

INTRODUCTION:
36 WAYS TO LEARN A VIDEO GAME

I WANT TO TALK ABOUT VIDEO GAMES—YES, EVEN VIOLENT VIDEO games—and say some positive things about them. By “video games” I mean both games played on game platforms (such as the Sony PlayStation 2, the Nintendo GameCube, or Microsoft’s Xbox) and games played on computers. So as not to keep saying “video and computer games” all the time, I will just say “video games.” I am mainly concerned with the sorts of video games in which the player takes on the role of a fantasy character moving through an elaborate world, solving various problems (violently or not), or in which the player builds and maintains some complex entity, like an army, a city, or even a whole civilization. There are, of course, lots of other types of video games.

But, first, I need to say something about my previous work and how and why I arrived here to discuss video games. In two earlier books, *Social Linguistics and Literacies* and *The Social Mind*, I argued that two things that, at first sight, look to be “mental” achievements, namely literacy and thinking, are, in reality, also and primarily social achievements. (See the Bibliographic Note at the end of this chapter for references to the literature relevant to this chapter.) When you read, you are always reading something in some way. You are never just reading “in general” but not reading anything in particular. For example, you can read the Bible as history or literature or as a self-help guide or in many other ways. So, too, with any other text, whether legal tract, comic book, essay, or novel. Different people can interpret each type of text differently. ^{10/20/05} When you think, you must think about something in some way. You are never just thinking “in general” but not thinking anything in particular. The

argument about thinking is, in fact, the same as the argument about reading. For example, you can think about people who kill themselves to set off a bomb, in pursuit of some cause they believe in, as suicide bombers, murderers, terrorists, freedom fighters, heroes, psychotics, or in many other different ways. Different people can read the world differently just as they can read different types of texts differently.

So, then, what determines how you read or think about some particular thing? Certainly not random chemicals or electrical events in your brain, although you do most certainly need a brain to read or think. Rather, what determines this is your own experiences in interacting with other people who are members of various sorts of social groups, whether these are biblical scholars, radical lawyers, peace activists, family members, fellow ethnic group or church members, or whatever. These groups work, through their various social practices, to encourage people to read and think in certain ways, and not others, about certain sorts of texts and things.

Does this mean you are not "free" to read and think as you like? No—you can always align yourself with new people and new groups—there is no shortage. But it does mean you cannot read or think outside of any group whatsoever. You cannot assign social and private meanings to texts and things, meanings that only you are privy to and that you cannot even be sure you remember correctly from occasion to occasion as you read or think about the same thing, since as a social isolate (at least in regard to meaning) you cannot, in fact, check your memory with anyone else. The philosopher Ludwig Wittgenstein made this case long ago in his famous argument against the possibility of "private languages." There are no "private minds" either.

Does all this mean that "anything goes" and "nothing is true"? Of course not. We humans have goals and purposes, and for some goals and purposes some groups' ways of reading and thinking work better than do others. But it does mean that things are not "true" apart from any purpose or goal whatsoever. In the world of physics, as an academic area, if you have pushed your stalled car until you are dripping with sweat but the car has not budged, you have done no "work" (given how physicists use this word), but in the world of "everyday" people, people not attempting at the moment to be physicists or do physics, you have worked very hard indeed. Neither meaning is right or wrong. Each belongs to a different social world. However, if you want to do physics—for good or ill—it's best to use the word "work" the way physicists do. In that case, they are "right."

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These viewpoints seem obvious to me. They will seem so to some readers as well. Nonetheless, they occasion great controversy. Furthermore, they are not the views about reading and thinking on which most of our schools today operate. Take reading, for instance. We know a great deal about the psycholinguistics of reading—that is, about reading as a mental act taking part in an individual's head. These views strongly inform how reading is taught in school. And there is nothing wrong with this, save that psycholinguistics is only part—in my view the smaller part—of the reading picture. We know much less about reading as a social achievement and as part and parcel of a great many different social practices connected to a great many different social groups that contest how things should be read and thought about.

