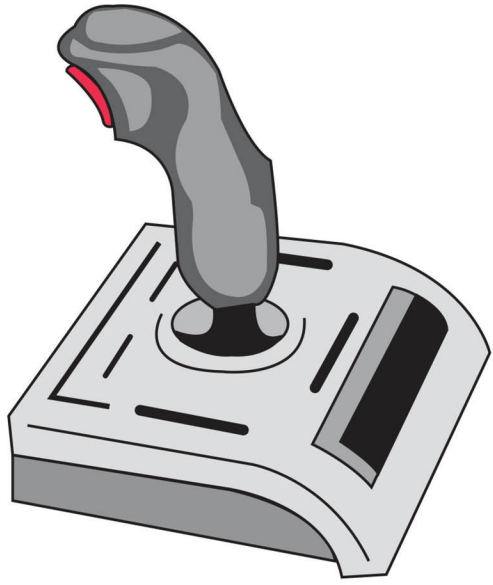
VIDEO GAMES

A Popular Culture Phenomenon



Arthur Asa Berger

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Preface

It was in 1984 that I first became interested in the video game phenomenon. I had read a number of articles about *Pac-Man* in various newspapers and magazines and I sensed that something rather interesting was going on with video games . . . but I didn't know what it was. I had played *Pong* and *Pac-Man,* and in 1984 I wrote my first article on video games—a "think piece" essay for the *Los Angeles Times* on the *Pac-Man* phenomenon. Over the years I followed the development of these games in the popular press and then, in 1998 I started investigating them seriously. I checked them out on the Internet and got a subscription to a video game magazine and I corresponded with people at some video game websites.

In 1999 I was invited to attend a conference on children's literature in Germany and was given an assignment—to see how children's narratives were being affected as they moved from print to electronic media. I wrote a paper for the conference, which, in slightly modified form, is the second chapter in this book. My research for this paper led me to write this book. I purchased a number of books on video games, bought some video games, started playing them (with questionable success) and started doing research on the whole phenomenon. I was fortunate enough to be able to interview some video game makers at Lucas Arts, and I also corresponded with some scholars who had done work on video games and journalists who worked at video game sites.

The result of my effort is the book you are about to read.[1] My focus is not on the quality of the game play or matters like that, but, broadly speaking, on the social, psychological, and cultural significance of this new entertainment phenomenon. I hope you will find this book instructive and, given the nature of my subject, also illuminating and entertaining.

Note

1. It takes between nine months and a year to publish a book in print once it has been accepted by a publisher. Because the video game industry changes so quickly, it is impossible for me, therefore, to be up-to-date on some of the matters I discuss. When I wrote my book, in 2000, Sega looked like it would survive and the producers of the *Tomb Raider* film were trying to figure out who to cast as Lara Croft. By the time I got the copy-edited version of my manuscript, in June 2001, Sega had stopped making video game consoles and Tomb Raider, starring Angelina Jolie, was about to be released. These matters, which involve video game console wars and other such things, keep changing. But my socio-cultural analysis of the video game phenomenon and of the video games I deal with are not affected by changes in the industry. Probably the best way to keep your finger on the pulse of the video game industry is to follow it on the Internet. *Video Games: A Popular Culture Phenomenon* offers insights into the significance of the video game phenomenon and some of its most celebrated games.

Acknowledgments

I would like to thank the many scholars and journalists who were kind enough to help me with this book and to the people I met at Lucas arts, who gave me important insights into the video game industry. In particular, I'd like to thank Janet H. Murray, Henry Jenkins, Brenda Laurel, George Landow, Lauren Fielding, Michael Brown, and Freedom Baird for their suggestions and to thank Kitty O'Neil and Mike McCormick from Lucas Learning and Haden Blackman from Lucas Arts.

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Part 1

Theoretical Concerns

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1

Video Games: A Popular Culture Phenomenon

> *"Each successive generation of video games has become more technologically sophisticated, more realistic, and more violent. The newest wave of video games, based on CD-ROM technology (the same technology people use for music recordings and computer software), is, in fact becoming more like film and television than what we traditionally expect of a video game. This is a major evolutionary step beyond the simple graphics of the classic* Space Invaders *arcade game so popular fifteen or twenty years ago, or the tiny animated cartoon figures of the Nintendo system that have dominated the video game market in recent years."*
>
> —Eugene F. Provenzo, Jr. (Steinberg and Kincheloe, eds. 1997: 104)

In this book I deal with video games, a popular entertainment phenomenon (with a focus on adventure or action-adventure video games) in terms of their social, psychological, and cultural significance. I also consider the size of the video game industry, new developments in video game player technology, and how video games have affected story telling—and in this regard, compare narratives in print and video games. To accomplish these goals, I do the following things:

1. I consider what video games are and how they relate to play;
2. I discuss whether video games are an art form or a new medium,

3. I say something about the nature of narrativity;
4. I examine the role video games play in the lives of young children, and discuss how to analyze their cultural significance;
5. I offer a bio-psycho-social analysis of the video game phenomenon;
6. I analyze four of what are generally considered to be the most important adventure video games of recent years: *Myst, Riven, Tomb Raider,* and *Half-Life.*
7. I support my analyses by using quotations from many experts and authorities in the field.

A News Event of Significance for Gamers

On October 26, 2000, Sony introduced its PlayStation 2 video game machine in the United States—a device that it believes will revolutionize home entertainment. Sony considers the PlayStation 2 (also known as the PS2) a "Trojan horse," that will be purchased as a video game player but will eventually change the way Americans entertain themselves in general. That is because the PlayStation 2, which sells for $299, also can play DVD films, music CD-ROMs, and video games that were purchased to be played on the PlayStation 1. (Sony is losing around one hundred dollars on each console sold in the United States, but will make up its losses on the consoles from its profits on the video games and in licensing fees.) The PlayStation 2 also has a port for a hard drive and another port that will enable it to support a high-speed Internet connection. It will also, when add-ons are developed, let its owners make music mixes and edit their own digital movies.

