Chapter 9

Digital TV and the Emerging Formats of Cyberdrama

Though the technology of the Star Trek holodeck remains improbably distant and the puzzle mazes, shooting games, and tangled Web sites of the mid-1990s have only begun to tap the expressive potential of the new medium, these first experiments in digital storytelling have aroused appetites, particularly among the young, for participatory stories that offer more complete immersion, more satisfying agency, and a more sustained involvement with a kaleidoscopic world. Although the tools of true procedural authorship are still in their early stages, it has become increasingly easy for interactors to construct their own worlds on the MUDs or to build custom game levels for open-architecture fighting games. For those who are not ready for procedural engagement, the preparation of digital text, audio, and video is increasingly accessible through off-the-shelf software. Web site design is fast becoming as easy as desktop publishing. Just as everyone who can cope with a keyboard and mouse can now make a greeting card, soon everyone who can master word processing will be able to design a simple Web page, complete with hyperlinks to other sites and color graphics.

As more and more people are growing as facile with digital environments as they are with pen and pencil, the World Wide Web is becoming a global autobiography project, a giant illustrated magazine of public opinion. Independent digital artists are using the Web as a global distribution system of underground art, including illustrated stories, animations, hypertext novels, and even short digital films. Although science fiction and fantasy narratives will always remain strong in cyberspace, the documentary elements of the Web—the family albums, travel diaries, and visual autobiographies of the current environment—are pushing digital narrative closer to the mainstream.

At the same time that legions of new Web surfers are busy debating politics or posting digitized pictures of the family schnauzer for the enjoyment of distant dog lovers, media conglomerates are trying to carve up cyberspace into revenue-producing fiefdoms. The entertainment industry has looked upon the world of bits as merely a new delivery channel, a simple wire for carrying their vast inventories of content to another market. They have been slow to understand what people look for in a digital environment, and they are likely to remain conservative in the creation of digital products, seeking only to modify the familiar formats of film and television so that they will somehow become interactive. The shape of narrative art and entertainment in the next few decades will be determined by the interplay of these two forces, that is, the more nimble, independent experimenters, who are comfortable with hypertext, procedural thinking, and virtual environments, and the giant conglomerates of the entertainment industry, who have vast resources and an established connection to mass audiences.

Looking ahead to the next forty years—the working life of the generation that has grown up with videogames and educational computing tools—we can expect a range of narrative formats to emerge as authors look for ways to preserve the customary pleasures of linear narrative while exploiting the essential properties of the digital medium with increasing sophistication. In this chapter we tear our eyes away from the distant horizon of the holodeck to focus on the entertainment products of the more immediate future. If the current multimedia CD-ROMs are the equivalent of the "photoplay," then what will be the next giant steps that will carry electronic narrative down the path from additive to expressive form?

The Hyperserial: TV Meets the Internet

One of the clearest trends determining the immediate future of digital narrative is the marriage between the television set and the computer. The technical merger is already under way. Personal computers marketed to college students allow them to switch off the central processing unit and tune in the latest episode of *Friends* on the same screen they use for word processing. The most computer-phobic couch potatoes can now buy a "Web TV" that will allow them to point and click their way across the Internet and even to send and receive e-mail, using an ordinary phone line. American television is rapidly moving toward a high-definition digital standard, which will turn the broadcast TV signal into just another form of computer data. Meanwhile, the Internet is beginning to function as an alternate broadcasting system; already it offers a wide assortment of live programming, including on-line typed interviews, digital radio programs,

and even live video coverage of rock music concerts, club openings, and performance art. As television channels and the World Wide Web come closer together, the telephone, computer, and cable industries are racing to deliver the new digital content to the end user faster and in greater quantities. The merger that Nicholas Negroponte has long been predicting is upon us: the computer, television, and telephone are becoming a single home appliance.[1]