The same is true of thinking. Cognitive science has taught us a great deal about thinking as a mental act taking part in an individual's head. For various reasons, however, these views less strongly inform how teaching and learning work in today's schools than they used to. This is so, in part, because the views about thinking current in cognitive science stress the importance of active inquiry and deep conceptual understanding; things that are not politically popular any longer in schools, driven as they are today by standardized tests and skill-and-drill curricula devoted to "the basics."

Nonetheless, it is true that we know much less about thinking as a social achievement and as part and parcel of a great many different social practices connected to a great many different social groups that contest how things should be read and thought about. For example, it turns out that botanists and landscape architects classify and think about trees quite differently. Their different contexts, social practices, and purposes shape their thinking (and reading) in different ways. Neither way is "right" or "wrong" in general. We know little about how social groups, social practices, and institutions shape and-norm thinking as a social achievement, that is, about how they shape human minds when those minds are being botanists or landscape architects, though not when these same people are being other things.

And this last point is crucial. Since reading and thinking are social achievements connected to social groups, we can all read and think in different ways when we read and think as members (or as if we are members) of different groups. I, for one, know well what it is like to read the Bible differently as theology, as literature, and as a religious skeptic, thanks to different experiences and affiliations in my life thus far. Any specific way of reading and thinking is, in fact, a way of being in the world, a way of being a certain "kind of

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person," a way of taking on a certain sort of identity. In that sense, each of us has multiple identities. Even a priest can read the Bible "as a priest," "as a literary critic," "as a historian," even "as a male" or "as an African American" (priest, literary critic, historian, or ethnic group member), even if he chooses to privilege one way of reading—one identity—over another.

This does not mean we all have multiple personality disorder. We each have a core identity that relates to all our other identities (as a woman, feminist, wife, ethnic of a certain sort, biologist, Catholic, etc.). We have this core identity thanks to being in one and the same body over time and thanks to being able to tell ourselves a reasonably (but only reasonably) coherent life story in which we are the "hero" (or, at least, central character). But as we take on new identities or transform old ones, this core identity changes and transforms as well. We are fluid creatures in the making, since we make ourselves socially through participation with others in various groups. Social practices and social groups are always changing, some slowly, some at a faster pace (and the pace of change, for many social practices and groups, gets faster and faster in our contemporary high-tech global world).

Although the viewpoints I have sketched above may (or may not) seem obvious, they have taken me a lot of time to work on and, in the act, I have become if not "old," then "older," what we might call a late-middle-age "baby boomer." I was born in 1948. So, for heaven's sake, what I am doing playing video games and, worse yet, writing about it? The short answer, but not really the whole answer, since I came to this desire after playing the games, was that I wanted to say about learning just what I have said above about reading and thinking.

The longer answer is this: When my six-year-old was four, I used to sit next to him as he played video games, starting with *Winnie the Pooh* and moving on to *Freddy Fish*, *Pajama Sam*, and *Spy Fox*. I was intrigued. One day I decided I wanted to help my child play *Pajama Sam in No Need to Hide When It's Dark Outside*. This is a game where the player (as the comic book superhero "Pajama Sam"—a character who is "just" the small boy Sam pretending to be a superhero in order to increase his courage) must solve problems in the "Land of Darkness" to meet "Darkness" and tame him, so that the player (Sam) need no longer be afraid of the dark. A typical problem in the game is deciding how to convince a talking wooden boat that wood floats, so that the boat, which is afraid of water, can feel free to go "boating" on the water and take Pajama Sam where he needs to go. I decided to play through the game

by myself so I could "coach" my child as he played. (Now he charges me a dollar any time I attempt to "coach" him when he is playing a video game—he calls it "bossing him around" and "telling him what to do when he can figure it out for himself.")

When I played the game I was quite surprised to find out it was fairly long and pretty challenging, even for an adult. Yet a four-year-old was willing to put in this time and face this challenge—and enjoy it, to boot. I thought, as someone who has worked in the second half of his career in education (the first half was devoted to theoretical linguistics), "Wouldn't it be great if kids were willing to put in this much time on task on such challenging material in school and enjoy it so much?"