There are some questions about whether the Sony PlayStation 2 can actually become the center of household entertainment in America. But even if it doesn't, it will unquestionably be a major force in the video game industry. We must remember that Sony is building on an enormous base: there are estimates that the Sony PlayStation 1 is found in one out of every six households in the United States. (Sony has sold something like 27 million PlayStation 1 consoles here in the United States and 75 million worldwide.) I will discuss the different consoles used to play video games, which compete with the PS2, in more detail later in the book.

Most Americans are well aware of the existence of video games. There are occasionally articles about new video games in newspapers and the *New York Times* regularly carries a feature on new video

games every Thursday in its "Circuits" section. There are also articles on the industry and various games in magazines such as *Time* and *Newsweek*, and there are many magazines devoted to video games, and hundreds (if not thousands) of Internet sites on every conceivable aspect of video games.

Many video game companies have their own sites where you can find a great deal of information about specific games. If you take interactivity as one of the main constituents of video games, there are also a number of interactive image-less fiction narratives, what might be thought of as an elite art form version of the video game without animated characters. So, there is a continuum of games that covers everything from relatively crude "bang-em-up" wrestling games to ingenious science fiction and adventure games to postmodern avant-garde novels.

Are Video Games an Art Form or a New Medium?

There is some confusion about what video games are. Are they an art form with many different genres, similar in nature to the novel, or some kind of new medium? There are decent arguments that can be made for both positions. Video games are interactive, but there are other texts and media that are interactive, so I don't think interactivity means that video games should be considered a new medium—unless interactivity is enough to qualify anything as a new medium. The novel is an art form using the medium of print (but now also, with the development of e-books, electronic media) that has many different genres—everything from genre stories such as mysteries and science fiction stories to non-formulaic, non-genre stories about individuals and their relationships. Thus, there is a wide spectrum of novels—everything from tough guy mysteries like Mickey Spillane's *I, the Jury* to James Joyce's *Ulysses*. I would like to suggest that video games are probably best understood to be similar to the novel in that there are many different genres of video games; both novels and video games are, then, from my perspective, art forms.

When scholars write about video games, they often use the term "form" to discuss them. For example, Jay David Bolter and Richard Grusin write, in their book *Remediation: Understanding New Media,*

> The term *computer game* covers a range of forms, including violent action games, role-playing and narrative games, erotic and frankly pornographic applications,

> card games, puzzles and skill-testing exercises, and educational software. Some of these forms are clear repurposings of early games. . . . Computer games are delivered on a variety of platforms . . . in all their forms and with all their modes of delivery, digital games illustrate the commodification of the computer. (2000, 89)

The authors use the term remediation to deal with the ways in which new media refashion prior media forms. This concept may help us understand how to categorize video games.

Another author, Eugene F. Provenzo, also uses the term "form" in dealing with video games. He writes in his essay "Video Games and the Emergence of Interactive Media for Children" (in Steinberg and Kinchloe, 1997, 103):

> I argue here that video games represent a new frontier for media in our culture. Video games are a complex and rapidly evolving form—one that most parents and adults pay relatively little attention to.

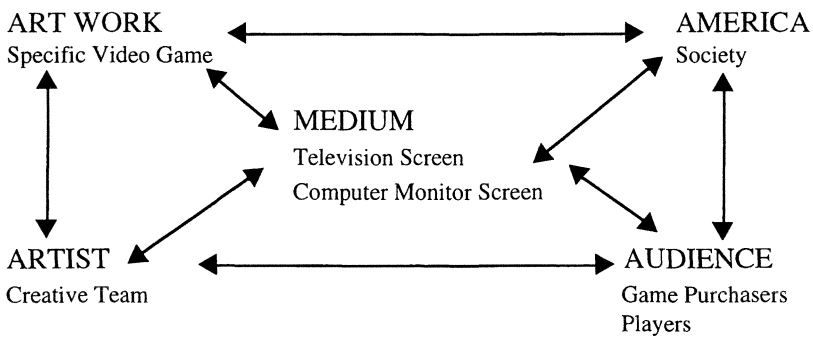
Authors use the term "form" because there are so many different genres of video games. Just having different genres, however, is not a proof that we are dealing with an art form. Media such as film, radio, and television also have many different genres, so there is a logic to arguing that video games are a new medium. I would suggest that because video games are played on television screens or computer monitor screens, and thus use an "old" medium, it makes sense to think of video games as art forms. The issue is not, from my point of view, a terribly important one. What is most important is that we analyze video games and try to understand their impact on the people who play them and on society at large.

We can think of each video game as a text, a work of popular art that is created collectively (like films and television programs). Video games are created by teams of writers, artists, musicians, and various kinds of other technicians. In critical parlance works of art are called "texts," to make it easier for writers and scholars to talk about them without having to name them or describe them every time. These video games are created by authors (teams of writers and artists) and are created in a particular society, directed toward a specific audience, and played on a familiar medium—the television screen or computer monitor screen.

We can see these relationships better by putting them into a chart of what I call the focal points involved in analyzing mass mediated texts.

Let me deal with these focal points in a bit more detail. A video

FIGURE 1.1
Focal Points in the Study of Texts



game is distributed on different kinds of devices that contain software such as CD-ROMs, cartridges, or DVD disks. The software is, in my scheme of things, the work of art, or in this case, the specific game. For example, there are five CD-ROMs needed to play *Riven.* A particular game is created for a specific audience—gamers who like certain kinds of game. Thus, some gamers love sports video games, others like simulations, others like action-adventure video games, and so on. Of course those who create and manufacture a video game always hope that players who like other kinds of games might be induced to purchase the game they have created and play it, also.

The video game is created and manufactured in some society and often reflects, in subtle and sometimes not easily recognized ways, the beliefs and value systems of the society in which it is made. These values are filtered through the personalities, social class, beliefs, and values of those who actually design and create the game. This means that works of art, in all media, always contain elements of the personalities and life experiences of their makers and also of the societies in which their makers grew up. Video games are played in many countries, so they have to also relate to the interests of players all over the world. For example, many popular video games are created in Japan but are popular in the United States and in many other countries. Video game makers must keep in mind the nature of their audiences—in particular how old the players will be—and their particular interests.

