the flare-up of cultural controversy—and in some cases, no doubt, because of such controversy—the hobby continued to mature, with the arrival of new kinds of games, rule systems and universes. The following list gives a small sample of the diversity of role-playing games in the recent past:

- *Call of Cthulhu*, 1981. Reproducing the universe of H.P. Lovecraft's books, this was a game of investigation under the constant threat of insanity. Here, emphsis was usually put on character enactment rather than fulfillment of particular goals.

- *GURPS* (Generic Universal Role-Playing System) 1984. Rather than offering a specific universe, this was simply a rule system that could be adapted to any scenario. It offered great freedom to creative game masters and players, and made it easier than ever for amateur game designers to create their own worlds.

- *Toon* and *Paranoia*, from 1984. Both of these easy-to-learn games relied on humor marking another alternative to goal-fulfillment in the traditional sense (of slaying monsters, recovering treasure etc.).

- *Cyberpunk*, 1988. Though the subgenre of science fiction already had an established cult following, this *Cyberpunk* gave sci-fi its first popular RPG.

- *Vampire*, 1991. With its simple rules and its emphasis on storytelling, this game changed the hobby by introducing more serious themes and continued an emphasis on narrative over rules and goals.

If we look at sales, we can safely say that computer role-playing games have eclipsed their tabletop counterparts. It is also no coincidence that in the list above, the most recent truly noteworthy tabletop RPG is a decade and a half old. The appeal of RPGs, at least to new audiences, seems to have waned. Nevertheless, their influence is clear, as computer RPGs are often based on this early generation of role-playing games: characters grow by accumulating "experience points," which are often acquired by fighting and picking up treasure; similarly, many games revolve around simple missions (also called quests) where a player's ability to *hack and slash* is all-important, and the more subtle skills of role-playing—telling a convincing story, for example, or negotiating with other players—are optional. Incorporating more player-centered storytelling on the computer has been difficult, due to the absence of a human game master and the standardization required by video games.

Historically, as we'll see below, tabletop role-playing games have inspired two types of video games: the text adventures initiated by *Adventure and Zork*, and the multiplayer **MUDs** (multi-user dungeon games) and their graphical predecessors.

Text adventures have evolved into graphic adventure games (and later hybrids such as action-adventure games), and early digital multiplayer role-playing games have grown into today's huge graphic worlds of the **MMORPGs** (massively multi-player online role-playing games).

Video games, then, have a long and varied pre-history. The examples above hardly scratch the surface. But it should be clear that video games are a result of the evolution and reconstitution of various elements of games going back several thousand years. Video games let us experiment with chance and probability, partake in complex strategic interaction, and allow us to simulate things that we cannot (or do not wish to) see happen in real life. They do so by tapping into our desire for spectacle and our thought-provoking willingness to submit ourselves to strange and arbitrary rules for the sake of entertainment.

DOES HISTORY MATTER?

History, unfortunately, does not fall within convenient categories. Any historical account must leave out substantially more than it includes and these choices are always subject to debate. Since the purpose of the following chapter is to give an overview of video games themselves, we choose here to downplay important issues of hardware, business and personal achievements. Our only excuse for this choice is lack of space; those readers interested in these other elements should dig into the reference list, which contains a wealth of knowledge.

The account will be structured by decades, beginning with an introduction describing cultural and technological events significant to the development of video games. Following these brief overviews, the games themselves are described by genre.

First, however, we may want to ask: "Does history matter?" Have not video games progressed so far that comparison with twenty-year-old forbearers—who can already seem hopelessly out of date, even a little absurd—becomes highly suspect, or merely irrelevant? We do not believe that the game student needs to be a walking encyclopedia of historical game arcana. It is also clear that for many research projects game history is of little importance—if one studies how teenagers today use *World of Warcraft*, it is not essential to know how their parents played *Pac-Man*. But to understand the wider significance of contemporary games—from their aesthetics to their technology to their cultural influence—one must often look to history for explanations. Indeed, history has a habit of repeating itself.

Today's dominant game types, while technically enhanced, often take their design cues from quite early games. For instance, the 2005 game *Age of Empires III*, while employing advanced 3D graphics, is structurally tied to the pioneer real-time-strategy title *Dune II* from 1992. Indeed, it could be argued that many potential design paths are simply not options for today's designers, because real-time strategy fans have become accustomed to the conventions established by titles released a decade ago. Similarly, a MMORPG like *World of Warcraft* from 2004 builds liberally on its text-based predecessors—all the way back to MUD from 1978—copying such conventions as corpse retrieval and leveling, and largely copying the player-to-player communication interface from these much earlier games.

The cultural position video games occupy today is difficult to understand without a sense of how games were initially conceived of and marketed. Similarly, the serious gaming student will be helped by a sense of how games, through various historical phases, have moved between public and more private spheres

(e.g. from arcades to home computers). For these and so many other reasons, history does matter, and can only enrich and complicate our understanding of video games and the world they've created.

A HISTORY OF VIDEO GAMES

Somewhere in the preceding pages we left a tiny white torpedo hanging in empty space. Before returning to its impact, we need to address more directly the question "What came first?" This is another of those trick questions that we have plagued the reader with a few times already. No trumpets sounded at the birth of video games, and so we must choose what constitutes the beginning. As we look for games emerging from the primordial soup, a few events breach the surface that cannot be ignored. As early as 1949, researchers at the University of Cambridge (U.K.) were operating the Electronic Delay Storage Automatic Calculator (EDSAC) one of the very first stored-program computers in the world. Back then a stored program was a revolution; today we merely know it as any program stored on a CD-Rom or hard disk. Only three years later, PhD student A.S. Douglas, as part of his research project, programmed and ran a computerized EDSAC version of *Tic-Tac-Toe* named *Noughts and Crosses*. This single-player experience, where you competed against the computer's simple program, was groundbreaking, but had limited influence on the outside world since the EDSAC was a unique machine.[3]

Another important event took place in the Brookhaven National Laboratory, Long Island. The local public, nerves frayed by the recent deployment of nuclear weapons in Japan, was anxious about the lab's cutting-edge research in nuclear physics. And as taxpayers funding this expensive computer equipment, they were unimpressed by the huge mainframes, lacking any displays, that just stood there seemingly doing nothing. In 1958, Brookhaven employee William Higinbotham thought of a way to generate more community interest in the lab: a tennis game. He developed *Tennis For Two*, a very basic game where visitors had to decide the angle of a ball and push a button at the right time, while certainly an *electronic* game it ran on analogue equipment, an oscilloscope. This precursor of the far more lauded Pong even introduced the idea of separate control equipment—what would eventually become the joysticks. Accounts of the time agree that the game was a huge success among lab visitors (for more information see Hunter, 2000).

This brings us back to Cambridge, Massachusetts. In 1961, three MIT employees divided their time between reading a series of pulp science-fiction novels by cereal chemist Edward E. Smith, watching B-movies from Asia, and working. The three men, Steven Russell, Wayne Wittanen, and J.M. Graetz, fantasized about bringing Smith's *Skylark* novels to the big screen. Now, much like Brookhaven, guests at MIT's annual visitors day were less than impressed with the low hum of mainframes, and the three were enlisted to create demonstration programs that would capture the minds of visitors. In a humorous and oft-quoted article[4] Graetz describes how this demand led to the development of steadily more interactive programs ranging from *Bouncing Ball* (which was just that), *Mouse in the Maze* (in which a mouse would traverse a user-designed labyrinth), *HAX* (a kaleidoscope based on user settings) and *Tic-Tac-Toe* where the player could make textual input which then generated textual output).

Though interesting, such programs did not truly captivate users, whose part in the process was obviously minor. This, and the procurement of the user-friendly DEC PDP–1 computer, led to the development of *Spacewar*, up and running in

February of 1962. The game was based on the three men's dreams of how their favorite sci-fi books might be adapted to movies. It featured two spaceships, named Wedge and Needle and each manned by a player, who were engaged in galactic warfare. The possibilities were quite simple. Each ship could fire torpedoes at the other, turn and increase or decrease thrust.

As previous examples make clear, *Spacewar* was far from the first video game. However, claiming that things started with *Spacewar*, as some have done, is not entirely unjustified. Here is a game that is truly novel, and relies on the actual capabilities of the computer. Also, *Spacewar*'s adherence to programming standards (as opposed to games which were directly bound to unique machines) would serve as direct inspiration for later game development.

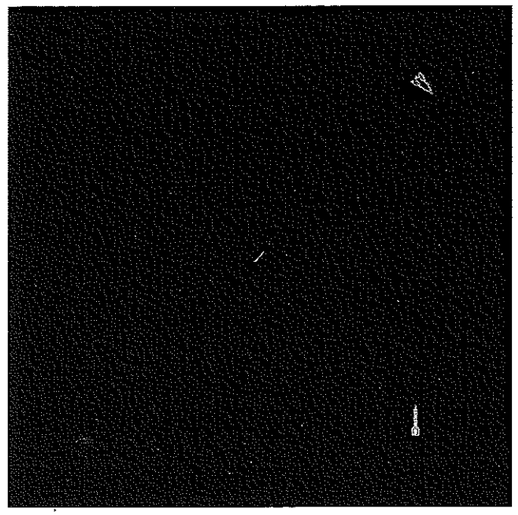

Figure 4.1 *Spacewar*

The game was a runaway success. Its inventors did not consider it commercially interesting and simply let it spread across North America at its own pace. Over the next few years, few updated versions were created. These involved more strategy—by adding features like a star, which created a gravity pull on the ships; the possibility of hyperjumps—thus adding chance to the rule-governed universe; as well as mainly aesthetic touches such as real constellations in the background.[5] The result was a single, simple game that had an enormous influence on early programmers.

Perhaps due in part to the availability and popularity of *Spacewar* little else related to video games happened in the 1960s. One innovation, however, stands out. In 1966, television engineer Ralph H. Baer pondered a novel usage for the 80 million television sets then installed in North American homes. Why not use these sets to play games? In with this thought he lay the basic circuits for what would become the video game console. By 1967 he had a working prototype which plugged into an ordinary antenna terminal to display the pretentiously named game *Fox and Hounds* (it could have just as well been called "Spot and Spot"). The player navigated

his "fox" to try and capture the "hounds." Baer and his employer were pleased and the project was continued. New technologies would soon enable users to play a light sensitive shooting game, as well as *Firefighter*, in which the player tried to prevent the TV screen from turning red by rapidly pumping a single fire (or in this case, "water") button.[6]

With the bold addition of a third "character" (or object such as a ball) Baer's team was even capable of sports games, most obviously *Ping-Pong*. In 1968, they had a saleable console but encountered serious resistance from TV manufacturers. Through a combination of stubbornness and luck, they finally landed a deal with Magnavox. Nothing, however, would come of this until well into the next decade.

Almost all the games mentioned here belong to the action genre. Early video game designers may have preferred this genre because of its immediate appeal to players without detailed instructions and without the need for advanced audiovisuals.

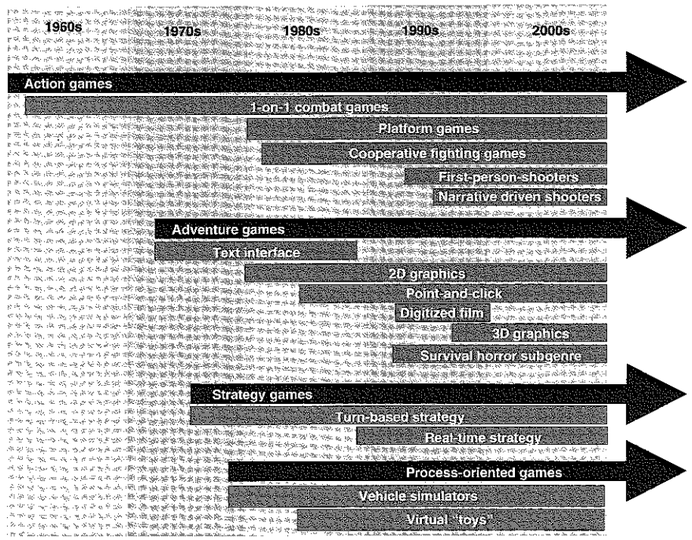

Figure 4.2 An overview of the development within the four genres. Gray bars indicate major trends in content or technology

THE 1970s

Although the previous decades had several possible beginnings of video games, the 1970s saw them grow explosively. This decade marked the birth of video games as an industry, and paved the way for gaming consoles much like the ones we use today. Most importantly, perhaps, the 1970s established video games as a cultural phenomenon to be reckoned with (**arcade games** featured in movies as early as 1973, for example in the American movie *The Last Detail*). And during these years the subculture of gamers was born. Those gamers, mostly young men, would gather in newly created arcades, large rooms both wondrous and dank that housed this new cutting edge digital entertainment.

The most important producer of video games was Atari. Electrical engineer Nolan Bushnell had quickly perceived the financial possibilities inherent in *Spacewar*. It was obvious to him (although not to many others) that people would pay money to play such games in the right setting. Around 1970 the technology to realize this ambition was becoming available. The result was *Computer Space*, the world's first proper arcade game, and very much inspired by the original *Spacewar*. While not successful, it paved the way for *Pong*, which would soon rocket Bushnell's new company, Atari, to the head of the video game stratosphere. While the company earned about $3 million in 1973, only two years later that figure had risen to $40 million. In 1976, the company was bought up by Warner Communications; severe changes in the previously informal work environment upset a number of employees, not the least Bushnell, who left in 1978. This would be the first of many conflicts between the often laid-back culture of game creators and the far different atmosphere of corporate America.) With successful consoles and games however, Atari continued to thrive, and in 1979 gross income rose to $200 million.

Video games in the 1970s also entered the home. Ralph Baer's arrangement with TV manufacturer Magnavox spawned the Odyssey console in 1972. The system was heavily hyped, with Magnovox marketing the promise of nuclear family fun for only $100. Some potential buyers, however, were confused since Magnavox hinted that the system required one of the company's own TV sets to work. A total of about 200,000 Odysseys were sold.

In that vein, Atari went domestic in 1975 with *Home-Pong*, a highly successful one-game-only console. More technologically interesting was the Channel F console, which hit the market in 1976 and was the first console to use plug-in cartridges containing individual games. Previously consoles were shipped with one or more built-in titles, which the player chose by flipping switches or inserting cards that held the appropriate settings. During its four-year lifespan, twenty-one games were published for the Channel F. Atari soon followed suit with the Atari Video Computer System (the Atari 2600) which would remain successful well into the next decade.

Two other events that would have substantial bearing on gaming occurred in those same years. On a technological level, few inventions rival the microprocessor in importance. Invented in 1972, and commercially interesting a few years later, the new technology of the microprocessor would influence heavily not only arcade games and consoles, but also the personal computers about to make their entrance. Perhaps equally important for gaming culture was the publication of the pen-and-paper role-playing game *Dungeons and Dragons* in 1973. As we have discussed, D&D introduced players to procedural (as opposed to goal-oriented) fantasy world role-playing, and would share a (sub)cultural niche with video games for a long time, appealing to the very same subset of young, predominantly male, players.[7]

Action games

The world's first arcade game was a failure. Inspired (heavily) by *Spacewar*, Nolan Bushnell drew many wrong conclusions from the game's design, and certainly failed to appreciate the desires of his audience. He was not producing a game for dedicated computer scientists, but rather for crowded smoke-filled bars and the technologically innocent. Not surprisingly, *Computer Space* did poorly. The game's

graphics resembled *Spacewar*, but the game was single-player and featured a spaceship battling against two UFOs. In addition, the game controls were hard to master, creating a learning curve too steep for new players who were unfamiliar with the very concept of video games.