So I decided to buy and play an adult game ("adult" here means the game is played by teenagers on up; video-game players tend to be anywhere between 3 years old and 39). I somewhat arbitrarily picked the game *The New Adventures of the Time Machine*, a game involving adventure, problem solving, and shooting (based loosely on H. G. Wells), knowing nearly nothing about video games. Little did I know what I was getting myself into. This game, like nearly all such games, takes a great many hours to play. Many good video games can take 50 to 100 hours to win, even for good players. Furthermore, it was—for me—profoundly difficult.

In fact, this was my first revelation. This game—and this turned out to be true of video games more generally—requires the player to learn and think in ways in which I am not adept. Suddenly all my baby-boomer ways of learning and thinking, for which I had heretofore received ample rewards, did not work.

My second realization came soon after, when at the end of a day in which I had played *Time Machine* for eight straight hours, I found myself at a party, with a splitting headache from too much video motion, sitting next to a 300-pound plasma physicist. I heard myself telling the physicist that I found playing *Time Machine* a "life-enhancing experience," without even knowing what I meant by that. Fortunately, plasma physicists are extremely tolerant of human variation. (The plasma that physicists deal with is not, as he told me, a product from blood but a state of matter; when I asked him why he had not brought any to the party, he explained to me that plasma is so unstable and dangerous that if he had brought any, there would have been no party.)

Oddly enough, then, confronting what was, for me, a new form of learning and thinking was both frustrating and life enhancing. This was a state

that I could remember from my days in graduate school and earlier in my career (and when I changed careers midstream). Having long routinized my ways of learning and thinking, however, I had forgotten this state. It brought back home to me, forcefully, that learning is or should be both frustrating and life enhancing. The key is finding ways to make hard things life enhancing so that people keep going and don't fall back on learning and thinking only what is simple and easy.

My third realization followed from these other two. I eventually finished *The New Adventures of the Time Machine* and moved onto *Deus Ex*, a game I chose because it had won Game of the Year on many Internet game sites. *Deus Ex* is yet longer and harder than *Time Machine*. I found myself asking the following question: "How, in heaven's name, do they sell many of these games when they are so long and hard?" I soon discovered, of course, that good video games (like *Deus Ex*) sell millions of copies. Indeed, the video-game industry makes as much or more money each year than the film industry.

So here we have something that is long, hard, and challenging. However, you cannot play a game if you cannot learn it. If no one plays a game, it does not sell, and the company that makes it goes broke. Of course, designers could keep making the games shorter and simpler to facilitate learning. That's often what schools do. But no, in this case, game designers keep making the games longer and more challenging (and introduce new things in new ones), and still manage to get them learned. How?

If you think about it, you see a Darwinian sort of thing going on here. If a game, for whatever reason, has good principles of learning built into its design—that is, if it facilitates learning in good ways—then it gets played and can sell a lot of copies, if it is otherwise good as well. Other games can build on these principles and, perhaps, do them one step better. If a game has poor learning principles built into its design, then it won't get learned or played and won't sell well. Its designers will seek work elsewhere. In the end, then, video games represent a process, thanks to what Marx called the "creativity of capitalism," that leads to better and better designs for good learning and, indeed, good learning of hard and challenging things.

It would seem intriguing, then, to investigate what these principles of learning are. How are good video games designed to enhance getting themselves learned—learned well and quickly so people can play and enjoy them even when they are long and hard? What we are really looking for here is this: the theory of human learning built into good video games.

Of course, there is an academic field devoted to studying how human beings learn: best and well, namely the field of cognitive science. So we can, then, compare the theory of learning in good video games to theories of learning in cognitive science. Who's got the best theory? Well, it turns out that the theory of learning in good video games is close to what I believe are the best theories of learning in cognitive science. And this is not because game designers read academic texts on learning. Most of them don't. They spent too much of their time in high school and beyond playing with computers and playing games.