Finally, the art work/text/video game is transmitted by some medium. In the case of video games, as their name suggests, video games

are played on video display monitors—either on television sets that are hooked up to game playing consoles or on computer video display monitors in the case of PC video games.

I mentioned, earlier, that there are particular audiences for video games. That explains why there are many different genres or kinds of video games. If you take an art form such as the popular novel, you see that there are many different genres of popular fiction, such as detective novels, science fiction novels, romance novels, spy novels, western novels, and adventure novels.

The same applies to video games; there are many different genres of video games such as action adventure, sports, science fiction, simulations, and role-playing.

It is difficult, at times, to assign a particular genre to a video game because in recent years video game designers have mixed genres together, in the same way that many novelists have. As Michael Brown, an editor at CNET'S Gamecenter (HYPERLINK http:// *www.gamecenter*) explained to me in an e-mail message:

> Categorizing computer and video games is becoming increasingly difficult, because in an effort to build unique games, developers are blurring genres together. It used to be that in an "action" game, you'd run around and blow things up. In a role-playing game, you'd go on quests and develop your characters' skills along the way. But now there are action-RPGs, like *System Shock 2*, and adventure-action games, like *Mask of Eternity*. It's a good thing for gaming, but it does make our jobs more difficult when we try to categorize games. (Feb. 8, 2000)

Trying to decide which genre a given game should be put in is worth doing, since it tells us something about the nature of the game, but we must keep in mind that as in other kinds of texts, sometime a game has elements of several different genres in it. For example, many games are combinations of action and adventure or adventure and role playing, though usually one of the two blended genres is dominant.

I think it makes good sense to think of video games as a kind of text that comes in many different genres and blended genres—and thus as an art form—rather than seeing video games as a new medium. There are many video artists who use video to make texts of all kinds, some of which are very avant garde. These texts are not games, however.

New Technologies Make a Difference in Video Games

So the medium of video is not the only important thing as far as understanding what video games are. The important thing, from my point of view as a popular culture critic, is to analyze the video game phenomenon and certain important video games and see what they tell us about ourselves. What has happened is that as the technology of video games has evolved, from diskettes to CD-ROMs and DVD disks, the nature or power of the games has changed considerably. The technical quality of the images and sounds in these games has improved to such a point that it can be suggested that they represent something relatively new in the entertainment world—*interactive narrative texts with multi-dimensional characters.* These texts now have the capacity to involve players to an extent unknown in earlier days, when the technology of these games was much more primitive.

It is important to have an understanding of what interactivity is—a subject I will be discussing at various places in this book. J. C. Herz offers an interesting explanation of interactivity in her book *Joystick Nation: How Videogames Ate Our Quarters, Won Our Hearts, and Rewired Our Minds.* She tells us that video game designers often create their worlds first and then worry about characters and plots and adds that it isn't digital cinematography that makes stories immersive, but something else:

> What makes it [a video game] immersive is a world where no territory is off-limits, anything you see is fair game, and all your actions have consequences. This is what game designers calls a "realtime object-oriented environment," which is to say time moves ahead and the world churns even in places you don't care to look (or haven't found). Characters exist independently. Options shift. Events—some completely beyond your control—unfold in a world that can age . . . .with each tick of its internal clock, the fictional world changes. (1997, 155)

The remarkable developments in video game technology have led to what, one might suggest, is a new (or, perhaps radically transformed is more accurate) entertainment form. It is one that now closely approximates film in terms of the qualities of images and sounds generated by the new video games devices but it is different from film in that players now can immerse themselves into the film-quality texts and participate in them.

This represents, one might argue, a considerable change in our narrative conventions. Reader response theorists have argues that readers

play a role in the "creation" of literary texts, in the sense that they help bring them into being when they read them. With video games, the very notion of authorship becomes problematical, now that gamers have the capacity to affect what happens in a game. That is the point that Ted Friedman makes in his article "Making Sense of Software: Computer Games and Interactive Textuality" (Jones, 1995). He argues that the "oppositions" reading and writing now are connected and it is impossible to determine where one ends and the other begins. Friedman quotes a computer game critic, Orson Scott Card (*Compute,* "Gameplay: Films can make lousy games." 1991:54):

> What every good game author eventually has to learn . . . is that computers are a completely different medium, and great computer artworks will only come about when we stop judging computer games by standards developed for other media . . . .You want to do the rebuilding of Atlanta after the war? SimCity does it better than either the book or the movie of *Gone With the Wind.* The computer "don't know nothin' 'bout birthin' babies," but what it does well, it does better than any other medium that ever existed.

Card's point is well worth considering. He uses the term "computer" but we can extend it to mean console video games and Internet ones as well. What's interesting to note is that now films are being made from popular computer games. Films may make "lousy" computer games, as Card asserts, but we don't know yet whether computer games will make "lousy" films! A number of films, of uneven quality, based on video games, have already been made and others, such as one based on *Tomb Raider,* are currently in production.

According to many critics, all texts are related, in various ways, to previous texts (the technical term for this phenomenon is "intertextuality") and to older media; I don't want to suggest that the new video games are totally different from any of the games that were created before them. But the new machines make possible a considerably different game playing experience from earlier games, such as *Pong* and *Pac-Man.* That is the point to be made.

It is fair to argue, I would suggest, that video games, in general, are a new popular culture phenomenon, and the more recent video games are major transformations of the earlier games. We've had video games for something like thirty years, but it is only in recent years, with the development of new consoles with incredible powers, that video games have been able to evolve into much more powerful and sophisticated works. In addition, it is now possible to play video games on the

Internet, so the nature of game playing has changed considerably with this recent development.

In their article "Nintendo and New World Narratives" (Jones, 1995: 61) Mary Fuller and Henry Jenkins write, "Most of the criteria by which we might judge a classically constructed narrative fall by the wayside when we look at these games as storytelling systems." These games, then, are considerably different from earlier ones, due to new developments in game-playing technology and new levels of interactivity that these new technologies make possible, which leads to a new kind of narrative—one that has interactivity and that generates powerful immersive qualities. One thing remains constant, however—you've got to have a good story, with sympathetic characters, conflict and a satisfying resolution. You can have all the new technology in the world, but it won't mean much if you don't have a compelling story.