Bushnell, however, learned his lesson and learned it well. His follow-up product, *Pong*, singlehandedly launched the video game as an industry. Released in 1972, its success was massive. Whereas the first version of *Computer Space* had been single-player, *Pong* was multiplayer at its heart. Furthermore, the complex controls of the space battle were sacrificed for simple paddles, and the rules were summarized in a single line, "Avoid missing ball for high score," offering a Zen-like exercise in simplicity. As in previous games, the player's perspective was detached and omniscient. All objects of the game—two white paddles, one ever-bouncing ball—were contained within a single screen.

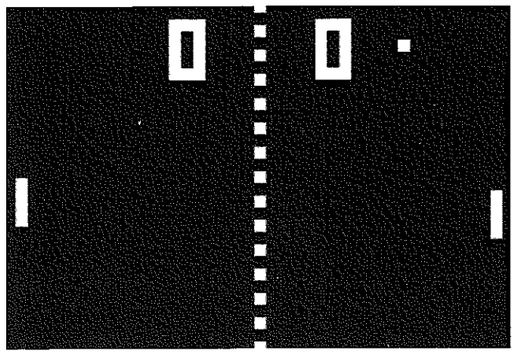

Figure 4.3 *Pong*

Arguably, *Pong* was itself highly derivative and the slew of *Pong* clones that followed, in arcades as well as in homes, relativize any claim that copying proven games is in any way a modern phenomenon. In 1973, Atari followed up on the success with a two-player race through space, appropriately entitled *Space Race*. The players each navigated a spaceship through a meteor field in order to reach the top of the screen. Again we see a very simple, competitive two-player game formula which served as a template for so many early game successes.

Marking a return to the shootout theme of *Spacewar*, players in 1974's *Tank* would attempt to shoot each other in a mine-strewn black and white maze. Much the same concept, although with restricted horizontal movement and different obstacles, made *Gun Fight* a success in 1975. The perspective remained centered while two players took on the roles of Wild West gunslingers.

The year after would see more dramatic developments. On the level of design, Atari's *Night Driver* from 1976 was one of the first games to challenge the dominating third-person, one-screen perspective. This driving game was among the first to employ a first-person perspective, placing the player directly behind the wheel, so to speak. In addition, the game world only gradually revealed itself to the player as the road curved ahead into the horizon. While not a standard case of scrolling, the effect was very similar.

Figure 4.4 *Night Driver*

This design development cannot be taken lightly. It was suddenly clear that the third-person omnipresent viewpoint was not the only possibility. Drawing comparisons to another modern form of expression, this is not dissimilar to when movie makers "discovered" the moving camera and the point-of-view shot.

Later that same year, however, another game would more loudly draw attention to itself. *Death Race* marks the end of innocence for arcade games and the beginning of a long-standing tradition of public outrage and worry over the morality of games and their players. *Death Race* centered on two cars running over stick-figure people who, when hit, turned into crosses. However, the crude graphics allowed for the possibility that the stick-people were "gremlins" (as the developers insisted) and thus not technically alive. Much controversy ensued. Thus was born the concept of the video game as public spectacle, and as a symbol of cultural ailment, to developments that continue to our day.

Though not revolutionary in any obvious way, two action games published towards the end of the decade would become benchmarks for much later design and earn their seats in any unofficial game history hall of fame. The first of these was *Space Invaders* from 1978. This single-player game upholds the most basic video game conventions—on the surface it is even comparable to *Computer Space*. However, the controls were much simpler than its forebearer, and the gameplay compelling. The player controlled a tank moving horizontally at the bottom of the screen. The objective was to shoot down a formation of aliens slowly approaching, while utilizing four shields to create tactical advantage. If the aliens shot the player or reached the bottom of the screen a life would be lost. Repelling one wave of attackers brought forth a new armada, this one moving slightly faster. The explosive success of *Space Invaders* did much to draw games from dimly lit arcades and into the florescent light of cafés, shopping malls, and convenience stores around the United States.

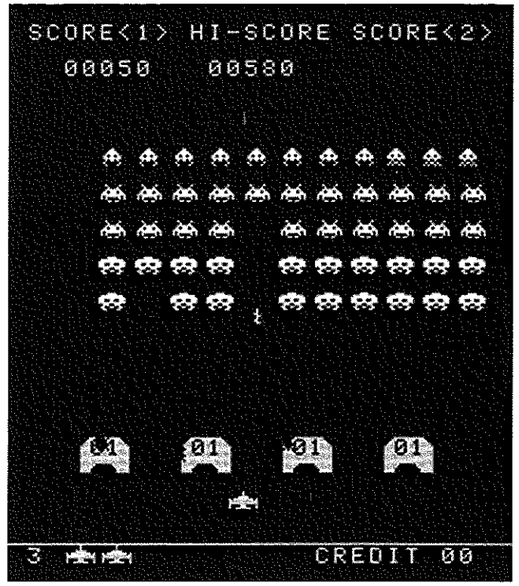

Figure 4.5 *Space Invaders*

Though it had a smaller cultural impact, Atari's 1979 hit *Asteroids* made even more money than *Space Invaders*. *Asteroids*, too, focused on gameplay over fancy graphics—although the stylized and incredibly simple visual components are note worthy for their trancelike qualities. This effect was to some degree a consequence of early **vector graphics**, first seen in 1977 in *Space Wars*, and already used by Atari with some success earlier in 1979 in *Lunar Lander*.

In *Asteroids*, a single-player game, a lonely spaceship had to fight its way through an asteroid belt visited by the occasional enemy flying saucer. Shooting an asteroid would split it into many pieces that then each had to be destroyed. The legacy of *Spacewar* is obvious in the wraparound, seemingly never-ending space, and the feel of gravity's tug on the ship.

The *Spacewar* template was highly visible here, and even in the more varied surfaces of many successes to follow, not least of which was the first true color arcade game, *Galaxian*, from 1979. Considering these triumphs, we can conclude that although various design experiments were conducted through the decade, action games didn't evolve much beyond the beautifully simple standards set by *Spacewar* eighteen years before.

Adventure games

Although it might have seemed so at the time, not all games in the 1970s were action games. There were plenty of reasons to try different approaches to game design. Action games held limited possibilities for storytelling, and basically appealed to people who enjoyed games that challenged motor skills. The more contemplatively

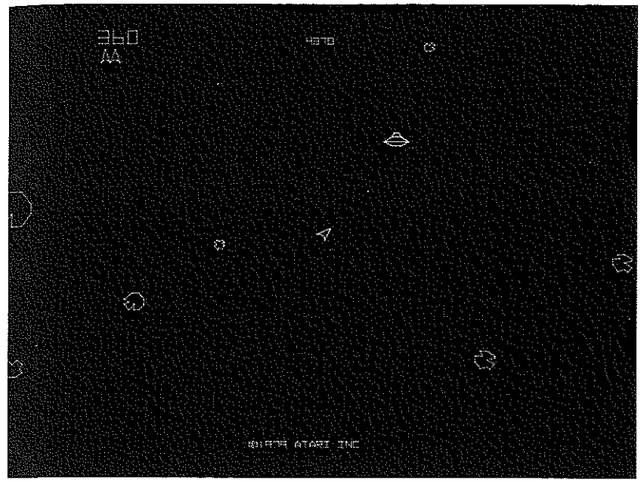

Figure 4.6 *Asteroids*

minded might not be thrilled by fire-button thumping and a reliance on good reflexes. And some designers likely lacked the skill or resources to actually produce a state-of-the-art action game. For these and no doubt for other reasons, text adventure games started showing on mainframes in the early 1970s, and a few years later would be easily and enthusiastically ported to personal computers.

The founding father, arguably, was *Hunt the Wumpus*, written by Gregory Yob in 1972. This simple construction placed the player in an underground cave system plagued by the presence of a clearly evil wumpus—a subterranean monster—with little interest in peaceful dialogue. The player, using only written commands, typed in his intention of either moving or shooting. Through the purely textual interface, the game would give hints as to the location of pits, bats, and the monster itself. No graphics meant modest demands on the player's hardware; the program was light, easy to understand, and addictive to more than a few people in whose imaginations the evil wumpus sprung to life.

More influential on game design was *Adventure*,[8] originally constructed by programmer William Crowther around 1972, and then expanded and improved by Don Woods at Stanford to be widely distributed in 1976. *Adventure* combined Crowther's interests in cave exploration, fantasy role-playing and programming. The purely textual game led the player through a world full with events and imbued with objects and creatures, each with their own properties. The player would write his commands in "natural language," typically as a combination of verb and noun (such as "examine building"), and the program would offer a result. Thus, the beginning of the game could read:

> At End of Road
>
> You are standing at the end of a road before a small brick building. Around you is a forest. A small stream flows out of the building and down a gully.

[Player input] *Examine building*

It's a small brick building. It seems to be a well house.

Traveling through the textual world, the player would encounter small puzzles and creatures, armed only with a series of simple commands to interact with them.

Adventure was distributed for free over the ARPAnet, a rudimentary precursor to today's Internet. Simultaneous to free distribution, video games were beginning to make money, and *Adventure*'s successor—*Zork*—was considered a commercial opportunity almost from its inception. Designed by a group of MIT students, the game was more ambitious and in some ways technically superior to its recent ancestor. Spurred on by the game's popularity among their fellow MIT students, the designers founded Infocom to handle the production and distribution (for the history of Infocom see Briceno *et al.*, 2000) Nevertheless, the first *Zork* game did travel widely across the ARPAnet, although the game's code was partially restricted to prevent other designers from copying features directly.

Both *Adventure* and *Zork*, of course, were heavily influenced by the era's fascination with Tolkien and the growing popularity of fantasy role-playing. *Dungeons and Dragons*, more perhaps than later role-playing games, held obvious appeal to the technically interested; hand-drawn paper maps of dense dungeons and foreboding forests were pored over by D&D and *Zork* players alike. In early adventure games, as in early tabletop RPGs, the game experience was centered more around puzzles or logic than around narrative. Playing *Zork* involved not only solving puzzles within the game but also guessing what written commands the game's input interpreter could comprehend.

Although the focus on logic and puzzles fascinated many, these themes would be downplayed throughout the next decade. Beginning the trend towards narrative was Ken and Roberta Williams' *Mystery House*, published in 1979 for the Apple II. While the game structure didn't rival *Zork*'s, *Mystery House* sported crude graphics to enhance the player's textual experience. Based on the success of *Mystery House*, the two authors went on to found On-Line Systems, which would soon become Sierra Online, a company that would strongly define the genre in the decade to come.

Strategy games

Several games of the 1970s circulated as ideas or snippets of code; multiple designers might expand on these bits, so a game could exist in multiple incarnations at any given time. One such game was *Hamurabi* (occasionally spelled *Hammurabi*, and sometimes known as *Kingdom*). In this text-based game, the player was a ruler managing a nation's resources. With each command, the player would have to balance his country's various resources and also attend to popular opinion.

More complex and more influential was Walter Bright's *Empire* from 1978, in which the player attempted to conquer an unexplored world, using a series of military units. Another game of the same name, written by Peter S. Langston, was a yet more complex multi-player game with a notable economic system. Compared to action and adventure games, strategy games did not go undergo dramatic development in this decade, perhaps because they already had a considerable history (in terms of board games) which was mostly built upon and adapted to video game format.

Figure 4.7 *Mystery House*

Process-oriented games

Looking to digitize the role-playing experience, others went in somewhat different, and less commercial, directions than the makers of *Zork*. At Essex University, Roy Trubshaw and Richard Bartle, in the last years of the decade, were working on a system called MUD. The multi-user dungeon was essentially a multiplayer version of the *Adventure*/*Zork* template. Users would connect to the game, which ran on a server (i.e. a central machine which players could connect to via their own machines), and could then interact with the objects in the system as well as with other players. The world of the game, which would cyclically continue for a considerable period and then reset to the initial state, incorporated the actions of every player, and quickly became far more dynamic and unpredictable than the static worlds of single-player adventure games. MUD, which would turn into the label for the whole subgenre, was a success, albeit a local one, since only a few people had network access at the time. Its influence, however, would be wide-ranging and is clearly detectable in the massively multiplayer online role-playing games (such as *EverQuest* and *Star Wars: Galaxies*) of today. Before these, however, a wide range of MUD manifestations would serve as the playing ground of many hobbyists and academics, primarily through the 1980s and early 1990s.

THE 1980s

The 1980s was marked by rapid technological progress, a number of novel approaches to game design, and the proliferation of personal computers. The decade was also marked by what is sometimes called the Great Videogame Crash of 1984. Though dramatic and sudden, the "crash" was actually the result of a combination of factors. In the first third of the decade, the industry exploded and everything seemed promising. By 1984 one in four American homes housed a game console. Game sales had more than tripled (to $3.2 billion) from the previous year and there were few, if any, alarm bells ringing. One potential—though ignored—warning was the 1981

Atari 2600 adaptation of the arcade smash hit *Pac-Man*. The adaptation was legendarily poor, with very few of the aspects that made the original so popular. Following up on this artistic (if not commercial) disaster, Atari released E.T.: *The Extra-Terrestrial* that same year, a game so poorly designed and so rushed through production that it became one of the largest flops of the industry. The failure was underlined by Atari dumping and destroying huge numbers of E.T. cartridges in the New Mexico desert.[9]

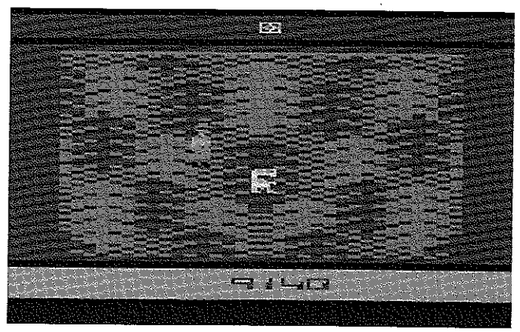

Figure 4.8 *E.T.: The Extra-Terrestrial*

Atari, though controlling two thirds of the industry, then attempted to stifle third-party competitors by taking them to court arguing that independent development for Atari machines should be illegal. Bushnell's old company lost which led to an explosion of third-party publishers, and the market was soon flooded with huge numbers of games of uneven quality.

The final, and perhaps largest, nail in the coffin was home computers. In the early years of the decade, a variety of personal computers became available at prices that could compete with the game-dedicated consoles. As consumers realized the potential of home computers, and the growing number of games sold on 3.5 inch floppy disks, there was little reason for acquiring consoles that were less versatile. The Apple II—produced in 1977 by former Atari employee Steve Jobs—supported a large catalog of games. For price conscious gamers, Commodore's Vic 20, was a big success at under $300, as was its more powerful younger brother, the Commodore 64.

In very little time the console industry virtually ceased to exist (Atari itself avoided bankruptcy but never regained its strength). Investors grew wary of anything videogame-related, and it would be another two years before the Japanese company Nintendo kick-started the console business once again. In 1986 they released their Nintendo Entertainment System (NES) in the U.S., a version of the Famicom (short for "family computer") which had already done very well in Japan.

By the end of the decade Nintendo had assumed the crown as the most successful console manufacturer emphasizing their victory with the success of their handheld GameBoy (launched in 1989) which outperformed Atari's handheld Lynx released that same year.