And, too, there is a key place—though hardly the only one—where learning takes place: school. So, we also can ask how the theory of learning in good video games compares to how teaching and learning work in school. Here we face a mixed bag, indeed. On one hand, the theory of learning in good video games fits well with what are I believe to be the best sorts of science instruction in school. On the other hand, this sort of science instruction is rare and getting yet rarer as testing and skill-and-drill retake our schools. In turn, the theories of learning one would infer from looking at schools today comport very poorly with the theory of learning in good video games.

If the principles of learning in good video games are good, then better theories of learning are embedded in the video games many children in elementary and particularly in high school play than in the schools they attend. Furthermore, the theory of learning in good video games fits better with the modern, high-tech, global world today's children and teenagers live in than do the theories (and practices) of learning that they see in school. Today's world is very different from the world baby boomers like me grew up in and on which we have based many of our theories. Is it a wonder, then, that by high school, very often both good students and bad ones, rich ones and poor ones, don't much like school?

This book discusses 36 principles of learning (individually in each chapter and listed together in the appendix) that I argue are built into good video games. From the way I opened this introduction, you already know that, while this book deals with learning, it will most certainly deal with learners (players) embedded in a material and social world. How could it be otherwise? After all, they are playing a game. Video games—like many other games—are inherently social, though, in video games, sometimes the other players are fantasy creatures endowed, by the computer, with artificial intelligence and sometimes they are real people playing out fantasy roles.

V. Games Social

However, this book has another goal as well. It seeks to use the discussion of video games to introduce the reader to three important areas of current research and to relate these areas together. One of these areas is work on “situated cognition” (i.e., thinking as tied to a body that has experiences in the world). This work argues that human learning is not just a matter of what goes on inside people’s heads but is fully embedded in (situated within) a material, social, and cultural world. Another one of these areas is the so-called *New Literacy Studies*, a body of work that argues that reading and writing should be viewed not only as mental achievements going on inside people’s heads but also as social and cultural practices with economic, historical, and political implications.

Obviously, these two bodies of work have much in common, though their advocates often disagree with each other over details. People in *New Literacy Studies* often distrust psychology more than people working in the area of situated cognition. And, too, people working in *New Literacy Studies* tend to be more “political” than people working in the area of situated cognition.

The third area is work on so-called *connectionism*, a view that stresses the ways in which human beings are powerful pattern-recognizers. This body of work argues that humans don’t often think best when they attempt to reason via logic and general abstract principles detached from experience. Rather, they think best when they reason on the basis of patterns they have picked up through their actual experiences in the world. Patterns that, over time, can become generalized but that are still rooted in specific areas of experience.

This view of the mind is obviously one way to spell out what it means to say thinking and reasoning are “situated.” I argue that it is one way to spell out how and why reading, writing, and thinking are inextricably linked to social and cultural practices. I don’t actually use the term “connectionism” in the book; instead I simply talk about what it means to discover patterns in our experience and what it means to be “networked” with other people and with various tools and technologies (like computers and the Internet) so that one can behave “smarter” than one actually is.

None of these three areas—work on situated cognition, *New Literacy Studies*, and a pattern-recognition view of the mind—represents a viewpoint that is universally agreed on. Many disagree with each one and, indeed, all three. Furthermore, my “introduction” to these areas, via video games, is highly selective. People who know little about these areas will pick up only the big picture. People who know a lot about them will quickly realize that I

am developing my own perspectives in each of these areas, while many other perspectives exist as well. Nonetheless, I believe that these three areas capture central truths about the human mind and human learning and that these truths are well represented in the ways in which good video games are learned and played.

These truths are often less well represented in today’s schools. And this book is about schools as well. It is a plea to build schooling on better principles of learning. If we have to learn this from video games, and not from a field with as boring a name as cognitive science, then so be it. I know that many people, especially on the right wing of the political spectrum, will find this idea absurd. So be that as well. (My book *The New Work Order*, written with Glynda Hull and Colin Lankshear, is, in part, about why the old distinctions between “right” and “left” don’t make much sense anymore in the modern global world of the so-called new capitalism.)