Defining Play

Let me offer a minor complication here—we *play* games. But what is play? A classic definition of "play" was made by a Dutch historian J. Huizinga, who wrote in his book *Homo Ludens* that play is

> A voluntary activity or occupation executed with certain fixed limits of time and place, according to rules freely accepted but absolutely binding having its aim in itself and accompanied by feelings of tension, joy, and the consciousness that it is different from ordinary life. (1955: 20)

This definition may be somewhat limiting, but it does call our attention to certain aspects of play that are related to games. It seems likely that Huizinga had games in mind when he defined play the way he did; other theorists, I should point out, offer broader definitions of play. Whatever the case, we tend to separate, in our minds, the world of play from the real world.

Brian Sutton-Smith, a scholar who has done a great deal of work on play, adds an interesting insight about the relation of play to the mass media. He writes in his introduction to William Stephenson's *The Play Theory of Mass Communication,*

> we seem to enjoy escape into fantasy and reverie almost as much as we enjoy "reality," and the modern agencies of mass communication are calculated to stimulate those worlds with such extraordinary vividness that we are hardly aware that there has been any change in our status. The signals are so taken for granted, the communication so implicit, we are taken by stealth as in dreams. (1988: xviii)

Sutton-Smith's words are particularly applicable to the world of video games, and point to an interesting phenomenon. When we play video games, there are times when we lose sight of the fact that we are playing a game and the game becomes something incredibly real to us. In reading magazines devoted to video games, we frequently come across a literary concept—"the suspension of disbelief"—that offers a different way of thinking about the same thing Sutton-Smith is writing about. His notion that play and dreams might be related opens up video games, I would suggest, to the same kinds of analysis Freud made of dreams. There are often, let me suggest, deeper meanings to these games than we might imagine. I will explore some of these deeper meanings later in the book when I analyze some important video games.

Defining Video Games

Video games can be understood to be games generally played using either computers or special game players, such as the PlayStation 2 (they really are dedicated computers) that work with television sets. One of the most significant attributes of video games is that they are *interactive*—that is, as I explained earlier, actions by players affect what happens in the game. But what is a game? Actually, it is rather difficult to define games, because there are so many different kinds of games and different matters related to games.

Let me offer a working definition of a game. For our purposes, games—of all kinds, including video games—can be said to have the following general characteristics:

1. *They are entertainments.* People play games to amuse themselves and, in many cases, others. The concept "play" is quite important here—we are momentarily divorced from real life and the consequences of our failures are, therefore, relatively trivial.
2. *There are rules by which players are bound.* These rules cover (or should cover) every aspect of the game and every possibility that might arise when the game is being played.
3. *They often take place in certain locations.* We play games on boards such as those found in *Monopoly* or in specific locations such as those found in video games such as *Riven, Tomb Raider,* and *Sim City*. Some video games take place in a number of different locations. Sports, such as baseball, football, and basket-

ball, are games that take place on fields and courts with prescribed dimensions (between the bases in baseball, between the baskets in basketball and between the goal posts in football). Some video games simulate sports such as football and basketball.

4. *There is often a competitive aspect to games.* A player competes with others or competes against himself in various ways. In many games, one wins points for doing certain things or loses points for neglecting or not being able to do certain things. The fact that there is competition in games and that one never can tell how a particular game will turn out, gives them a dramatic aspect that players find intriguing and stimulating. Many video games are now played by groups of competing players.
5. *Games are seen as artificial, as unreal.* On the other hand, they may reflect things about or mirror, in certain ways, real life. For example, a new game, *The Sims,* is a video game that reflects domestic life and its various problems. As Neva Chonin wrote in *The San Francisco Chronicle* (Feb. 5, 2000, page B1), "In the Sims, the player plays God over a neighborhood of jabbering little people, guiding them through their careers, setting up their families and circles of friends, instigating romances and generally making them as crazed or wholesome as he or she wishes." In his book, *The Uses of Enchantment,* Bruno Bettelheim makes a distinction between the unreal and the untrue. Fairy tales, he tells us, are unreal but they are not untrue, and the same could be said of works of narrative fiction in general.
6. *There are many genres or kinds of games.* Some of the more important genres of video games are sports, action-adventure, role-playing, simulations, and teaching.
7. *There is always the possibility of cheating in games.* So one must be on one's guard when playing games with others. Your opponent might cheat or you might cheat "against" yourself, so to speak.
8. *One can stop playing a game when one feels like it.* Thus games are different from "real life" in that they allow for closure—they have beginnings and ends. We can't stop "playing" life when we get bored with it (without dire consequences, that is). This matter of having a beginning and ending is also found in fictional narratives in all media. There are, we will see, other similarities between games and stories.

When it comes to certain genres of video games, the "contest" involves a story that asks us to achieve some goal, triumphing over

adversaries of one kind or another, so action-adventure or narrative video games are not so different from games as we conventionally think of them. These narrative or adventure video games, as I mentioned earlier, are the kinds of games I will be focusing on in this book, though I will discuss other video games as well. In the jargon game players use, these games are adventure games—though sometimes they are also called action-adventure games or adventure-role playing games, because they blend various game genres.

Chris Crawford on the Design of Video Games

Chris Crawford offers a useful definition of video games in his book *The Art of Computer Game Design.* He argues that games have four basic factors—representation, interaction, conflict, and safety. Discussing the first of these, representation, he writes,

> First, a game is a closed formal system that subjectively represents a subset of reality. . . . By "closed" I mean that the game is complete; no reference need be made to agents outside of the game. Some badly designed games fail to meet this requirement. Such games produce disputes over rules, for they allow situations to develop that the rules do not address. . . . A properly designed game precludes this possibility; it is closed because the rules cover all contingencies encountered in the game. (1982: 7)

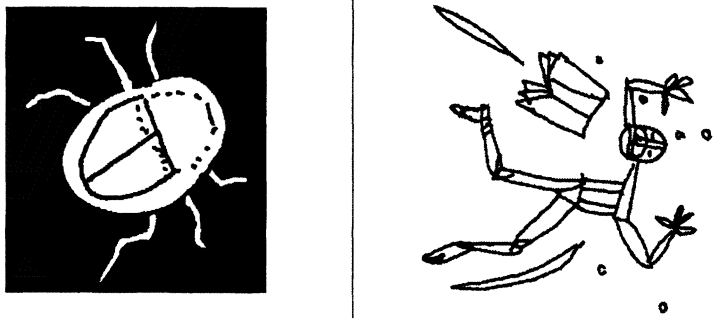
He uses the term "formal" to suggest that games have explicit rules and the term system to define games as being collections of parts that interact with each other, frequently in complicated ways.