Action games

Before 1984's "crash," Atari released action games at a brisk pace. Following up on their earlier successes with vector graphics, *Battlezone* (1980) put the player inside a

tank fighting other tanks in what today looks like an abstract landscape of geometrical shapes. The game was so successful—and was considered so realistic—that the U.S. Army commissioned a special version for training purposes. This Atari–Army collaboration continues to shape present-day debate about the military's use of games.

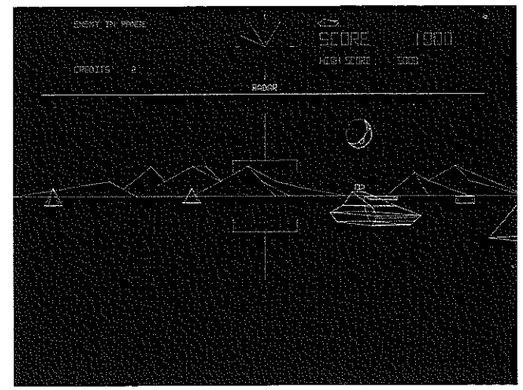

Figure 4.9 *Battlezone*

The same year saw the release of yet another space shooter, although this one less faithful to the original mechanics of *Spacewar*. In *Defender*, the player protected small, inanimate humanoids from aliens who swooped down to the planet's surface, picked up a humanoid and carried him to the top of the screen, where he would transform into a mutant alien. The player had use of a laser, a number of "smartbombs," which would destroy all aliens onscreen, and could also hyperjump to a different part of the screen (a feature well known since a late iteration of *Spacewar*). Whereas *Spacewar* employed a wraparound space made famous by *Pac-Man*, *Defender* used a different version of the same concept. The scrolling game world was circular; going far enough in one direction would place you back in your original position without any apparent relocation of your spaceship. Helpful in the battle was a radar illustrating your position in the game world. While a few years before, an arcade game had been considered successful if 15,000 cabinets were sold, *Defender* approached sales of 60,000.[10]

The thirst for space shooters must have seemed insatiable. Building upon the *Space Invaders* theme, *Gorf* from 1981 was the first arcade game to offer (somewhat) different levels; it also introduced the concept of battling a big bad something at the end of each level—in this case the Gorfian mother ship. Other small innovations included a flickering force shield that would slowly be destroyed by enemy fire, the limited vertical movement of the player's ship, and the ability to shoot only one torpedo at a time (shooting another before the first exploded would cause the previous torpedo to disappear).

After 1980, however, the abundance of *Space Invaders* clones were literally eaten away. *Pac-Man*, deliberately cartoonish and quite simple to play, was a remarkable success in Japan and was then exported to the U.S. Originally called *Puckman*—considered too tempting for English-speaking vandals—Pac-Man was the name of

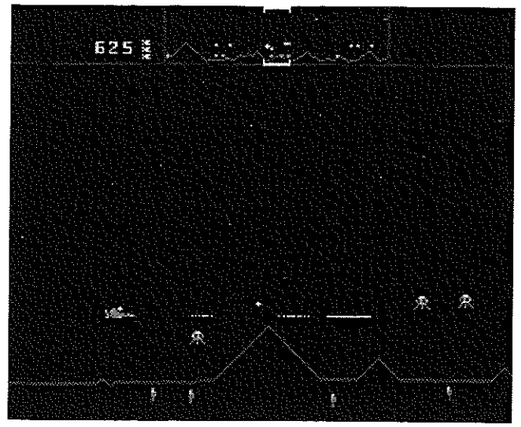

Figure 4.10 *Defender*

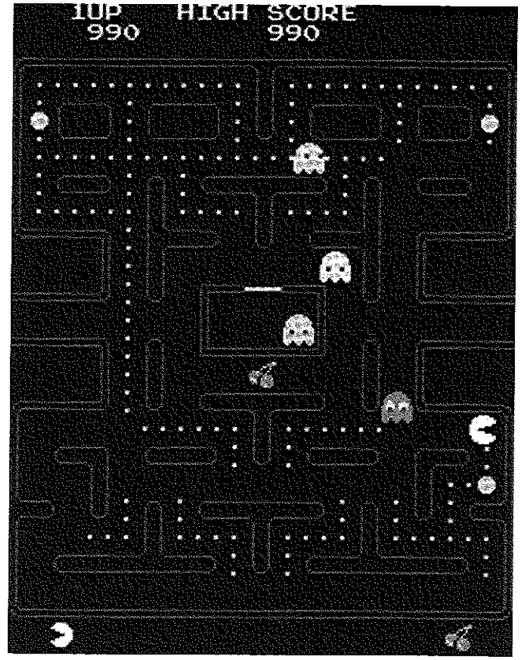

Figure 4.11 *Pac-Man*

a small pizza-like wedge which had to gobble up a maze of small dots and floating fruit, while alternately avoiding and (with the help of "power-ups") attacking the four ghosts that stalked the game space.

As with the earliest games, the player was omniscient and the game was confined to one screen. Thus, although technological advancements were numerous, many successes of the early 1980s were quite conservative. *Pac-Man* was revolutionary, though, in one essential aspect. Unlike all previous game hits, this one had an identifiable main character. Pac-Man was quickly licensed to appear on merchandise—from towels to t-shirts—at no extra cost to Namco, the game's developer, or Bally/Midway, the U.S. distributor. Like cartoon characters, Pac-Man did not develop a Hollywood ego, nor did he demand a cut of the licensing income. The game and the Pac-Man character were so popular as to warrant an ABC TV show (*The Pac-Man Show*) and a slew of clones, copies, and sequels. Of these, *Ms. Pac-Man* was the most important, and became a large success in its own right. Another sequel, *Pac-Land*, transported the adventurous wedge into a sidescrolling world where he had to navigate a series of platforms and obstacles. This piece of the Pac-Man universe exemplifies several important trends in arcade games, particularly the triumph of so-called "platform games," as we'll see below.) With over 300,000 units sold,[11] *Pac-Man* is considered the best-selling arcade game of all time and with the astounding success of character-based cuteness it seriously challenged the powerful sci-fi templates which had long dominated the industry.

Alongside the dominant single-screen game, these years witnessed the beginning of the "platform game," as mentioned above. The game that launched this sub-genre was *Space Panic* from 1980, in which the player controlled an astronaut who climbed ladders and dug holes to combat enemy aliens.

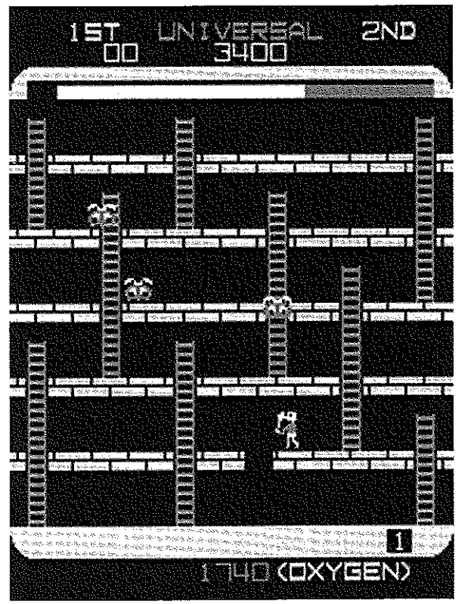

Figure 4.12 *Space Panic*

On a superficial level at least, Nintendo's highly successful arcade game *Donkey Kong* from 1981 (before Nintendo's console successes) drew obvious inspiration from *Space Panic*. Mario, a heavyset and conspicuously mustached plumber, had to move from the bottom of the screen to the top by navigating a series of ladders and obstacles, all to rescue his fiancée from the clutches of a large gorilla. The game launched designer Shigeru Miyamoto's career, and would be the cornerstone of Nintendo's coming success in America. Mario returned, along with his brother Luigi, in 1983's *Mario Bros.*, where they did some actual plumbing. In this non-scrolling platform game, the brothers were out to combat the turtles and other beasts thriving in poorly maintained pipes. Each player bumped his head into the floor below a turtle, flipping it onto its back, and the plumbers could then kill the turtle by running into it. The game's revolutionary possibility—for players to cooperate against a common foe—had been introduced the year before in *Joust*, and would be used to great effect in 1985 in *Gauntlet*.

In *Gauntlet*, up to four players could cooperate in ridding a dungeon of monsters. The four characters—a warrior, an elf, a wizard, and a valkyrie—each had different abilities, betraying the concept's roots in pen and paper role-playing. The game in fact earned Atari a patent, confirming the company's invention of "multi-player, multi-character cooperative play video game with independent player entry and departure."[12]

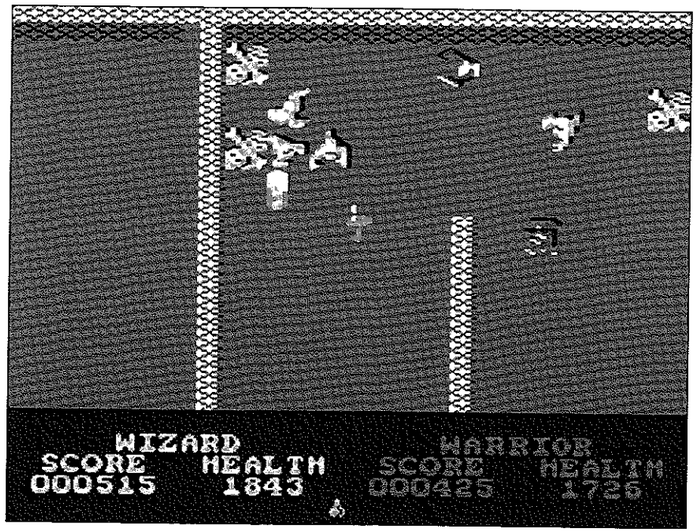

Figure 4.13 *Gauntlet* (Commodore 64 version)

Mario Bros. was followed by *Super Mario Bros.* in 1985—which, like *Pac-Land*, scrolled horizontally—as Mario and Luigi fought to rescue the Mushroom Princess from the evil turtles. This time around, enemies could also be killed by landing on top of them. This version kept a crucial feature of the original—that the player had to decelerate before turning around—even though the ground did not appear to be slippery. This exact mechanism was in turn a legacy of the original space shooters, from *Spacewar* to *Asteroids*.

As the decade continued, platform games became a staple of the action genre with notable examples being *Elevator Action*, *Impossible Mission*, *Wonderboy*, *Rainbow Islands*, *The New Zealand Story*, *Ghosts'n Goblins*, *Prince of Persia*, and *Sonic the Hedgehog*. These introduced a variety of gaming elements—like the need to time your jumps between platforms, to name one of many—which would be standard practice for years to come.

The merging of sideways scrolling and jumping could also be combined with classical space battle themes, as seen in *Moon Patrol* from 1982. Here the player drove a purple vehicle across a futuristic lunar landscape, while fighting alien spaceships above and avoiding holes and rocks (some of which could be blasted away). The game featured "parallax scrolling," in which background layers passed across the screen at different speeds to create the illusion of depth.

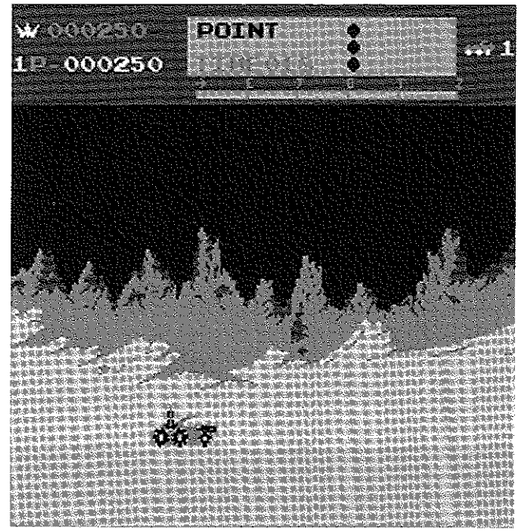

Figure 4.14 *Moon Patrol*

In the early 1980s, driving—particularly race cars—had been a popular electronic pastime for several years. Building upon successful games such as *Sprint 2* (from 1978) and the first-person driving games that followed the success of *Night Driver*, *Pole Position* swept through arcades in 1982. The player raced a car around a circuit, competing against other cars and the clock. Rather than a bird's-eye view, the perspective of the game was from behind the car, which of course constitutes the first of many variations on the first-person driving game.

The intensity and intuitive controls of racing games helped ensure the popularity of this subgenre, along with a string of commercial successes: *Pole Position* was followed in 1983 by games such as *Pit Stop*; the split-screen, two-player sequel *Pit Stop 2* one year later; the stylish *Out Run* in 1986; the motorbike racer *Hang-On*, fast-paced *Lotus Esprit Turbo Challenge*, and the *Test Drive* series that stretched from 1987 to1999. (Later games, such as the *Need for Speed* Series starting in 1995, and the *Gran Turismo* series, first published in 1997, ensured that driving would remain among

the most popular electronic simulations of "real-life" activities.) Other racing games focused less on realism, and more on abstract or cartoonish aesthetics, such as *Bump 'n' Jump* from 1982, *Spy Hunter* from 1983, *Super Cars II* from 1991 and *Mario Kart* from 1992.

Another subgenre that burst onto the scene in the early 1980s was sports games. While individual sports had been simulated many times, a new breed inspired by the 1984 Olympic Games offered the player a variety of disciplines. Following the arcade game *Track and Field* from 1983, Activision published *Decathlon* for the Commodore 64 that same year. The Commodore 64 soon boasted Epyx' "Games" series, inaugurated by *Summer Games* in 1984 and followed by *Summer Games II*, *Winter Games*, *World Games*, the highly popular *California Games*, and others.

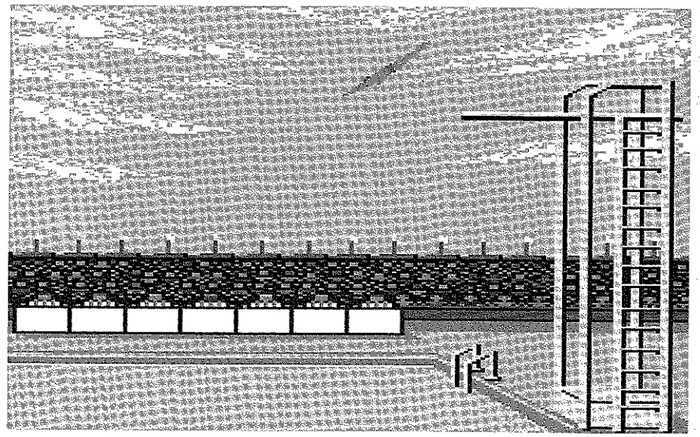

Figure 4.15 *Summer Games II* (Commodore 64)

Shooting games continued to evolve. A noteworthy experiment with form was *Zaxxon* from 1982 which introduced the "isometric perspective." In *Zaxxon*, the scrolling game world is watched from above but at an angle; as the player flies through a heavily guarded enemy fortress, the spaceship's altitude and horizontal position is crucial for survival, making the isometric perspective integral to the game. This perspective was rarely used in action games, with a few notable exceptions like *Blue Max* for the Commodore 64 (from 1983) and 1988's *Paperboy*. More consistently popular in shooters was the standard third-person perspective in a scrolling screen, with games more or less equally divided between a vertical scroll—*Xevious* and *1942* are prominent examples—and a horizontal scroll—*Scramble* and *Blood Money*.