Let me end this introduction with a few short points. First, while I talk a good deal about actual video games, I really intend to discuss the *potential* of video games. The games get better and more sophisticated all the time and at a rapid pace. Much of what I have to say here will simply get “truer” as the games get even better. This is my consolation for the fact that any games I mention will be, for some players, “out of date,” replaced by newer ones by the time anyone reads this book.

Second, I am aware that many readers will not have played—or will not currently be playing—video games, especially the type I discuss. I will try to be as clear and explicit as I can about the games, so that all readers can form a picture of what I am talking about.

Readers who want to explore the many types of video games, see pictures from them, even download demonstrations of various games, and otherwise find out more about them can log on to a wide array of Internet sites devoted to video games. Any game I mention in this book can be thoroughly investigated in this way. Here are some sites I can recommend, though there are many others: gamezone.com, gamedex.com, pcgamer.com, gamepro.com, gamespot.com, ign.com, MrFixitOnline.com, womengamers.com, and gamecritics.com. Joystick101.org offers up-to-the-minute articles and critical perspectives, beyond reviews, about games and controversial issues about games.

Third, I am not, in this book, meaning to imply that I think “old” baby boomers like me ought to run out and start playing video games. Many will find the games too hard and frustrating, without the personal payoff that

makes for continued practice. Nonetheless, we can learn a lot from those young people who play games, if only we take them and their games seriously. And, indeed, I am always struck by how many people, even some of the liberal advocates of multiculturalism, readily decay and seek to override people's cultures when these cultures are popular peer-based ones centered around things like video games. Let it be said, too, having mentioned multiculturalism, that a great many African Americans love video games, just as do a great many Anglo Americans and everyone else in between. And, yes, poor children and teenagers do play video games, even if they have to find a computer or game console at school, in a library, or community center, or at a friend's house. There are important issues of equity here, though, and I discuss these at the end of the book.

Finally, there is this: Two issues have taken up the vast majority of writing about video games: violence (e.g., shooting and killing in games, depictions of crime) and gender (e.g., whether and how much girls play, whether and how video games depict women poorly). I have nothing whatsoever to say about these issues in this book. They are well discussed elsewhere. I do, however, discuss, in chapter 6, some very heated social and political issues that arise when considering video games at a time when, thanks to free powerful software, almost any group can design a sophisticated 3-D video game to represent its own values and interests.

Though they are not important for the basic argument of this book, my own views on the violence and gender issues are as follows: The issue of violence and video games is widely overblown (especially in a world where real people are regularly really killing real people in wars across the world that we watch on television). Debate over violence in video games is one more way in which we want to talk about technology (or drugs, for that matter) doing things to people rather than talking about the implications of people's overall social and economic contexts.

In any case, shooting is an easy form of social interaction (!) to program. As realistic forms of conversation become more computationally possible (a very hard task), I predict that shooting will be less important and talking more important in many games, even shooter games. Even now, many shooting games stress stealth, story, and social interaction more than they used to.

Furthermore, there are many categories of very sophisticated video games—simulations and some strategy games—that do not involve any violence at all. Nonetheless, I base my arguments in this book in part on shooter

games, precisely because they are the "hardest" case. It's pretty clear that a simulation game (like *SimsCity*) involves important learning principles, if only because many scientists themselves use such simulation techniques. However, it is easier to miss and dismiss the learning principles in other sorts of games. But they are very much there, nonetheless.

As to gender: I have no doubt that video games, like most other popular cultural forms, overstress young, buxom, and beautiful women in their content. Furthermore, with several major exceptions, these women are often not the main characters in the games. However, as more girls and women play games, this will change. And, indeed, in role-playing games, you can design your own character. In a game I am playing at the present time (*Dungeons Siege*), I am an African American female, though I could only make my skin light black and my body fairly shapely; wider choices will, I am sure, be available as time goes on. (I personally don't want to play in a fantasy world as a balding, overweight, aging white male, since I get plenty of opportunity to do that in the real world, but then, my identical twin was upset, when he was designing his character for the game that he could not design such a character as the hero.) Games, of course, reflect the culture we live in—a culture we can change.