He concludes his definition of games by writing,

> A game creates a subjective and deliberately simplified representation of an emotional reality. A game is not an objectively accurate representation of reality; objective accuracy is only necessary to the extent required to support the player's fantasy. The player's fantasy is the key agent in making the game psychologically real. (1982: 9)

Crawford's point is worth considering. Games aren't models of reality and don't claim to be; what they do is represent an emotional reality that generates the desired fantasies in the minds of players. Thus, criticizing games for not being real or realistic misses the point. Games take certain elements of reality, what Crawford calls a "subset," and provide focus for players and find ways of supporting the

Figure 2.1
Images from "Riven"



fantasies players have. Thus, games are psychologically real in the same way that fictional stories may be made up but can reveal profound truths about human beings and the human condition.

The interactivity in video games is a crucial element in their appeal. What a video game does, Crawford says, is "allow the audience to explore its nooks and crannies to let them generate causes and observe effects." This suggests that video games make players work in two ways: first, players are involved in the events of the game and second, players are also involved in finding out the way the game works.

Crawford offers some important insight into the nature of games in his discussion of the difference between games and stories:

> A story is a collection of facts in a time-sequenced order that suggest a cause and effect relationship. Frequently, the facts presented are deliberately fictitious, because the facts of a story are intrinsically unimportant. Indeed, the entire concept of fiction ("an untruth that is not a lie") only makes sense when one realizes that the facts presented in the fiction are themselves unimportant. The cause and effect relationship suggested by the sequence of facts are the important part of the story. . . . Thus, a story is a vehicle for representing reality, not through its facts per se, but through the cause and effect relationships suggested by the sequence of facts.
>
> Games also attempt to represent reality. The difference between the two is that a story presents the facts in an immutable sequence, while a game presents a branching tree of sequences and allows the player to create his own story by making choices at each branch point. The audience of a story must infer causal relationships from a single sequence of facts; the player of a game is encouraged to explore alternatives, contrapositives, and inversions. The game player is free to explore the causal relationships from many different angles. (1982: 10, 11)

Crawford adds that one of the big problems with adventure video

games is that they tend to drag players down a primrose path. By this he means players are ultimately forced to follow the hidden imperatives of the design of the game, but he thinks there are possibilities that designers will figure out ways to design games that actually change as the result of a player's actions, and have surprising resolutions.

This matter of video game players being led down a path is an important one, for it may be that the interactivity in video games is essentially involved with superficial matters and that ultimately all players have to submit to the hidden design elements in the game. Crawford laments that adventure video games don't end with surprises the way print stories do, and those video games (as of the 1980s) that do contain surprises in their resolutions have to limit the freedom of action of players.

All games, Crawford argues, must have conflict in them. If you design a game that doesn't have conflict, you eliminate what he calls "active response" to a player's actions; doing this means, in essence, that you've destroyed the game. Players pursue goals and face obstacles—characters in games who have opposing goals. If you take conflict out of a game, you destroy the reason for interaction and its narrative line; players must deal with some kind of intelligent agents who oppose them and this opposition leads to the interaction. Without this interaction you don't have a game.

One other matter bears consideration. The video games I'm focusing on in this book are called adventure games or sometimes action-adventure or adventure role playing video games and what is important about them is that each of them tells a story. The differences and similarities between print stories and electronic interactive ones (video game stories) is something I will discuss in more detail in the next chapter. To understand video games better, it is useful to consider how they are created. It is to this topic that I now turn.

Espen Aarseth on Creating Video Games

To better understand the nature of these video games, it is useful to know something about how they are created. A Norwegian scholar, Espen J. Aarseth, offers a good description of how video games are created. He writes, in *Cybertext: Perspectives on Ergodic Literature,*

> The formula was simple: take a popular fiction genre, for example the detective novel, create a background story (the more stereotypical the better, since the play-

> ers would need less initiation), create a map for the players to move around in, objects to manipulate, characters to interact with, a plot tree or graph with several outcomes, depending on the player's previous decisions, and add descriptions, dialogue, error messages, and a vocabulary for the player. This literary database is accessed via a subprogram called a *parser* that interprets the player's input commands (e.g. hit dragon, eat sandwich, go north). Once an action has been identified, the program changes the database and displays a message about the outcome, until the player quits the game, wins, or "dies" and must start again.
>
> Once the parser and database tools have been developed, these can be reused for several games, and game development then becomes much like planning and writing a piece of short fiction, except that multiple outcomes must be conceived and the players actions (however unreasonable) must be predicted. (1999: 100)

We can see, then, that according to Aarseth there are certain elements that games have: players compete with one another or with others, or with themselves (in terms of beating some kind of time limit). In many games, players control a hero/heroine figure that is commonly known as an *avatar*. If that avatar figure is killed, by opposing characters of one sort or another (aliens, monsters, and so on) the player has to start the game again—and try to avoid getting killed again. The games also generally can be described as belonging to one of a number of different well known genres, such as detective, science fiction, action adventure, horror, sports, or simulations.

There also is the matter of "interactivity"—the way players in a game use animated characters to do things, to act and react to various things that happen in a game. Thus, players identify with certain characters that find themselves facing opponents who want to kill them, want to prevent them from achieving some goal, or want to mislead them—that kind of thing. There is always a choice of actions to take and each choice involves other alternatives as players react to actions and reactions made by their opponents. In an interactive game, what a player does affects the things that happen afterwards in the game. So, at every moment, there are choices to be made and every choice leads to actions by opponents (in narrative games) and then other choices.