Although cooperative games were quite successful, and sports and other simulation games began to reshape the industry, the classic one-on-one fighting game—with obvious echoes of *Spacewar* and *Gun Fight*—was still very much alive in the 1980s. *Karate Champ* from 1984, for example, was the first two-player karate game. Each level was set in a new arena, a visual convention which would be followed for decades. Similar fighting games following in the mid-1980s include the single-player game *Yie Ar Kung-Fu*, *International Karate+*, and *Street Fighter*, as well as later games from *Mortal Kombat* to *Tekken* to *Soul Calibur*.

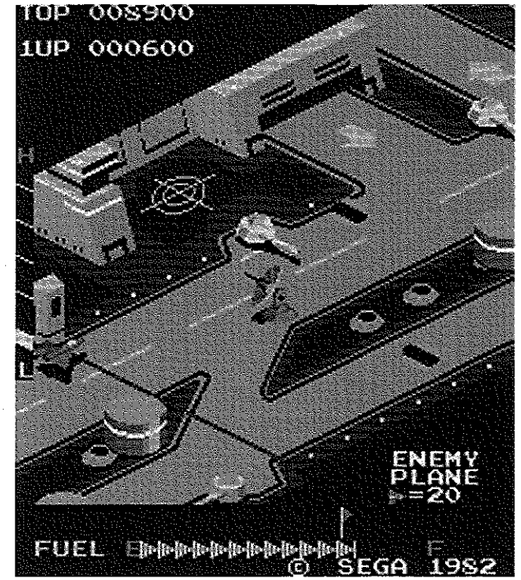

Figure 4.16 *Zaxxon*

The cooperative versions of these "beat'em up" games typically featured a horizontal scroll. One illustrative example is *Double Dragon* from 1987, in which Billy and Jimmy Lee battled a host of street-fighting thugs to save Billy's girlfriend. In an obvious parallel to early moviemaking, the archetypal rescue-the-damsel-in-distress storyline was widely used in 1980s games, including *Donkey Kong* and *Super Mario Bros*. *Double Dragon*, however, was not a feel-good buddy game: players were able to hurt each other (accidentally or not), and at the end had to fight over who got the girl (a feature evident in later strategy games, where victory is handed to the "last man standing").

Strategy games

Games requiring careful analysis and strategic thinking are obviously ill suited for noisy arcades, where games rarely lasted more than a few minutes. However, with the triumphant entry of home computers, games of strategy found an obvious home, and an eager audience.

Strategy games in the 1980s were, to a large degree, direct adaptations of board games or highly inspired by their cardboard brethren. As is still the case today, the genre was built mainly of wargames, although there were important exceptions. The distributor SSI dominated the market in board-game inspired wargames. *Kampfgruppe*, *Gettysburg: The Turning Point*, *Storm Across Europe* and the fantasy-oriented *Sword of Aragon* all expanded (or just copied) the boardgame formula without adding revolutionary new elements.

In 1987, Walter Bright and Mark Baldwin published an updated version of *Empire* (originally from 1978). As in the original, the player began with few resources and

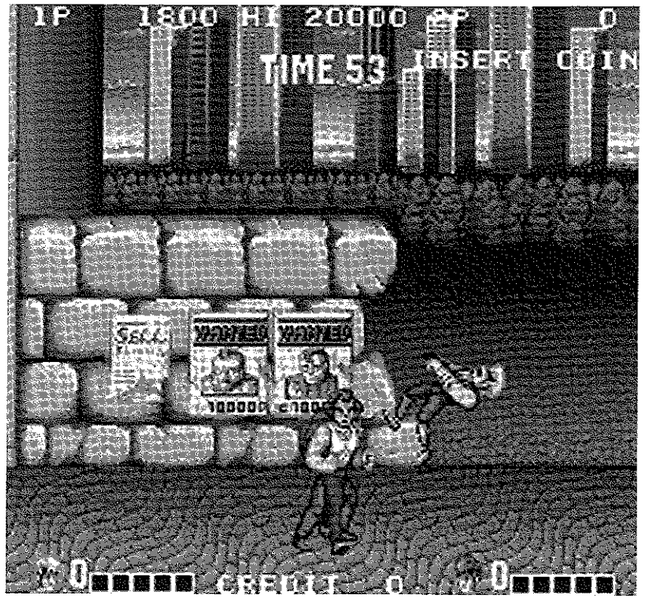

Figure 4.17 *Double Dragon*

explored the game world to find, and hopefully defeat, enemy nations. Although now considered a wargame classic, Bright had serious problems finding a willing publisher. One publisher, Microprose, rejected the game because they were currently looking for action-oriented "real time" strategy simulations. Bröderbund did not find the story original enough nor the graphics advanced enough, and Epyx did not consider it appropriate for their favored platform, the Commodore 64. When released by Interstel, however, the game did prove highly successful.[13]

Several wargames experimented with diplomacy and political maneuvering. In 1985, *Balance of Power* addressed the acute Cold War tension of the era. The player assumed the role of a super power leader trying to win the world over to his side without fatally provoking his opponent (either the computer or a second player) into a nuclear attack. The entire nail-biting experience was made possible by nothing more than graphics of a world map; this economical design approach has enhanced the game as a classic. Although, strategy games interfaces were adapting to the point-and-click era and graphics were becoming more detailed, the genre has traditionally relied very little on impressive visuals compared to other genres.

A small breed of strategy games took the pillars of the genre—the poring over battle maps, the consideration of endless interdependent variables—less seriously. The French game *North and South*, for example, published in 1989, was blatantly cartoonish and focused less on maps and more on utilizing the full visual and audio potential of the Commodore Amiga. The game, based on the comic book series *Les Tuniques Bleues*, was set during the American civil war and would alternate between a strategic level and action sequences. The latter would unfold once the player made the strategic decision to attack a fort or board a moving train.

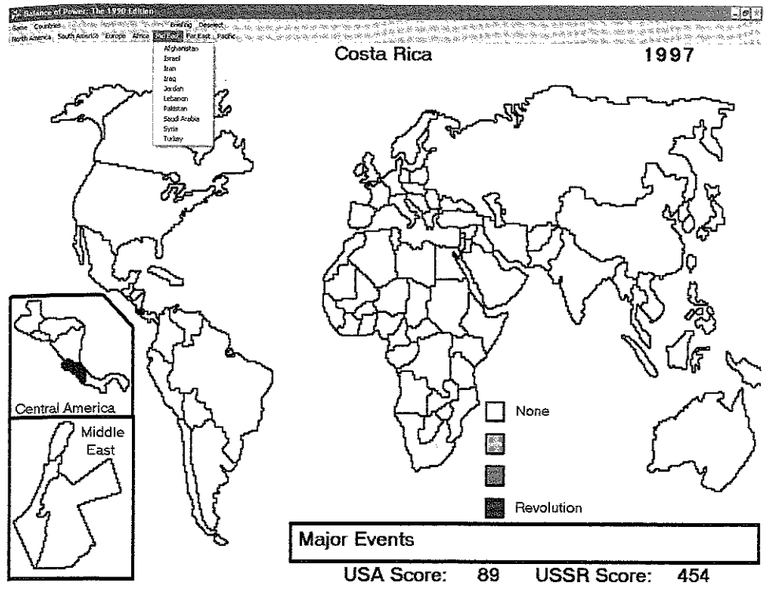

Figure 4.18 *Balance of Power* (1990 version)

Equally colorful but more satirical was *Nuclear War* from 1989, which caricatured real-world political leaders and their simple-minded responses to nuclear threat. Most hardcore strategy gamers were unimpressed; the jokes overrode attention to gameplay, as the computer opponent was capable of only very simple strategies, and the consequences of the game's choices often seemed random.

North and South was not the only game to mix strategy with action sequences. The developer Cinemaware was especially prolific with this hybrid strategy, seen in late-1980s games such as *Defender of the Crown*, *King of Chicago*, and *Lords of the Rising Sun*. The first, remade in 2003, featured groundbreaking graphics and situated the player as a post-Robin Hood British lord vying for control of the country. With limited strategy components, and a reliance on action sequences which seemed to imply that strategy along couldn't keep players entertained, these hybrid games never found universal acceptance by hardcore strategy gamers.

One game that did effectively combine strategy and action was *Herzog Zwei*, released in 1989 for the Sega Genesis (known in Europe as the Sega Megadrive) a strong competitor to Nintendo in the console business at this time where the Genesis was marketed as a cooler and more adult-oriented machine than the Nintendo Entertainment System. In *Herzog Zwei* the player defends and expands his territory while managing resources and creating various military units. In an important departure from all other strategy games (and their boardgame origins), players competed without taking turns. In other words, players made choices simultaneously and without interruption (as they would in any action game like Pong). *Herzog Zwei* thus qualifies as the first real-time strategy game, a subgenre that would prove both hardy and prolific in the decade to come.

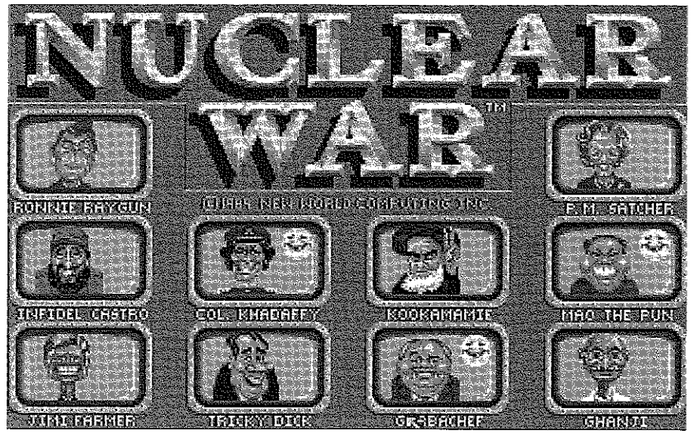

Figure 4.19 *Nuclear War* (DOS)

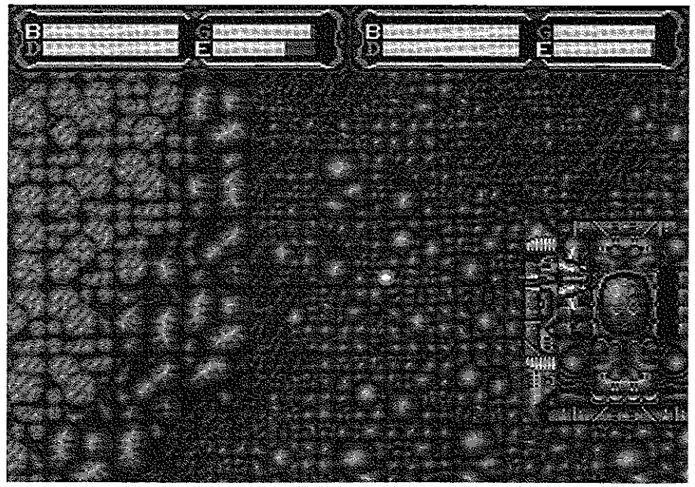

Figure 4.20 *Herzog Zwei*

Two other highly important strategy games helped end the decade with a flurry of creative activity. One of these was Bullfrog's *Populous* from 1989, which combined the real-time concept with an isometric perspective (this would later become a standard combination for the subgenre). The game positioned the player as a deity thriving on worship and capable of godly deeds of wonder and destruction. The second noteworthy entry from the end of the 1980s was the legendary

SimCity, from 1989. Although it featured many strategy elements, it was the culmination of the decade-long merging between the strategy and process-oriented genres, and will be discussed with the latter.

As the 1980s came to a close, the strategy genre looked radically different than it had a mere ten years ago. These games experienced an adolescent-like explosion, moving in a short period from an almost total reliance on text and crude graphics to a wide range of gaming experiences that pushed against the very boundaries of the genre. Strategy game designers had dutifully explored the possibilities offered by board games, and seemed ready to burst into new arenas. Spurred on by the enormous promise of the home computer, the possibilities were endless, though two phenomena stood out, and would continue to alter the genre: real-time strategy and the influence of process-oriented games.

Adventure games

Over the 1980s, multi-user dungeon games (or MUDs) would remain constrained by the lack of networked computers; meanwhile, however, *Zork* and its many offspring would find happy new lives in the rapid proliferation of home computers. The adventure world offered something fundamentally new, and both the technical and the popular press displayed great interest. In 1980, Infocom designer P. David Lebling described *Zork* in *Byte* magazine as not a video game but a "CFS (computerized fantasy simulation) game," defining it as "a new art form: the computerized storybook." He was simultaneously skeptical that Zork could be enhanced by the use of graphics: "the player's imagination probably has a more detailed picture of the Great Underground Empire than could ever be drawn."[14]

The connection to literature, and the player's storytelling imagination praised by Lebling, was essential to ensuring the cultural acceptance of the genre. In what is likely one of the first reviews of video games in its august pages, the *New York Times Book Review* in 1983 described Infocom's *Deadline* as "more like a genre of fiction than a game . . . Infocom has been a major pioneer in such games, which have been called 'participatory novels,' '**interactive fiction**' and 'participastories'."[15] The hesitant use of the label of "game" is both intriguing and revealing, as it demonstrates how different the text-reliant adventure games seemed from their contemporary arcade shooters.

Infocom continued to cultivate their literary image, and many adventure games designers thought of themselves as different—and perhaps more sophisticated—than other game designers A distinct image, of course, had marketing advantages: "old media," like the *New York Times*, might be more interested in a new "art form" than just another video game; and computer owners who didn't consider themselves gamers might be more willing to try a game sold as "interactive fiction." Similarly, early film makers sought to enhance the legitimacy of their medium by associating it with already admired forms of expression, particularly classical theatre. But marketing concerns aside, adventure games were highly innovative (though stubbornly bound to a pure textual interface) and Infocom led the genre for most of the decade.

The aforementioned *Deadline* was the genre's most significant follow-up to the foundational success of *Zork*. Moving the adventure genre out of Tolkieniesque dungeons, *Deadline* drew upon the whodunits standards of mystery novels and movies, as the player maneuvered a New England colonial estate to solve the murder (or was it suicide?) of Marshall Robner. *The Witness*, also from 1983, drew upon many of the same principles, as the player had only twelve hours to solve the

crime story. The same concept was recycled in 1984's *Suspect*, in which the player must defend herself against false murder charges.

Dungeons and detectives were complemented by science fiction plots in *Planetfall* and *Stationfall*. Of these, *Planetfall* is best remembered, as it featured the robot Floyd, one of the industry's first examples of a convincing and dramatically important character who was not a player. (At one point in the game, Floyd would even sacrifice its life for that of the player.)

Other adventure designers, in contrast to Lebling, didn't believe that the player's imagination—weaving visions entirely from text—was crucial to the genre. In 1980, Sierra Online had already introduced the possibility of a graphics-based adventure game with *Mystery House*. This was followed in 1981 with *Ulysses and the Golden Fleece*, set in ancient Greece and featuring color graphics illustrating the player's situation.

So far, however, the nascent use of graphics had merely described events and locations within the games. These static images could not be manipulated but this would change dramatically in 1984 with *King's Quest*. The player assumed the role of Sir Gawai, traveling the magical land of Daventry in search of three treasures. Gawain was represented by an on-screen **avatar** who could interact with nearby objects—which had of course been common in other game genres since the birth of gaming. The player, however, could still only interact with the game via text, and still had to guess the correct combination(s) of words in order to create the necessary commands. Graphic innovation, however small, was rewarded, and the *King's Quest* series became a steady success, with new installments as recently as 1998.

Fueled by this development, Sierra released *Space Quest: The Sarien Encounter* in 1986. Its unlikely hero, Roger Wilco, had survived an alien attack by napping in his janitor's closet, and now had to set things right. The humorous tone struck a chord with many soft-core gamers and the *Space Quest* series lived on until 1995 (with constant rumors of more games being developed since then).