As to the issue of girls and women playing games, they are quickly catching up with the boys and men, though they often play different games (e.g., *The Sims*). Nevertheless, there are Internet sites devoted to women who play the sorts of shooter games more commonly associated with males. When we academics feel our interests define the world, we should keep in mind the following fact: The largest category of video-game players are middle-age women playing video card games alone and together on the Internet. I have nothing here to say about card games. That just shows that we academics still have much to learn about the "real" world. I guess that's why we keep trying.

BIBLIOGRAPHICAL NOTE

In order not to clutter the text with references, I will not insert references directly into the text of each chapter but will instead give citations to the literature in a bibliographical note at the end of each chapter.

Poole 2000 and Hertz 1996 are good analyses of the design of video games and their role in our culture. Poole 2000 discusses the statistics on who plays what video games, as well as the fact that the video game industry makes more money in a given year than does the movie industry. Kent 2001 is an entertaining history of video games. Greenfield 1984 and Loftus and Loftus 1983 are good early discussions of the role of learning and thinking in video games. King 2002, prepared for a

museum exhibit on video games, contains a wide array of interesting articles on all aspects of the games.

Pinker 1999 is a good, basic introduction to cognitive science. For more on cognitive science, especially as it applies to schools and learning, see Bransford, Brown, & Cocking 1999; Bruer 1993; Gardner 1991; and Pellegrino, Chudowsky, & Glaser 2001. These sources discuss work on situated cognition, as well as a number of other areas. For additional work on situated cognition, see Brooks 2002; Brown, Collins, & Dugid 1989; Clark 1997; Gee 1996; Lave 1988; Lave and Wenger 1991; Rogoff 1990; and Tomasello 1999. The fact that botanists and landscape architects classify and think about trees differently is taken from Medlin, Lynch, & Coley 1997.

For a discussion of good, conceptually based science instruction in schools, see Bruer 1993; Cognition and Technology Group at Vanderbilt 1997; and diSessa 2000. For introductions to the New Literacy Studies, see Barton 1994; Gee 1996; and Street 1995. For work on connectionism and the human mind as a pattern recognizer, see Clark 1989, 1993; Gee 1996; Margolis 1987, 1993; and Rumelhart, McClelland, & the PDP Research Group 1986.

2

SEMIOTIC DOMAINS: IS PLAYING VIDEO GAMES A "WASTE OF TIME"?

LITERACY AND SEMIOTIC DOMAINS

WHEN PEOPLE LEARN TO PLAY VIDEO GAMES, THEY ARE LEARNING a new *literacy*. Of course, this is not the way the word "literacy" is normally used. Traditionally, people think of literacy as the ability to read and write. Why, then, should we think of literacy more broadly, in regard to video games or anything else, for that matter? There are two reasons.

First, in the modern world, language is not the only important communicational system. Today images, symbols, graphs, diagrams, artifacts, and many other visual symbols are particularly significant. Thus, the idea of different types of visual literacy would seem to be an important one. For example, being able to "read" the images in advertising is one type of visual literacy. And, of course, there are different ways to read such images, ways that are more or less aligned with the intentions and interests of the advertisers. Knowing how to read interior designs in homes, modernist art in museums, and videos on MTV are other forms of visual literacy.

Furthermore, very often today words and images of various sorts are juxtaposed and integrated in a variety of ways. In newspaper and magazines as well as in textbooks, images take up more and more of the space alongside words. In fact, in many modern high school and college textbooks in the sciences, images not only take up more space, they now carry meanings that are independent of the words in the text. If you can't read these images, you will not be able to recover their meanings from the words in the text as was more usual in the past.

Reading
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