There is some question about the degree to which a player really has important choices in games. Video games are designed so that there are elements of choice in them but that is not the same thing as free choice or absolute choice, in which characters can do anything they want to do. There is a set of choices that are open to players at every moment, but these choices, and all choices in video games, are predetermined by the game designers. It is the parser and the design of the video game that determines what we are capable of doing when we

play these games! This is an important matter to keep in mind because it qualifies the notion that video games are interactive or limits our notion of what interactivity is all about.

Janet Murray on Holodecks and Interactive Narrative Design

According to Janet Murray, author of a book on interactive fiction and cyberspace, *Hamlet on the Holodeck: The Future of Narrative in Cyberspace,* there are two main structures used in electronic narratives: the *solvable maze* (which often takes the form of a story involving a journey) and the postmodern *tangled rhizome* (in which any point can be connected to any other point, leading to an indeterminate text). She also points out that most interactive narratives follow a basic branching structure that limits the players choice to a selection of alternatives from some kind of a fixed menu. This suggests that interactivity is a much more limited phenomenon than we think it is. One way or another, we have to choose from the options that are open to us and these options are part of the design of the game.

She also considers a question that has been considered earlier in this book—what is the relationship that exists between narratives (stories) and games? Her answer is that stories and games have many things in common and that one of the more interesting narrative structures in interactive fictions is the "contest story," in essence a story with many game elements in it. (Murray, who taught for many years at MIT, has a resource page on the Internet HYPERLINK http://mit/edu/jhmurray/www.HOH.html *http://mit/edu/jhmurray/www.HOH.html* that has many links to articles and other web pages.)

A holodeck, for those who are not familiar with the term, was a device first seen in 1987 in *Star Trek: The Next Generation.* Computers can create elaborate simulations by combining two things—holography and energy-to-matter conversions, which means you have a machine that can create make-believe worlds that can be started and stopped at will. These holodecks are important because they can be seen models, so to speak, for contemporary video games and other kinds of electronic narratives.

The Battle Among the Video Game Console Makers

Video games are generally played on four different platforms:

1. *In arcades,* where the player pays to play a game. The amount of time a typical game lasts in an arcade is a couple of minutes.
2. On *computer monitors,* where the software for the games are on CD-ROMs, DVD disks or on the Internet in the files of a powerful computer (previously, some much simpler games were on 3.25 inch disks, which hold around 1/500th as much data as CD-ROMs).
3. On *television screens*, where the games are played using specially designed game players that use game holding cartridges (such as those from Sega, Sony and Nintendo) and now CD-ROMS and DVD disks. There are also devices now that let players connect to the Internet and play games on their television screens.
4. On *small, portable devices*, such as the Gameboy.

The games on the specially designed players make use of extremely powerful playing devices—typically called video game consoles—such as the Sega Dreamcast and the Sony PlayStation 2, which generate incredible audio-visual effects. These consoles can be thought of, as I suggested earlier, as very powerful dedicated computers—machines designed primarily for playing video games. Engineers have also developed special video and audio cards for computers that greatly enhance their ability to satisfy hard-core and demanding gamers, but these cards are often as expensive or more expensive than a Sega or Sony console.

The companies that produce these video game consoles and players compete with one another ferociously to produce the most powerful device. Until March 4, 2000, the most powerful game player was the Sega Dreamcast, which costs $199. It comes with a modem and software that enables it to connect to the Internet, so a number of video games made for Sega can now be played on the Internet. Sega now gives its Dreamcast away free to players who purchase its Internet service, where they can play games with other gamers or use it to cruise the Internet.

A description of the Sega Dreamcast in *UGODIRECT.COM*, a video game catalogue, reads as follows:

> Sega's new awesome Dreamcast is the first 128-bit video gamesystem ever! The system includes a 200-MHz 128-bit processor and is the first console to offer a built-in modem for online gaming, Web browsing, e-mail and chat capabilities. The Dreamcast can display revolutionary new types of realistic and engrossing 3D

> graphics—human movements, fog, water effects, light and shading appear ultra-realistic. (1999: 4)

The Dreamcast's power is only equaled by computers that cost many times as much as the Dreamcast. It has a very powerful 128-bit microprocessor, powerful audio chips, 3-D graphics capabilities and can also play audio CD-ROMs. Dreamcasts also have Microsoft Windows CE technology in them. (The personal computers that most people use have 32-bit micoprocessors, so these Video Game Consoles, that have 128-bit microprocessors, are extremely powerful devices. The more bits a computer or console has, the more realistic the images it generates can be.)

In Japan, on March 4, 2000 Sony brought out a competing product, the Sony PlayStation II, which cost $360 in Japan; Nintendo is working on a console now called the Game-Cube, which will be available in October 2001. The Sony PlayStation II and the Nintendo Game-Cube will be even more powerful than the Sega Dreamcast Video Console and will also use DVD drives instead of cartridges for the game software, so the consoles can be used to see movies as well as play video games.

In the United States, the Sony PlayStation II, which was just made available on October 26, 2000, sells for $299; the price of the Nintendo Game-Cube is not known yet, but it is unlikely that it will cost more than the PS2. (Sony made an alliance with 7-Eleven stores in Japan to sell its products, so they are widely available there and Sony has sold something like three million PlayStation II consoles in Japan.)

Sony had projected sales of more than two million PlayStation II consoles in the United States the first few weeks following their release. Because of a shortage of chips, however, Sony only shipped 500,000 PS2s to the United States, causing a furor, as hard-core gamers sought to get their hands on one of the devices. (Some critics have suggested that it was a marketing ploy by Sony to whip up demand for the PS2s.) Sony has also several dozen video games for the PlayStation II now and another fifty are being created by various game makers.

To see the difference between the new consoles and the old ones, consider the following: the earlier 64-bit consoles could generate 250 polygons (elements in a wire mesh figures used to create three dimensional human figures) to create a character and the new PlayStation II can generate 66 million polygons to create a character. It is obvious that these new generation consoles represent an enormous improve-

ment, in terms of detail that is possible in generating characters, over earlier ones.