With gamers not traditionally drawn to the genre, Sierra's best-known games may be the *Leisure Suit Larry* series (based on *SoftPorn* from 1981). Larry is an ambitiously dressed and balding wannabe, a lady's man anti-hero who seeks love in a world of pretence, smooth surfaces and low comedy. *Leisure Suit Larry in the Land of the Lounge Lizards*, the first of the series, seemed a commercial failure when released in 1987, but word of mouth made it a slowly building bestseller as well as an informal classic. The third installment, *Leisure Suit Larry 3: Passionate Patti in Pursuit of the Pulsating Pectorals* from 1989, added a novel twist: the player alternated between controlling Larry and his (ex)girlfriend Patty.

Through the first half of the decade, the literary Infocom and the less purist Sierra dominated the genre. However, a development was on the horizon that would do more than add pictures to the stories. In 1987, a gamer's endless search for the right combination of words, long the frustration of text adventures, found an alternative as LucasFilm Games (later known as LucasArts) released the humoros horror story *Maniac Mansion*.

In addition to requiring the player to switch between teenage protagonists, the game introduced the point-and-click interface to the genre. Instead of typing commands, the player would be offered a series of verbs that could be combined with graphical elements in the game by use of mouse or joystick. The player was more constrained than in text adventure games with large vocabularies, but no longer had the aggravation of guessing the right word combinations. The creators

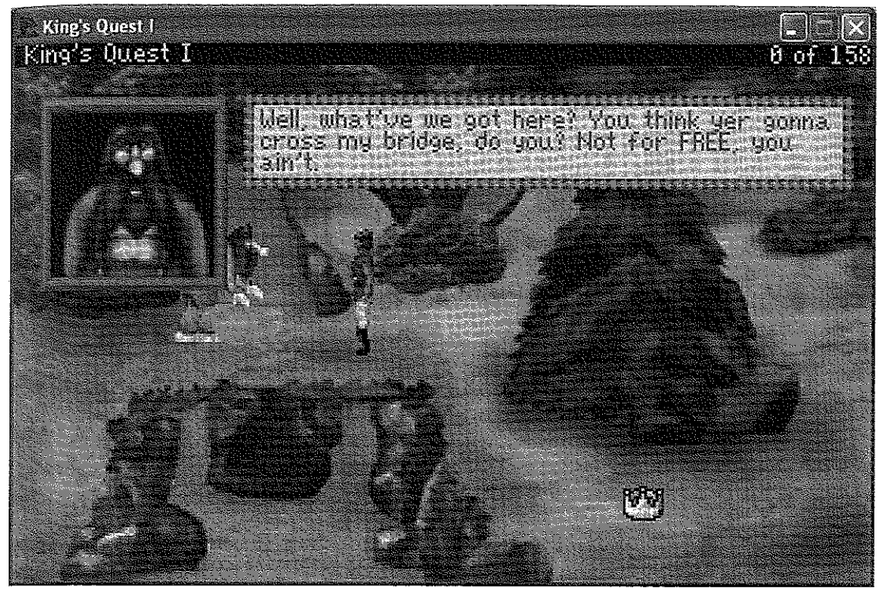

Figure 4.21 *King's Quest I: Quest for the Crown* (2004 remake by Anonymous Game Developers Interactive)

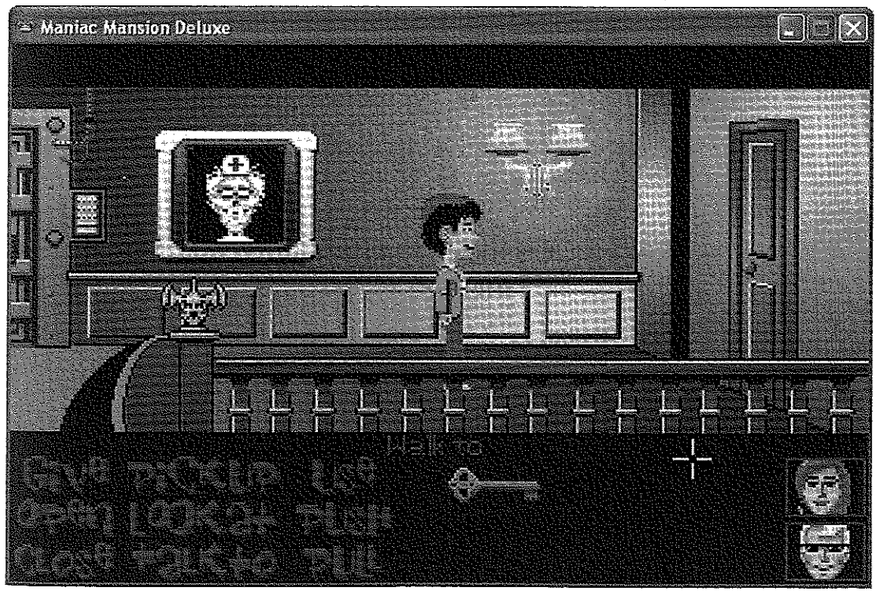

Figure 4.22 *Maniac Mansion* (2004 remake by LucasFan Games)

of 1990's *Loom*, which followed *Maniac Mansions* newfound interface, explained: "[We] think you like to spend your time involved in the *story*, not typing in synonyms until you stumble upon the computer's word for a certain object."[16]

Building on the template, LucasFilm Games soon released the equally witty *Zak McKracken and the Alien Mindbenders*, and followed with *Indiana Jones and The Last Crusade* in 1989. The latter saw the guest appearance of Chuck The Plant, an unusable object from Maniac Mansion, and introduced the phrase "I'm selling these fine leather jackets," which would resonate through later LucasArts games. These intertextual mini-jokes served to reward fans for their loyalty. But more important than this cleverness, the point-and-click interface proved massively appealing, and soon textual interaction was on the decline. A new breed of adventure games was born, and would prosper until midway through the next decade.

Meanwhile, the role-playing branch of adventure games was also blossoming. Through the 1980s, these games remained loyal to Tolkienesque fantasy, and were the genre's most obvious heirs to the *Dungeons and Dragons* legacy focusing on large explorable worlds and relying on the concepts of hit points, skill levels, trade, and random encounters far more than the games produced by Infocom, Sierra, and LucasArts.[17] Especially towards the end of the decade, RPGs also replicated the concept of the adventuring party, in contrast to the genre's reliance on the single protagonist.

Designer Richard Garriot began the decade with *Akalabeth*, which he followed later in 1980 with *Ultima*. Launching a series that would continue until 1999, *Ultima* offered a bird's eye view perspective on the simple graphics that made up the world of Sosaria. Other series soon followed. *Wizardry: Proving Grounds of the Mad Overlord* featured first-person dungeon exploration in 3D vector graphics and inspired a large number of sequels. *Tales of the Unknown, Volume I: The Bard's Tale*, from 1985, colorfully mixed 2D and 3D graphics (two sequels followed). We should also note that RPGs were not confined to home computers. In 1987 Nintendo fans could enjoy (the misleadingly named) *Final Fantasy*, which kicked off a series that would proliferate across platforms for at least the next two decades.

Although not dissimilar in structure to standard adventure games, the openness of computer RPGs would ensure them a very different fate in the decade to come.

Process-oriented games

Much like adventure and turn-based strategy games, process-oriented games were unthinkable in a fast-paced arcade but seemed born for home computers. Indeed quick and intense arcade-like experiences are usually anathema to process-oriented games as many strive for realism while some focus more on recreating the physical experience of dealing with a real-world system—and pay less attention to the game's accessibility or how fun it is, or even if it has a clear victory condition.

Of course, it wasn't only process-oriented games which strove for some sort of realism. One arcade game also lauded for its faithful representation of reality was *Battlezone*. While the 1980 game does simulate a battle tank, it focuses on shooting and the complex controls of the vehicles are downplayed. This was not so in many process-oriented home computer games. In the case of the Microsoft Flight Simulator series, which had a remarkable twenty-one-year run, from 1982 to 2003 the manual for the first game was adamant that "Microsoft Flight Simulator is a

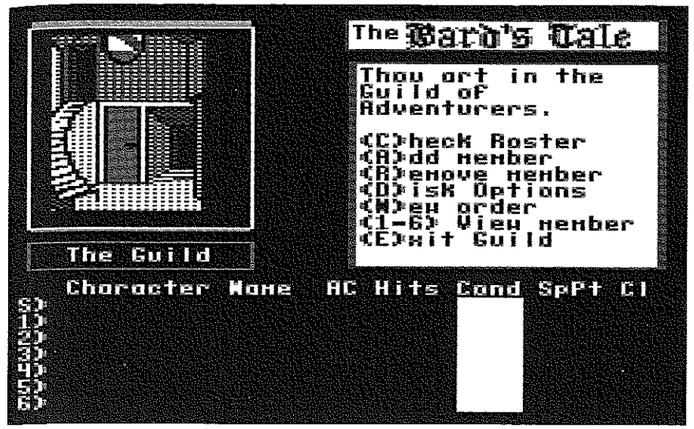

Figure 4.23 *Bard's Tale 1* (Commodore 64 version)

highly accurate simulation of flight in a single-engine aircraft. Its working instruments, panoramic out-the-window graphics view and real-time flight conditions will give you the excitement of flying in a real plane." It also stressed that "Flight Simulator gives you full use of the flight instruments and controls. This instrumentation is so accurate that it meets the FAA regulations (part 91.33) for day and night, visual and instrument flight conditions."[18]

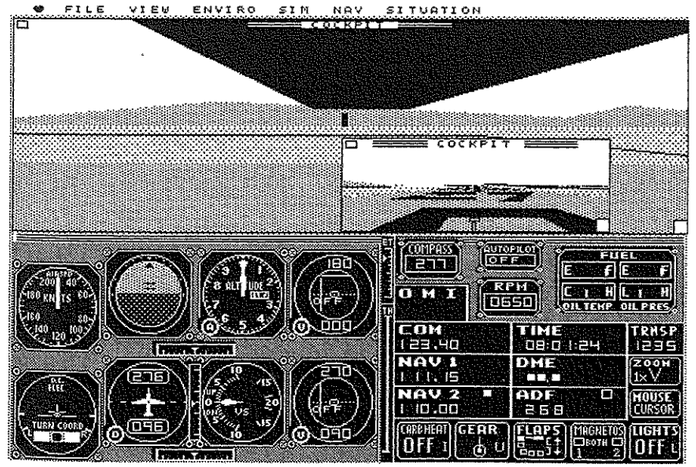

Figure 4.24 *Microsoft Flight Simulator* (1986 MAC version)

The game had a steep learning curve, as players had to slowly familiarize themselves with the complex controls, and succeed in a long flight across fairly monotonous land in order to land at the next airport.

Other process games added action elements to broaden their appeal. Sierra's *3-D Helicopter Simulator* saw itself as "computerized flight training with realistic action!" as it put the player in control of the McDonnell/Douglas "Apache" military helicopter. The 1987 game was also significant as the first to introduce head-to-head multiplayer combat, via the then-impressive technology of a telephone modem.

With the exception of flight simulators many "vehicle" games had optional action modes. You didn't have to engage with the action elements, but could choose to perform them to your liking. Submarine simulations such as *688 Attack Sub* from 1989 and *Sub Battle Simulator* from 1987 took clever advantage of limited processing power. The murky, vague graphics enhanced the paranoia of being in a confined space underwater; just as in the depths of the ocean, there was often very little to see while playing this game, and the player's limited perception of the surrounding world added to the anxiety of playing the game.

One landmark game combined strategy and action more seamlessly than many contemporary genre hybrids—the 1983 space merchant classic *Elite*. One of the first home video games with **polygon** 3D graphics, *Elite* also sported a pompous (if technically simplistic) 2001-style classical soundtrack. The player was plopped into a huge universe (seemingly constructed at random) with a modest spaceship and limited cash. From these humble beginnings the player had to engage the worlds around her with some combination of trade, smuggling, bounty hunting, and quest-solving. Approaching a floating, three-dimensional, semi-abstract space station at low speed was an experience unparalleled in game history. With no storyline or set goal, the game created a unique sense of vastness and unlimited opportunity, and was among the most revolutionary home video games of the time.

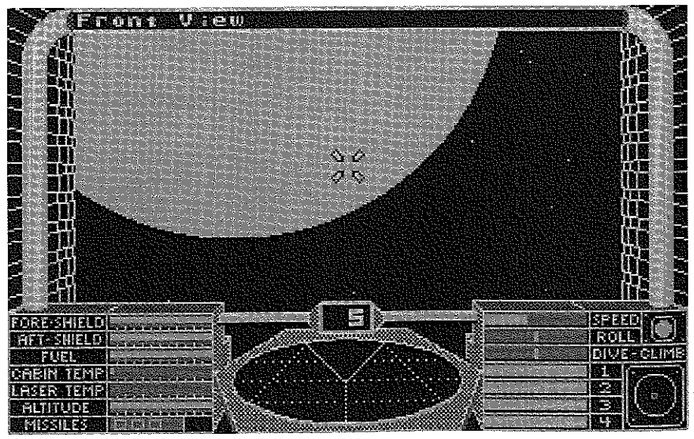

Figure 4.25 *Elite* (DOS version)

Figure 4.26 *Sid Meier's Pirates!* (2004 PC remake)

The idea of open-ended games lacking clear conditions for victory slowly caught on. One innovative game, which offered dynamic world (although it did have a goal and could, in fact, end), was *Sid Meier's Pirates!* from 1987. As an aspiring pirate, the player traveled the Caribbean in search of treasure and fame. You could follow various plot strands, with their resulting ebb and flow of alliances, which created the impression of being just one person in an evolving world.

Despite their landmark innovations, the fame of *Elite* and *Sid Meier's Pirates!* pales next to *SimCity*. In this 1989 game, the player assumed the role of mayor, and managed a city that would grow or diminish almost organically in response to the player's choices on everything from zoning and construction to taxation. Angry citizens might protest and leave the city, while a content populace would settle down, have more children and generate more income. Since all parts of the game's world interacted, a fairly small number of game settings and variables would elicit complex behavior from the system. Apart from this complexity, of course, the design draws upon the *Hamurabi* legacy (see p. 58) of managing a world, though the popularity of *SimCity* would influence not just design of future games, but the role of the entire industry within American—and world—culture.

Meanwhile, various MUDs had descended from the original, and some manifestations of the genre belonged more to the process-oriented category than to its

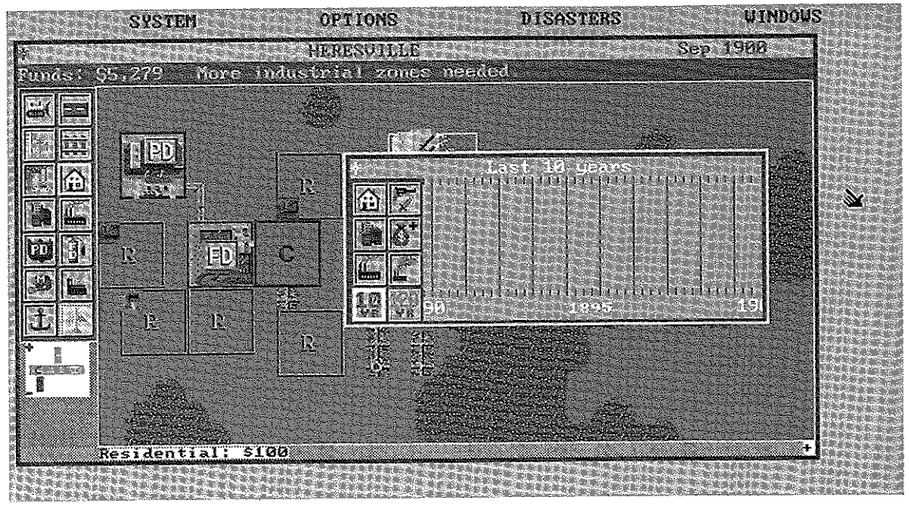

Figure 4.27 *SimCity* (DOS)

adventure brethren. Of these, *Habitat* stood out, applying the LucasFilm ethos of moving away from text and towards cartoonish graphics. Launched in 1985 for the Commodore 64, its players logged in via modem and encountered a graphical world full of social interaction and quests. The concept was very ambitious, and encountered equally difficult technical and social challenges.[19] Though plagued by these problems, many of the lessons learned (as well as the actual features used) inspired "social worlds" for years to come, including *There.com* and *Second Life*, both launched in 2003.

At the end of the 1980s a great deal had happened. Many genres and subgenres had solidified into formats still going strong today (perhaps most evident in the case of single-player RPGs). Also, the console-based business had fallen from legendary pre-1983/1984 heights against most predictions, only to resurface within a few years to co-exist with home computer gaming. Video gaming itself had become a staple of pop culture which most children—and sometimes indirectly their parents—had experienced and worried voices had been raised about the influence of gaming on young minds.

At the end of the decade game production was also quite a different undertaking than in earlier days as increasingly powerful hardware formed the backdrop of an audiovisual arms race and necessarily more complex game production processes. This latter trend would continue with great strength into the 1990s and beyond.

THE 1990s

Though most video games relied upon already established genres and conventions during the last decade of the twentieth century, a few developments were truly significant. In the technology arena, the personal computer (by now universally referred to as the "PC") awoke fully as a hardcore gaming platform due to major advances in sound and graphics hardware. A well-equipped PC rivaled the audiovisuals of all but the very newest consoles at any given moment. In addition, the spread of network technology and the rise of the Internet created both explosive growth and broad diffusion, which would change both the experience of playing a video game and the game design templates themselves. Meanwhile, the commercial introduction of the CD-ROM as a software storage medium simultaneously destroyed the floppy disk and swiftly increased the size of a typical game. And in the realm of graphics, by the decade's end 3D polygon graphics would replace two-dimensional graphics as the industry standard. By 1990 text-input interfaces were only seen in marginal examples of the adventure genre and in MUDs (although home computer games usually rely on a combination of keyboard and mouse).

In terms of genres, the classical adventure game would start a long decline in the late 1990s, and action games would be forever marked by the arrival of the first-person shooter template around 1993. More generally, the four genres, as we have described them here, begin challenging their own boundaries. Towards the last third of the decade, hybrid games became the norm instead of the exception. Action games would employ strategy elements, strategy games would lean towards action (most notably in the prolific subgenre of real-time strategy), and adventure games would continue to spice up their puzzle-solving with action sequences.

As to consoles, the Nintendo Entertainment System (NES) still dominated at the end of the 1980s, but began to encounter unprecedented competition from Sega's Genesis. Nintendo, which used gray plastic cartridges for storage, had succeeded partly by a tight control over game production, to avoid flooding the market with low quality games. Sticking to cartridges, however, meant costly products and harsh publishing rules regarding content and quality made life difficult for many developers. Furthermore, as Nintendo strove to maintain their machine's family-friendly image, Sega contrasted their own console as cool and radical (embodied in the early 1990s slogan, "Sega does what Nintendon't"). The same strategy would also be used by upstart video game producer Sony, as their 1994 PlayStation outclassed the Sega Saturn and two years later continued to sell well against the Nintendo 64 (which was further troubled by Nintendo's loyalty to cartridges). Sega, in 1999, did well with their Dreamcast console (the first to be designed for online play) although within just a few years the competition became too harsh, and they changed strategy towards developing game titles only.

The growth of local area network technology (computers close to each other sharing a network) across the globe, and the emergence of the World Wide Web, created the perfect conditions for multiplayer gaming. The wiring of the world also to some extent meant the return of the arcade—now in the form of gaming cafés (more pervasive in some countries than others. Whereas home computers had isolated players in some ways, network technology brought them back together.

Action games

The action genre displayed limited creativity or originality at the decade's outset. In 1992, however, change appeared in the shape of *Wolfenstein* 3D. The game, based on an earlier 2D game, was the original first-person shooter (although it was preceded two months earlier by *Ultima Underworld: The Stygian Abyss*, the first modern-looking 3D action game with a first-person perspective). In *Wolfenstein* 3D, the player was a lonely soldier invading a Nazi castle; the gameworld was seen solely through the

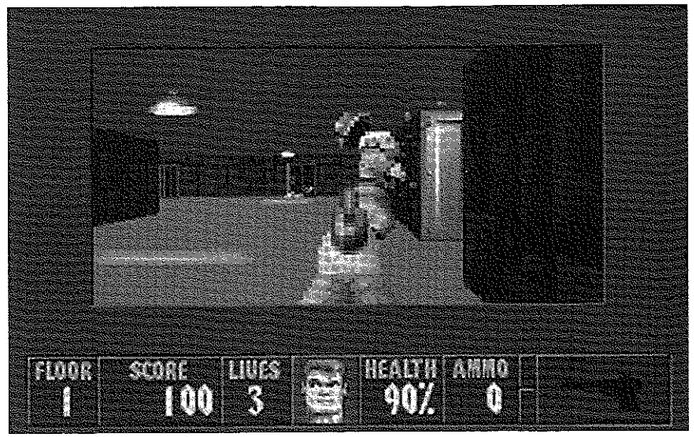

Figure 4.28 *Wolfenstein 3D*

eyes of the protagonist. Although the player could move freely in the game world, the graphics were not technically 3D, since they consisted of 2D objects and not of three-dimensional polygon shapes.

Though popular, the game could not prepare the world for1983's Doom. The player assumed the role of a lone no-nonsense solder defending the universe from the unfortunate, and seemingly unceasing, onslaught of the hordes of Hell. Since such creatures are not known to engage in constructive dialogue, the player was required to use varied weaponry to send them all back to where they came.

As with *Wolfenstein 3D*, the developers at id Software released the first version of Doom as shareware, meaning it was available for free on the Internet. The game's server was quickly and then persistently overloaded.[20] And as with the previous game, Doom was easily modified, causing an intense interest among serious and casual game designers alike; altered versions of the game thrived on online bulletin boards and as separately marketed productions (which required the original to play).

Its striking difference from mainstream action titles, as well as its creative and efficient use of sound and graphics, was enough to ensure *Doom*'s fame. However, it also became one of the earliest mainstream games to make good use of local area network technology, as players could fight head to head in the slime-ridden hallways.

Doom made a huge imprint on action games from the mid-1990s onwards. *Doom II* updated the original's success. *Hexen* used the *Doom* setup for fantasy purposes. *Quake* embellished the concept with true 3D graphics. *Unreal* introduced more story elements, while *Half-Life* played successfully with alien/conspiracy pop culture themes. A subset of the now ubiquitous first-person shooter—the tactical shooter—arrived in 1998 with *Delta Force*, which relied more fundamentally on multiplayer gaming and required cooperation and coordination skills.

A subgenre born into great popularity in the previous decade—the platform game—converged in 1996 with adventure structures and 3D graphics in *Tomb Raider*; this action-paced archeological expedition also represented a very different merger, between the video game industry and pop culture, as it introduced one of gaming's most famous virtual personalities, adventuress Lara Croft.

Figure 4.29 *Doom*

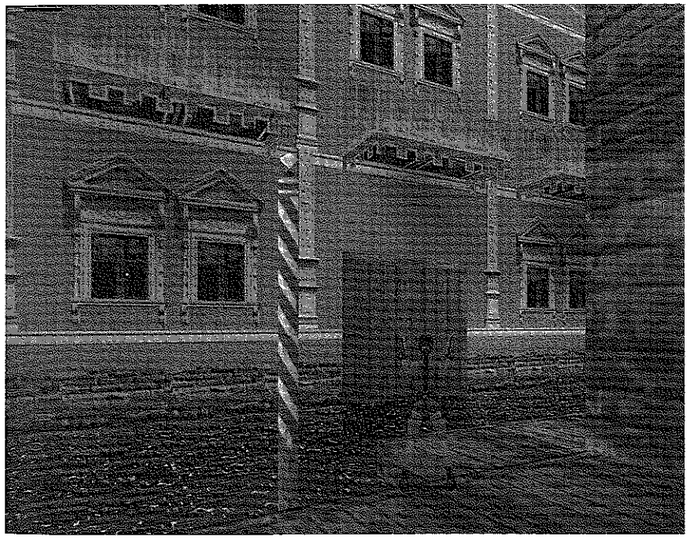

Figure 4.30 *Tomb Raider II: The Dagger of Xian*

In "The first real 3D interactive exploratory adventure," as the game claimed, the player guided Lara, scantily dressed and wearing her two trademark guns, as she hunted through temples and jungle levels to find a lost artifact. While competently designed, the Lara Croft personality (and indeed appearance) was far more important for the popularity of these games. Lara became a symbol of cool,

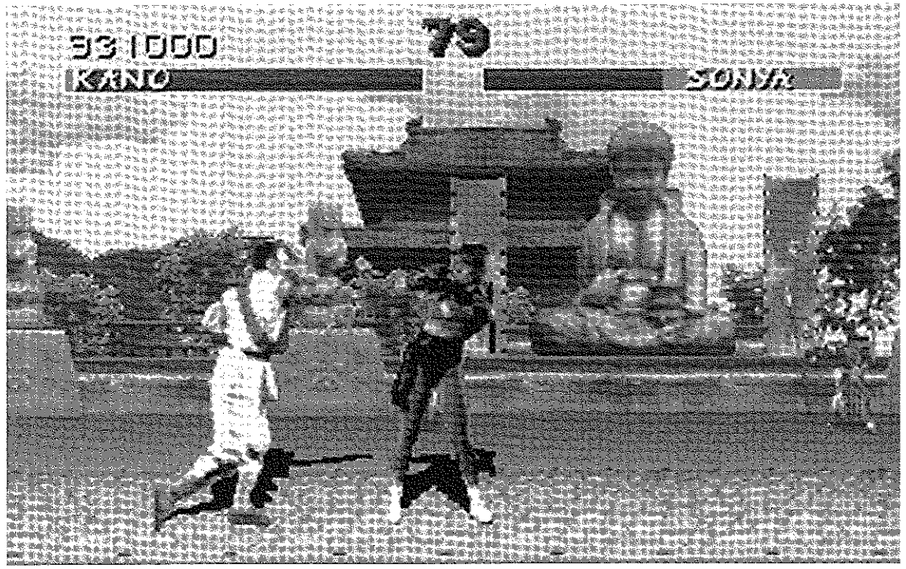

Figure 4.31 *Mortal Kombat* (DOS version)

appearing in life-style magazines and throughout the media landscape; she was both a favorite icon of the era's girl power movements as well as an academic object of desire for cultural studies of various persuasions. By all accounts, Lara paved the way for other female game protagonists, such as Jill of the *Resident Evil* series and the female prisoner of *Unreal*. The limited creativity of the game and its sequels eventually diminished its cultural relevance, but not before it provided the basis for one of the most commercially successful game adaptations for cinema, first in 2001's *Lara Croft: Tomb Raider* and then in the follow-up *Lara Croft Tomb Raider: The Cradle of Life* two years later.

Sometimes, of course, one does not need to be creative to make an impact. Violence, quite often, will do the trick. This was one of the principles behind the one-on-one fighting game *Mortal Kombat* from 1992 (which we will return to). The game looked like many other action titles, but was distinguished by noticeable features, which horrified many and delighted more than a few: each character had a number of "fatality moves," and with a few dexterous combinations of the **controller**, your defeated opponent could be killed in various gruesome ways. The parental and media outrage to follow would become a cornerstone in the U.S. Videogame Rating Act of 1994, which forced the industry into establishing a system for rating games.

Another game that fueled the same fears was *Carmageddon*, which built heavily on standard racing templates, and used mechanics reminiscent of *Death Race*, but offered far more lifelike casualties. Apart from this, subgenres such as racing games, thrived during this decade but did not make any noteworthy conceptual changes. And while action games did make use of the increased storage capacity represented by CD-ROMs, this change was quite gradual, and its fruits would not truly be seen until the following decade.

Adventure games

Continuing their innovative approach to interface design, LucasArts in 1990 published the intriguing *Loom*, in which puzzles were solved by the use of magic operated by use of music (notes were selected with the mouse to construct brief musical snippets with various effects). That same year they released an adventure game classic, *The Secret of Monkey Island*. The game, a pirate parody stuffed with pop culture references, obviously needed sword fighting. So what could one do if one doesn't want actual action sequences? LucasArts introduced us to "insult sword fights," where the player dueled using a series of proposed insults that had to outclass her opponent's taunts.

A large splash was made by the 1993 arrival of *The 7th Guest*, a haunted house story that was one of the first games to utilize the storage capacity of the CD-ROM medium. The game in no way challenged the boundaries of the adventure genre, but it was technically ambitious as its graphics were digitized film clips populated by real actors. This was impressive to many, but bought at the price of limited flexibility in terms of player actions. The game also began a tendency towards marketing games by their size, notably followed by Sierra's *Phantasmagoria*, which also starred real-life actors and spanned seven CDs.

The genre's technical evolution is also embedded in Sierra's *Gabriel Knight* series, featuring the decade-long investigations into the occult matters of "shadow hunter" Gabriel Knight. In the first game, *Gabriel Knight: Sins of the Fathers* from 1993, all graphics were 2D and hand drawn in the style of *King's Quest* from a decade earlier. The sequel, 1995's *The Beast Within: A Gabriel Knight Mystery*, leaped to the use of digitized film on background photos, and the latest game—*Gabriel Knight 3: Blood of the Sacred, Blood of the Damned*, from 1999—mixed several types of graphics but relied mostly on the 3D polygon mode. These changes are indicative of adventure game design in the 1990s. As designers began to utilize the increased capacities of CD-ROMS, and as possibilities for three-dimensional graphics grew, the look of adventures games became far more complex and mesmerizing. The genre's most famous development was the

Figure 4.32 *The Secret of Monkey Island* (DOS)

digitized "interactive movie" experiences of the middle of the decade; games like *Ripper*, *Phantasmagoria*, and the second *Gabriel Knight* installment, flirted heavily with Hollywood, often using popular screen actors as the basis of the game's characters, and designing the game using classical cinema conventions.

Before all of this, however, *Myst* happened. Released in 1994, *Myst*'s strong narrative and atmospheric world made it one of the most famous and bestselling home computer games ever. Its appeal to the literary-minded is obvious: in addition to the thematic focus on books and reading, the ability to wander through this world offered an altogether meditative experience. The game was taken seriously by the media, and widely reviewed in the literature sections of newspapers and elsewhere.

Myst, like the decade's other adventure games, did have one large problem. It was decidedly single-player, and since it was based on tightly woven narratives that didn't allow for much (if any) unexpected interference, it couldn't take advantage of the explosion of network technology in the second half of the decade. Though plenty of successful adventure titles were released during the 1990s—*Alone in the Dark*, *Day of the Tentacle*, and *Under a Killing Moon* are just a few of the other most popular ones—the genre in its classical form was struggling for air.