Sega's hope to have "stolen the market" by the time the competing video game consoles by Sony and Nintendo came out hasn't happened, but the Dreamcast has been quite successful. Despite the fact that the Sega has had impressive sales in the United States when its Dreamcast first came on the market, it still only has a relatively small percentage of the game console market. Sega has sold an estimated five million consoles since Dreamcast was introduced, but this is a relatively small percentage of the world market. In all of these new machines, the images are similar in quality to what is found in animated movies. The difference between animated movies and video games, of course, is that video games are interactive and allow the players to manipulate the animated figures in the games.

The outdated Sega (that is pre-Dreamcast) and Nintendo video game consoles in the United States still use a relatively "puny" 64-bit processor, which are only half as powerful as the new Sega Dreamcast's 128-bit processor. Sega estimates its Dreamcast is fifteen times more powerful than the PlayStation 1, the earlier version of Sony's video game player, and ten times more powerful than Nintendo's current game machine. Sega also introduced a large number of video games at the same time it introduced the Dreamcast, so players wouldn't be frustrated by having a powerful video game player but no games to play on it.

Sony, on the other hand, claims its new PlayStation II is many times more powerful than the new Sega Dreamcast. The capacities of video game players are important because makers of video games manufacturers have to decide which platform to design their games for. At the same time, all-purpose personal computer makers are working to beef up their audio-visual capabilities, to compete—as video game platforms—with Nintendo, Sega, and Sony. And in 2001, Microsoft will introduce its X-Box, a dedicated computer that it will manufacture to compete with Sega, Sony and Nintendo. Microsoft claims the hard-disk drive and graphics capabilities of its X-Box will be three times faster than the new Sony PS2 and the forthcoming Nintendo GameCube. Video game consoles currently don't have hard drives, so the X-Box will be quite different from the traditional consoles. Whether game players will be willing to wait until 2001 for the X-Box remains to be seen.

Microsoft decided to compete with Sony when it announced the

capabilities of its PlayStation 2—namely that it would have a DVD drive and a port that will enable it to access the Internet. Microsoft saw the PlayStation 2 as a "Trojan horse" that would put Sony in living rooms and eventually replace conventional computers as the center of home entertainment. And when Microsoft couldn't convince computer manufacturers to manufacture the X-Box, Microsoft decided to hire someone and have them manufacture it for them. It is going to use a newly developed NVidia chip, which runs at a trillion operations a second; that is three times faster than the Sony chip in its PlayStation 2.

The fact that Microsoft is getting into the video game console business suggests that video games have attained a degree of acceptance that few would have imagined five or ten years ago. Once thought of as simple little games, like *Pong,* video games have now emerged as a major art form—one that is best played on consoles with graphics capacities approximating super-powerful computers such as those manufactured by Silicon Graphics—computers that cost twenty times as much as the video game consoles do.

There is, we can see, a great deal of competition among console makers and personal computer makes to serve as platforms for video games. Personal computer makers are also developing new and rather expensive boards that greatly increase their power and their ability to generate realistic images and striking audio. Quite obviously, the presence in millions of living rooms of powerful little boxes that allow people to play video games, see DVDs, and cruise the Internet, represents a challenge to computer and software manufacturers. They can only wonder—what will these inexpensive mini-supercomputers be able to do next?

Many industry analysts suggest that Sega's future rests on the success of the Dreamcast console. If it sells enough consoles and attains "critical mass," video game makers will produce games for it and it can prosper. If it doesn't, the company may not survive. It takes around eighteen months to create a video game and the costs of making video games have been rising between 30 percent and 40 percent for the new generations of video games, so the power of the console and the way game developers respond to it are very important.

In the chart below, I compare the various video game playing devices.

Company	Sega	Sony	Nintendo	Microsoft
Device	Dreamcast	PlayStation 2	Game-Cube	X-Box
Chip Speed	200 mhz	295 mhz	405 mhz	733 mhz
Price	$199	$299	?	$300
Online Gaming	Yes	Probably	Yes	Yes
Games	200	52*	?	20?
DVD Player	No	Yes	No	Yes
Released on	Sept. 1999	Oct. 2000	Oct. 2001	?Fall 2001?

* 800 PlayStation 1 Games are also available

We can see there are considerable differences in the design of the various competing game playing consoles. In the final analysis, the most important things for gamers are how well the consoles play video games and how good the video games are. It is also possible to play many video games on computers, but it can be more expensive to purchase special boards to more fully utilize the video and audio capabilities of video games than to purchase a separate console, such as the Sony PlayStation 2.

The Cost of Video Game Playing

There are a number of devices that players can purchase to use with their consoles. Let's consider the Dreamcast which has Dreamcast Controllers" ($29.95), "Dreamcast Racing Wheels" ($38.95), "Dreamcast Fighter Sticks" ($38.95), and various games that cost between $40 and $50 per game.

You can see that there is a considerable investment required to play console video games. Personal Computer versions of video games are often less expensive and, of course, don't require the investment of several hundred dollars in the video console. But dedicated gamers often purchase expensive cards that cost hundreds of dollars, to make their computers better suited for playing games.

Let's take a typical situation and see what it costs to be a gamer as of the beginning of 2000 AD.

$199	console (Sega Dreamcast)
$60	two Dreamcast controllers
$200	four or five Dreamcast video games
$459	*Total*

Older versions of video games are often discounted considerably and used games are available at many video game stores—but gamers

don't seem to be terribly concerned about waiting for bargains and saving money. It is unlikely, also, that a gamer will be content with just four games. If a gamer buys ten games over the course of a year, we're now talking about between $400 and $500 a year for just video games. For $500 a person can go to more than sixty movies at $8.00 per ticket, so in terms of one's yearly entertainment budget, video games can be quite significant.

The statistics on relative penetration of the United States video console market are, in approximate figures:

Sony	60 percent
Nintendo	30 percent
Sega	5 percent

As I mentioned earlier, Sony is selling these consoles at a loss in Japan (that may reach as much as $180 a PlayStation there) but will make enormous amounts of money on licensing the games (Sony makes game designers pay a licensing fee to use its platform) and the sales of the games, assuming they are successful, that is. It only costs around $6.00 to manufacture a game cartridge, once a game has been designed, and it will cost even less to manufacture a CD-ROM or DVD disk with a game on it. Manufacturers of video game consoles are willing to lose money on their consoles because they know that once someone has purchased their console, they have to buy video games that use them—and the video games are where the money is.