Role-playing games, on the other hand, let nothing stand in their way. SSI kicked off the decade with a series of games based directly on *Advanced Dungeons and Dragons*[21] rules and game worlds. While some, such as *Champions of Krynn*, from 1990, were classic *Ultima* style games (using the isometric perspective) others such as *Eye of the Beholder* employed the first-person perspective as the player traversed dungeons fighting monsters in real-time. Other older series were continued side by side with stand-alone games; most of these, like 1992's *Darklands*, were based on standard RPG conventions.

Figure 4.33 *Myst* (2000 remake)

Figure 4.34 *Baldur's Gate II*

A few other adventure games deserve individual note. Complexity and creativity were beautifully merged in the post-apocalyptic *Fallout* from 1997, and 1999's philosophical amnesia thriller *Planescape: Torment*. As was the norm throughout the decade, these games used the isometric perspective, probably because it affords a clear sense of space in combat situations while keeping the player close to the protagonist(s). While not structurally innovative, *Baldur's Gate* from 1998 set many new adventure standards, because of its impressive size and extraordinary freedom of choice within the game, as the player decided whether and how to complete quests and engage with the world's many subplots.

Many continued to appreciate the virtues of this game type, even if it did not truly adapt well to multiplayer play.

Strategy games

At the start of the 1990s real-time strategy games had just blinked into existence. With *Dune II: The Building of a Dynasty* this subgenre would find a form so powerful that today's games are merely more complex variations. Later games include *WarCraft: Orcs and Humans*, *Command and Conquer*, *Age of Empires* and *StarCraft*. These games differ in their speed and complexity, but typically focus on eradicating the enemy while building up an economy based on one or more resources (spice in *Dune II*, for example, and food, wood, stone, and gold in *Age of Empires*).

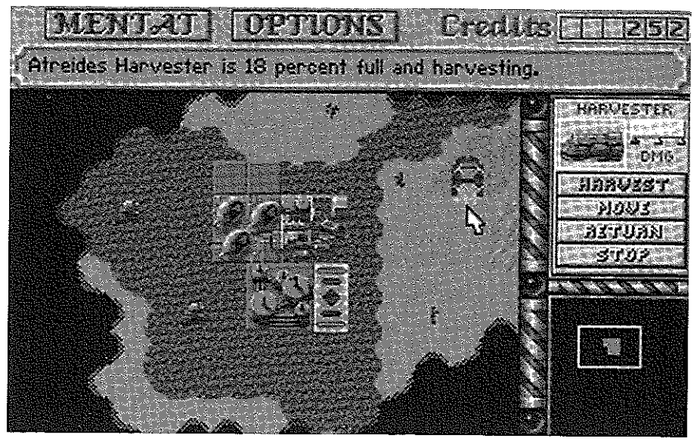

Figure 4.35 *Dune II*

And unlike their adventure cousins, Real-time strategy games adapted smoothly to the new possibilities of network technology, becoming hugely popular for online or LAN play. As the complexity of these networked worlds has grown, various features have been introduced to help players keep track of their nations. But in an interesting lack of innovation, real-time strategy (unlike almost all other games) remained a 2D pastime; only in the following decade would they experiment with polygons. The basic gameplay of most of this subgenre, however, remains much like that of *Dune II*.

Turn-based strategy games, however, did anything but roll over and die. *Warlords*, for example, was a popular 1990 game that allowed up to eight people to compete on the same computer. It was quickly overshadowed the following year by Sid Meier's *Civilization*, which was an international smash hit. The player chose from among a series of historical civilizations to lead towards glory. The game's fame arose not because of its features, but in the way it combines familiar gaming elements in highly entertaining ways, creating a wide range of playing styles and strategies.

Adding various elements and a new theme to the sub-genre, 1994's *Master of Orion* dropped the player into a galactic battlefield, where he had to command a race for domination of the universe. From the same publisher, Microprose, came *X-COM: UFO Defence*, in which the player desperately defended Earth from alien invasion. The game offered two distinct modes: on the "Geoscape" level, the player managed and deployed assets, while on "Battlescape" the player fights the aliens in turn-based combat with an isometric perspective.

Process-oriented games

Though the standard adventure games like *Myst* didn't take advantage of the newly wired gaming world, other entries—that existed between the adventure and process-oriented genres—did adapt to the demand for multiplayer experiences. Certainly, *Ultima Online* from 1997—the first mainstream large-scale persistent[22] online game world—did look much like its single-player brethren. The game built

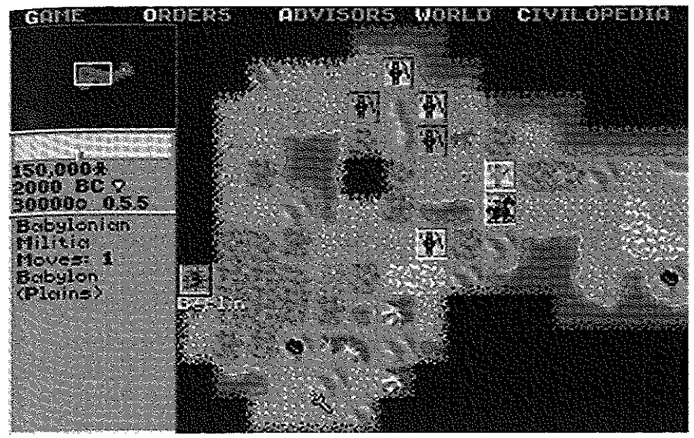

Figure 4.36 *Civilization*

on the foundation of 1985's *Habitat*, but also on the semi-successful *Meridian 59* from 1996, which (not unjustly) had introduced itself as "The First-Ever Internet-Based 3D MUD."

Ultima Online, like the MUDs, invited players to create characters and explore a universe of adventure housed in servers around the globe. As opposed to most MUD creators, however, Origin—the developer of *Ultima Online*—had a serious business plan. Players would buy the game box, including the client software, and also pay a $10 monthly subscription fee to play. The game, not quite as pretty as its offline contemporaries, used the isometric perspective and a highly complex character and skill system. *Ultima Online*, much to the surprise of most observers, had 100,000 paying subscribers within the first year. Ten dollars multiplied 100,000 times is, of course, a substantial sum and other developers followed suit. Problems quickly arose, however. Origin quickly learned the difference between friendly, bug-tolerant MUD users and paying customers, as a group of disgruntled players filed a lawsuit against the distributor for negligence, breach of contract, and intentional misrepresentation. The case was settled out of court, but offered the first look at the brave new world—and the many accompanying problems—faced by the makers of such technologically innovative games.

THE 2000s

At the time of writing, a series of trends is giving shape to the current decade of the video game industry. First of all, hardware capability is increasing rapidly, creating the possibility of evermore technically ambitious games. In the last few years, the game production process is taking on the proportions of film production. The production and marketing costs for a full-scale game currently reached a staggering $25 million for the most expensive game projects and with such large sums of money floating around, these games can only be created by experienced professional teams with a broad range of skills. Some have argued that since failures are so costly, a conservatism is overtaking the industry.[23] There are indeed an astounding

number of sequels released today. However, sequels are nothing new; we need only recall the number of *Pong* clones that flooded the market at the birth of arcade gaming to realize that the industry, in all of its stages, has always tried to ride the wave of success.

Although production of full-price games becomes more and more expensive, we have seen an opposing trend which should give pause to those lamenting the conservatism of game designers. The World Wide Web has become a raging river of experimental and independent game production as various software products enables anyone with a PC and a modicum of skill to create and publish her own games. Furthermore, through the publication of astounding numbers of game design books, designers have begun—at an unprecedented scale—to share their hard-earned experience and converge their vocabularies. A few of the most significant of these titles have been discussed in the current chapter.

The growing breadth and depth of gaming knowledge coincides with the steady growth of university programs on game design. The start of the twenty-first century also marked the explosive birth of video games as an academic object of study. For some time considered unworthy of critical analysis video games are now working their way into academia with the growth of our field witnessed in journals like *Game Studies* and *Games and Culture* and in the diverse scholarship presented at conferences like the bi-annual conference of the Digital Games Research Association.

Returning to the rudiments of the games themselves, the industry's hardware is the site of more and more intense battles for control of the market as mentioned in Chapter 2. Three video game consoles presently compete for market shares: Microsoft's Xbox 360 (2005), Sony's PlayStation 3 (2006) and Nintendo's Wii (2006). To most people's surprise Nintendo is beating both of the top dogs in terms of units sold with their fresh and innovative Wii that bets on a truly new interface that inspires new forms of playing.

The PC, it seems, is becoming less economically important for game publishers. Only 16.6 percent of games were sold for the PC in the U.S. in 2005.[24] This marks a decrease from 27 percent in 2001 although the PC remains an important platform for online games. Piracy may explain the decreasing commercial importance of the PC, as it is much easier to copy and distribute PC games than console games; access to pirated games may mean, in fact, that the PC as a platform is still more popular than game sales would imply. Another crucial development—at least in the minds of financial forecasters and investors—is the rise of mobile gaming, which has come on the heels of the cell phone boom, and aided by the increased processing power of PDAs and the growing number and capacity of handheld video game consoles especially the PlayStation Portable (2004) and the Nintendo DS (2004). Mobile gaming has yet to feature truly novel designs, although it has re-established an interest in how to design games under severe size constraints; looking towards the future mobile game concepts which make use of the player's location and context show considerable promise.

On a broad level, the business of video games is booming. U.S. sales have more than doubled in less than a decade, rising from $3.2 billion in 1995 to $7.0 billion in 2005.[25] The rest of the world is also experiencing growth with Europe especially slowly catching up with the U.S. market in sales. The industry's economic vitality is all the more remarkable considering that no design revolutions are yet apparent in the current decade. Instead, genres keep merging, and tried and true designs continue to be incrementally improved.

Action games

The offspring of *Doom* live on. First-person shooters are everywhere. In the last few years the trend has moved towards team-based (rather than single-player) tactical shooters. World War II is a hugely popular setting, as seen with *Return to Castle Wolfenstein Battlefield 1942*, and *Medal of Honour: Allied Assault*, to name but a few. Exceptions, however, abound, the most significant being *Halo*, which successfully accompanied the launch of Microsoft's Xbox in 2001, and was then followed by *Halo 2* in 2004. *Halo* is a story-driven first-person shooter in a science fiction setting, in which two players can cooperate in slaying the alien hordes. The game was almost universally praised, and took home a whole series of the Interactive Achievement Awards bestowed by the Academy of Interactive Arts and Sciences in 2002.

Halo's success has also resonated beyond the game's own profits. Since one obvious disadvantage of the Xbox was its release without an existing game library (in contrast to the PlayStation 2 which could run existing PlayStation games) the success of *Halo* in all probability did much to ensure its acceptance.

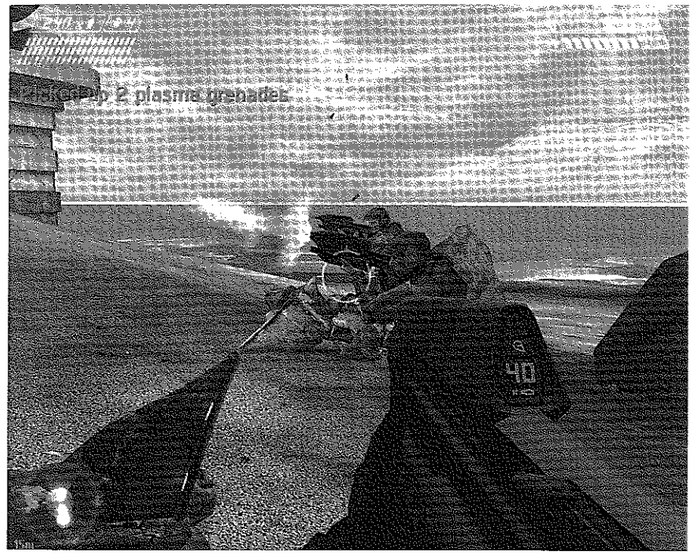

Figure 4.37 *Halo* (PC version)

With 2003's *Max Payne II: The Fall of Max Payne*, shooters began exploring their interactive environments in earnest. With increasingly advanced engines, objects in most game worlds—from barrels to tables—are now programmed to interact with other objects (or characters) in realistic, often unpredictable, ways. Whereas *Max Payne II* may have been a pioneer in creating the feel of a "living" world, this vibrancy felt more integrated with the gameplay in releases like *FarCry* (from 2004) and *Half-Life 2* (from 2005).

The continued success of consoles has had the consequence of encouraging non-tactical shooter games. Until recently, consoles were mostly confined to offline play, and the result has been a design focus on viable, single-player formulae. One sign of these constraints is the growth of "survival horror" games in this decade as in the previous one. The most famous of these are the *Silent Hill* series, released between 1999 and 2003, and the *Resident Evil* series released between 1996 and 2006. These games which pitch a single player against a creepy, often zombie-ridden, environment need only relatively simple controls.

The action genre—and the industry as a whole—has also been shaped by the growth of exclusive distribution rights, where a developer will make a game for only one console. Existing consoles have had notable exclusive hits—*Halo* and *Project Gotham Racing* for the Xbox, *Metroid Prime* and *The Legend of Zelda* for the Gamecube.[26] But with the exception of *Halo*, these do not compare with Sony coup in acquiring *Grand Theft Auto III*, its offspring *Grand Theft Auto III: Vice City*, and later *Grand Theft Auto: San Andreas* from 2004. *Vice City* in particular, which started humbly as an expansion pack,[27] has reached legendary status on two very different fronts. The game's questionable moral code have made it a favorite target of those who protest against violence, and the original version has been banned in several countries. The protagonist is a gangster who undertakes various shady assignments and acquires funds in rather unethical ways (the most infamous is having sex with a prostitute and robbing her afterwards). Had this been the game's only claim to fame, however, it would have been little different from controversial titles like *Death Race* and *Mortal Kombat*. To many, *Vice City* is also an astounding piece of game design. It reaches new levels of openness, allowing the player unprecedented use of the objects in the game world, and also displays a coolness of style alien to many games as it parodied (or paid homage to, depending on your interpretation) bad police fiction of the 1980s. Thus, the game to cause the loudest outrage in recent time also became America's best selling console game of 2002 (followed the next year, in fact, by *Grand Theft Auto III*).[28]

Nintendo offered a bold alternative to the decade's barrage violence—shooter and otherwise—with the 2001 release of *Super Monkey Ball* for the GameCube console. The game soon joined their large number of successful franchises, though the gameplay itself was novel, as four players each guided a monkey inside a ball through various obstacles. The game highlighted the difference between Nintendo's and Microsoft's approaches, as the former stressed casual light-hearted play and the latter tended towards hardcore game formats. *Super Monkey Ball* also embodied the growing popularity of non-realistic, (mostly) non-violent games, suitable for group play at a party as much as for the solitary gamer. Another explosive example of these alternative action titles are rhythm games, such as *Dance Dance Revolution* from 2001. Originally popular in Japan, they have received increasing international attention in recent years, even being praised by school systems in the U.S. as a means to combat childhood obesity.[29]

Adventure games

In sharp contrast to the obvious importance of the action genre, classical adventure games today struggle for life. The struggles, however, are sometimes quite heroic. Third-person sci-fi story *The Longest Journey*, which featured the female protagonist April Ryan was lauded as an honorable specimen when released in 2000. The same critical praise befell *Syberia* two years later, a game that also used colorful pre-rendered backgrounds and relied largely on 2D graphics. This somewhat nostalgic

Figure 4.38 *Grand Theft Auto III: Vice City* (PC)

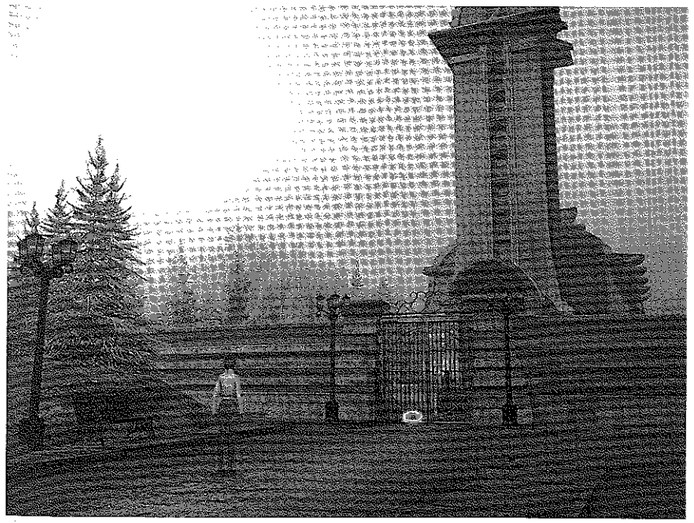

Figure 4.39 *Syberia*

form is not dominant, however, as witnessed by 2003's *Broken Sword: The Sleeping Dragon*, which featured a 3D world of free-perspective.

Offline role-playing games continue to thrive, mostly in the form established in previous decades. A notable exception was 2002's *Neverwinter Nights*, widely praised

for offering a player the chance to act as gamemaster, similar to the days of D&D play around dining room tables (in truth, *Vampire: The Masquerade—Redemption* introduced the feature first, two years previously). In both games, one player could thus control various aspects of the game's scenario as it unfolded. *Neverwinter Nights* was sold with an invitation from the game's ambitious developer for the players to create their own adventures and share them with the user community. *Star Wars: Knights of the Old Republic* did nothing this innovative when released in 2003, but did introduce true 3D graphics to the RPG subgenre and was almost universally heralded as one of the best of the (many) games based on the *Star Wars* license.

Strategy games

Real-time strategy games have recently embraced 3D graphics, as illustrated by the 2002 releases *WarCraft III: Reign of Chaos* and *Age of Mythology*. But little else has changed in the genre, although *Warcraft III* did offer some alternative pleasures, by including role-playing elements and focusing on small battalions as opposed to massive armies.

Meanwhile, some turn-based series have experimented with multiplayer modes, like *Sid Meier's Civilization III: Play the World* from 2002. Another breed of turn-based strategy caters to those war gamers eager for complex and credible simulations of epochs or specific conflicts. Among the industry's best examples of this intricacy are the *Europa Universalis* games (2000–2007) and *Hearts of Iron* from 2002.

One strategy game that does stand out is Lionhead Studios' *Black and White*, from notable game designer Peter Molyneux. The game caused a stir in 2001 due to its novel design, and initially received rave reviews, although it later made number one of GameSpy.com's list of twenty-five most overrated games of all time.[30] No-one, however, denies that the game was innovative. In a parallel to *Populous*, the player assumes the role of a deity and is given a nation and a magical creature, which develops its own personality and knowledge based on how it is treated by the player. At the same time, the player's choices affect how his subjects perceive him, leading to various possibilities and constraints.

Process-oriented games

In recent years, developer interest in massively multiplayer online games has skyrocketed. Presently around 170 MMORPGs exist or are in development complemented by a significant number of large-scale online multiplayer games in other genres.

The most ambitious Western titles in the decade's early years were Funcom's science fiction themed *Anarchy Online*, Vivendi's *Dark Age of Camelot* and Sony's *Star Wars Galaxies: An Empire Divided*. Of these, *Anarchy Online* faced tremendous technical trouble at launch, while *Dark Age of Camelot* is often described as something of a miracle in terms of flawless launches of ambitious online games.[31] None of these rebelled against the standards established by *EverQuest* and others, although variety in the specific mechanics did lead to somewhat different game experiences. Many believed that the large number of fantasy themed games available had satiated that particular niche, but they were proven wrong by Blizzard's extraordinarily successful *World of Warcraft* in 2004. With little that was radically new, *World of Warcraft* geared its dynamics towards more casual play and quickly attracted more than

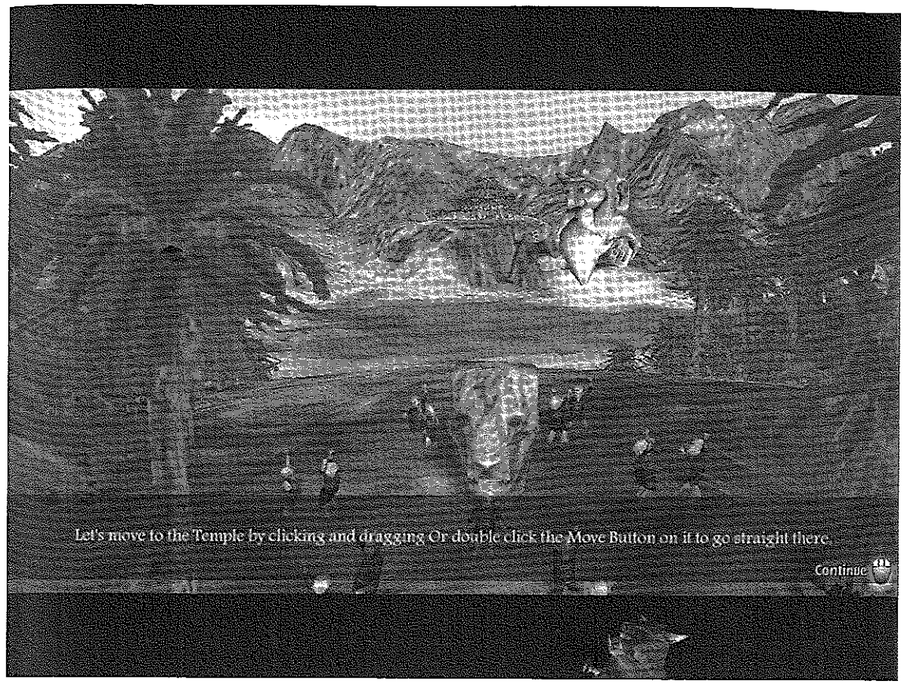

Figure 4.40 *Black and White*

twice as many users as *EverQuest*—until then the most popular Western MMORPG—had ever had.[32]

It is curious that MMOGs[33] have been mostly confined to their region of origin. As a general rule, Western games have enjoyed very limited success in Asia and vice-versa. In Asia, the game *Lineage: The Bloodpledge*, released in 2001, drew players in numbers which surpassed even the most successful Western MMORPG of the time though later surpassed by *World of Warcraft* (although differences in how subscriptions work make comparisons difficult). Graphics were two-dimensional, not unlike those of *Ultima Online*, and the game focused on battle. Other Asian MMORPG successes include Gravity Corporation's *Ragnarok Online*, a stylized animated-inspired 2002 release, *Final Fantasy XI* from 2003, and Lineage's successor *Lineage II: The Chaotic Cronicle* from 2004.

These titles, however, may just be the beginning given the large number of MMOGs (massively online games) Ccurrently in production. However, it seems that certain strong design conventions have already been established such as the use of fantasy settings and the focus on player characters working toward higher levels.

In mid-2007, the website MMOGData which collects statistics on MMOG subscriptions estimates the total number of MMOG subscriptions to be 20 million (up from a select few in the mid-1990s). Figure 4.42 shows number of subscribers for the most popular games.

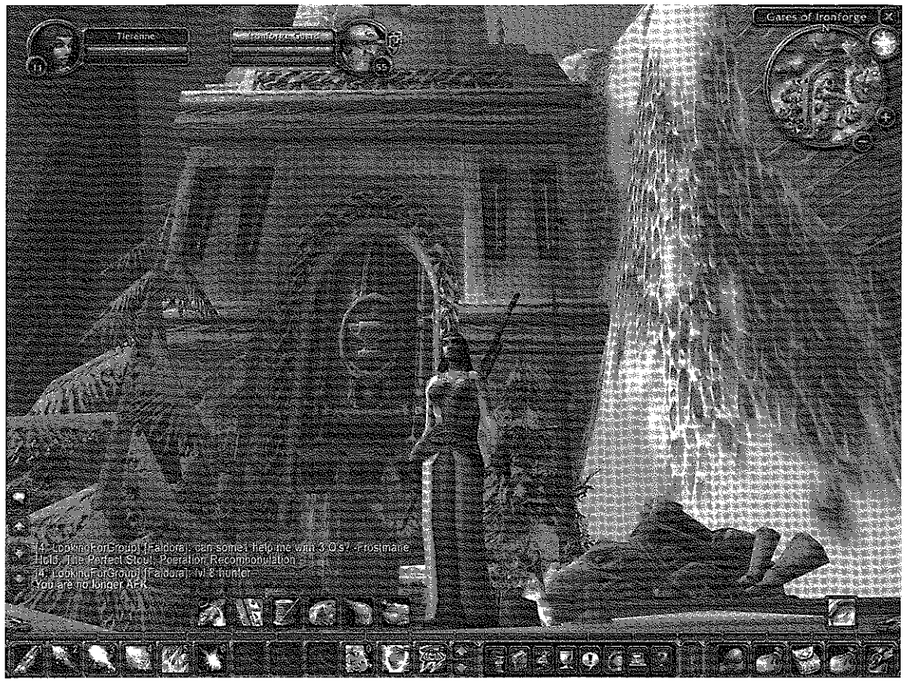

Figure 4.41 *World of Warcraft*

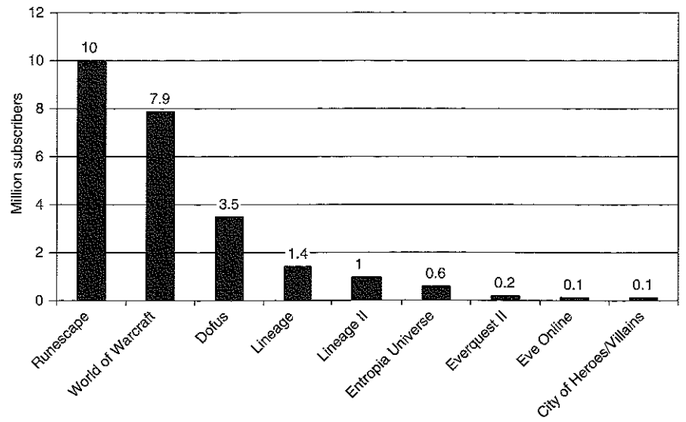

Figure 4.42 Subscriptions for largest MMOGs (mid-2007).[34] Includes both paid and free subscriptions

We see how presently *Runescape* (which offers free subscriptions) has more players than any other game and that *World of Warcraft* is the most successful paid-subscription-only game in the world by far.

Apart from MMOGs, non-competitive vehicle simulators remain an important niche in the process-oriented genre. Microsoft continues to publish reality-faithful simulators, like the 2001 *Microsoft Train Simulator*. Here, the player controls various train types and is able to operate everything from a variety of brakes and horns to windshield wipers. To ensure realistic representation Microsoft has teamed up with actual railroad operators, with the sole aim of mimicking the experience of actually running a train.

PERSPECTIVES

Where are video games going? Although certain trends seem evident, the industry's only true constant has been rapid change; as a result, large-scale predictions about the future of games are likely to be the butt of ridicule in a matter of years.

In the absence of fortune-telling, then, let's outline some intriguing trends. First of all, it seems that a belief common in some quarters at the turn of the century—that video games would rid themselves of narrative trappings to embrace their core "gameness"—has been thoroughly debunked. The success of games like *Grand Theft Auto III* (2001), *Hitman: Codename 47* (2000), *Max Payne II* (2003) and *Half-Life 2* (2004) has shown that storytelling is as essential as ever. This group exists in some opposition to another growing subgenre—the world-oriented, massively multiplayer role-playing games. These manifest many contrary characteristics, and are for example much less rigid about their definition of success, and much more open as to playing styles. The latter group, which has arrived with high expectations and much discussion, has not become the instant goldmine that some dreamed of. While *World of Warcraft* has become immensely popular, others have not captured the masses like they were supposed to—the disappointing sales of 2002's *The Sims Online* exemplifies that the potentially lucrative game format is not a sure recipe for success.

Another split runs between active hardcore PC gamers—who are willing to spend time and money altering and expanding their favorite games—and console gamers, typically content to be entertained by less demanding game types. If the financial importance of the PC as a gaming platform declines further this may lead to the PC not being automatically supported by certain genres of game developers.

Sticking to the dichotomies, both console and PC games have generally increased in size, complexity and development budgets. Meanwhile, the World Wide Web has become a training ground for would-be game designers of all levels. Adding to this renewed focus on simple, sometimes minimalist, game design is the rise of mobile platforms (particularly cell phones), which have fueled a special creativity brought on by severe limitations. Thus, while AAA titles grow in size and marketing force, each new day sees cascades of simple, experimental independent games being released on the web. To say that design development in the broad sense is being stifled by growing budgets is blatantly incorrect. This pessimism is as inaccurate, in fact, as the fallacy that old games were better than new games, or that game designers today—more than their predecessors—rely on true and tried formulae. Great specimens have always been copied, but development is not about

being uniquely creative each time. It is very much about the slow accumulation of knowledge—technical and otherwise—about building on past effort, copying the masters, and learning from the success and failure of one's peers. The successful development of new work, as we have seen time and time again in this chapter, is ultimately about understanding the history of video games.

5 VIDEO GAME AESTHETICS

RULES/GEOGRAPHY AND REPRESENTATION/NUMBER OF PLAYERS

We have already tried to reach an understanding of what games are—to give a sense of the formal qualities that we can use to decide what constitutes a game. In this chapter, we will look more closely at how to understand major game features like interactivity, rules, and gamespace.

By aesthetics we are referring to all aspects of video games which are experienced by the player, whether directly—such as audio and graphics—or indirectly—such as rules. Thus, importantly aesthetics as used here is not limited to how a game looks or sounds but more broadly to how it *plays* as a function of the various design choices of the developers. Or put differently, Chapter 3 was about describing games as a phenomenon in contrast to other phenomena whereas this chapter is about describing the elements that actually make up games.

- *Rules*: these defined limitations determine what you (and other characters in the game) can and cannot do, and which actions or events increase or decrease the player's score. In chess, for example, there is a rule that one cannot place one's own king in a position of check; in the snowboarding game SSX 3 there is a rule that a certain aerial maneuver gives the player a particular number of points.

- *Geography and representation*: like the cardboard playing surface of a traditional boardgame, a video game's geography "physically" blocks certain actions (you generally cannot pass through walls), while allowing others (you may be able to jump from one platform to another). The world of a video game is typically represented to the player by means of graphics and sound. Within the realm of representation is an enormous variety of design possibilities: For instance graphics may be two- or three-dimensional, sound may be realistic or cartoonish, and the perspective may be isometric or first-person.

- *Number of players*: in terms of design and development single-player games differ greatly from multi-player games. In the former type, computer-controlled opponents—or the environment itself—must respond entertainingly to the player's actions, while in the latter type designers must ensure level playing fields, efficient communication features, etc.

On a very abstract level, these three elements could be independent of one another. One set of rules, for example, could be attached to a variety of game representations (we could have a game of *Star Wars* chess, which in fact we do). But as we shall see, the choices regarding one of these elements tend in practice to shape choices on other levels.