What will happen when the PlayStation II, the Sega Dreamcast, the new Nintendo Game-Cube, and the Microsoft X-Box slug it out for the hearts and pocketbooks of game players in 2001 might be even more exciting than any video games these corporations produce.

Although Sega has sold five million Dreamcasts a short while ago, it looked like it might be marginalized and even go out of business. Its future is still somewhat shaky which has made some serious game players decide to buy the new Sony PlayStation 2 or wait for the new Nintendo Game-Cube or Microsoft X-Box in 2001.

The Size of the Video Game Industry

Most people are surprised to find out that the video game industry is larger than the film industry. The Interactive Digital Software Association (IDSA) released figures in 1998 that revealed that the video

and computer games industry "generated 16 billion dollars in economic activity in 1997, not including computer and video game hardware sales." In 2000 it is a 20 billion dollar a year industry and is expected to grow considerably.

This figure indicates that the amount of money spent just for the games, on cartridges and CD ROMs, is enormous—and to this you have to add the amount of money spent on the consoles and other hardware. In a different report, the IDSA reports that video games are "the fastest growing entertainment industry in America, surpassing books, records and movie box office" (1998 Executive Summary).

Let me cite some other interesting statistics taken from a variety of IDSA reports—all of which I obtained from its web site HYPERLINK *http://www.idsa.com:*

1. Household penetration of "next generation" video consoles will reach between 27–30 million by 1998. (There are approximately 100 million households in America, which means there will be next generation video consoles in one out of every three households.)
2. It often costs more than three million dollars to produce a video game
3. Almost twice as many people identified PC and video games as being more fun than watching television (34 percent vs. 18 percent), and more than double the number said it was more fun than going out to the movies (34 percent vs. 16 percent).
4. There were almost two interactive games sold for every household in America—that is, approximately 200 million games.
5. Fifty-four percent of those most frequently playing console games and 69 percent of PC gamers are 18 or older and 89 percent of video gamers are purchased by adults.
6. Thirty-five percent of console gamers and more than 43 percent of PC gamers are women.
7. People spent $98 million in 2000 renting video games. The sales growth of video games over the past few years has been rapid as the following figures indicate:

DATE:	1995	1996	1997	1998	1999	2000
BILLIONS	$3.2	$3.7	$4.4	$5.5	$6.1	$6.0

Video games greatly outpaced other forms of entertainment in 1998 in terms of growth:

ITEM	Books	Records	Films	Video Games
GROWTH	6.4 percent	5.7 percent	9.2 percent	25 percent

These statistics reveal that the video game industry is very large and growing even larger and very rapidly. We find that most gamers are adults, eighteen and over, and that contrary to what many people believe, a considerable percentage of gamers are women. In a typical year, something like 2,000 new games are introduced. This is the equivalent, we must realize, of more than forty new films opening every week.

We see, also, that there are some differences between PC video game players and console players, in terms of the kinds of video games they prefer. These differences are revealed in the chart the follows, which shows the genres PC and console players prefer in order of preference:

PC Players	**Console**
Puzzle/Board/Card/Learning	Action
Action	Puzzle/Board/Card
Strategy, Driving/Racing/	Driving/Racing
Adventure/Role Playing	Adventure/Role Playing
Sports	Sports
Simulation/ Children's Stories	Strategy
Creativity	Learning
	Children's Stories
	Creativity

As I mentioned earlier, there are often problems in determining the genres of certain video games. Racing games and wrestling games are easy to classify, but others, which involve role playing, are more difficult to classify as belonging to one particular genre. This matter of categorizing games according to their genres is similar to the problems literary scholars have in categorizing novels and other works of fiction; in many cases, a work blends several genres so it isn't easy to pigeonhole a text in just one genre.

The IDSA suggests that the most popular types of games purchased for all platforms are, in order of importance, Action, Sports and Puzzle/ Board/Card Games. There also are many online Internet games that have become popular. People who play these games average three hours a week online and another 5.4 hours playing offline games on their PCs, for a total of 8.4 hours a week playing video games. That is,

relatively speaking, a considerable investment of time in playing video games.

The Historical Development of Video Games

Modern video games can be said to have started with graphics-based games such as *Pong, Donkey Kong, Battle Zone, Centipede, Asteroids, Missile Command, Space Invaders* and *Pac-Man*—in the early 1980s. *Pong* was created in 1972 and was a relatively primitive game, that approximated Ping-Pong, but *Pac-Man,* created in 1980, represented a major leap forward as far as the design of video games was concerned. It started as an arcade game and was very popular, so a home version was designed, that was enormously successful. There was also a *Ms. Pac-Man,* which appealed to many female players. *Pac-Man* was the most popular video game in America for several years.

The game players or consoles that people use to play video games are devices designed to generate sharp video images, complex animated characters and powerful sound effects. The arcade version of *Pac-Man* had eighty-four circuit chips on its central logic board and was, for the times, a very powerful device. The first home version was a good deal less powerful and for many gamers, not as satisfying, but Atari, which manufactured the games, added special microprocessors devoted to generating better video displays and sounds. These versions were more satisfying to video game enthusiasts.

From this relatively simple game, played on a maze, that featured monsters gobbling up dots, the video game industry has progressed to its current stage in which there are incredibly complex stories with graphics and sound that now rival those found in animated films. The changes that have taken place from *Pong* and *Pac-Man* to *Myst, Riven, Tomb Raider (*featuring a voluptuous heroine named *Lara Croft*) and *Half-Life* have been truly startling.

The software for some early video games could fit on a 3.25-inch diskette. For example, an early version of *Prince of Persia* fits on a 3.25-inch diskette. The difference between the amount of data stored on a 3.25-inch diskette and a CD-ROM is quite incredible; a CD-ROM contains more than 500 times as much data as a 3.25-inch diskette, which explains why contemporary video games have such powerful images and sound (music and sound effects). The technology

involved in creating and playing these games has improved enormously in just a few decades. Most personal computers, for example, are still (as of the year 2000) in the 32-bit mode, so the new Sony and Nintendo consoles, as I pointed out earlier, will be 128-bits and much more powerful machines.

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