From the consumer's point of view, the activities of watching television and surfing the Internet are also merging, thus driving the marketplace to create new frameworks of participation. Television viewers populate hundreds of computer chat rooms and newsgroups, often logging on to these collective environments while watching the shows in order to share their responses with fellow audience members. Broadcasters have experimented with displaying some of these comments in real time, as subtitles beneath the images of an entertainment program, as questions for interviewees, or as quotations at the beginning and end of news segments. The network formed by the cooperative venture between Microsoft and NBC exists as both a Web site and a cable television station; these two separate venues are so intertwined and mutually referencing that it would be hard to say which one is "the" MS/NBC. They are one entity, even though they now appear on two separate screens. Viewer digital participation is moving from sequential activities (watch, then interact), to simultaneous but separate activities (interact while watching), to a merged experience (watch and interact in the same environment). Although we cannot yet predict the economics of the television-Internet merger, these increasing levels of participatory viewership are preparing us for a near-future medium in which we will be able to point and click through different branches of a single TV program as easily as we now use the remote to surf from one channel to another.[2]

The more closely the new home digital medium is wedded to television, the more likely it will be that its major form of storytelling will be the serial drama. As we have already seen, the daytime soap opera has already been translated into the more participatory Web soap now popular on the Internet. Adding motion video to the format will increase demand for the dramatic immediacy and more tightly plotted action that we expect on TV. It will be hard for the chattily written Web soaps—which are based on a scrapbook metaphor—to compete in the same environment as television serials once the novelty of Web surfing has passed. At the same time, linear television will seem too passive once it is presented in a digital medium, where viewers expect to be able to move around at will.

Probably the first steps toward a new *hyperserial* format will be the close integration of a digital archive, such as a Web site, with a broadcast television program. Unlike the Web sites currently associated with conventional television

programs, which are merely fancy publicity releases, an integrated digital archive would present virtual artifacts from the fictional world of the series, including not only diaries, photo albums, and telephone messages but also documents like birth certificates, legal briefs, or divorce papers. Such artifacts appear in the best of the current Web soaps but do not sustain our interest without the motivation of a central dramatic action.

The compelling spatial reality of the computer will also lead to virtual environments that are extensions of the fictional world. For instance, the admitting station seen in every episode of *ER* could be presented as a virtual space, allowing viewers to explore it and discover phone messages, patient files, and medical test results, all of which could be used to extend the current story line or provide hints of future developments. The doctors' lounge area could contain discarded newspapers with circled advertisements, indicating, for example, that Dr. Lewis is looking for an apartment in another state or that Dr. Benton is shopping for an engagement ring. An on-line, serially updated virtual environment would open up a broadcast story in the same way a film expands a story told in a stage play, by providing additional locations for dramatic action or wider coverage of the characters or events merely referred to in the broadcast series. We might see more of the home life of the *ER* doctors, perhaps noticing that Mark Green keeps a photo of the absent Susan Lewis next to a picture of his daughter or that Doug Ross has held on to the medical ID bracelet of a woman who died partly as a result of his out-of-control sexual life. Like the set design in a movie, a virtual set design would be an extension of the dialogue and dramatic action, deepening the immersive illusion of the story world.

All of these digital artifacts would be available on demand, in between episodes, so that viewers could experience a continuous sense of ongoing lives. A hyperserial might include daily postings of events in the major story line—another fight between feuding characters or a set of phone messages between separated lovers—that would be alluded to in the broadcast segments but detailed only in the on-line material. The Web-based material might also contain more substantial development of minor characters and story lines. Maybe Shep, whom Carol broke up with last year, is sending her letters telling her how he is dealing with the stresses of his job as an emergency medical worker, or perhaps the ex-prostitute with AIDS is in danger of losing her apartment. By filling out the holes in the dramatic narrative, holes that prevent viewers from fully believing in the characters, and by presenting situations that do not resolve themselves within the rhythms of series television, the hyperserial archive could extend the melodramatic broadcast drama into a more complex narrative world.

Putting broadcast television into digital form would also allow producers to make previously aired episodes available on demand. A hyperserial site would

offer a complete digital library of the series, and these episodes, unlike the same content stored on a VCR tape, would be searchable by content. Viewers could call up individual segments of past episodes (the diner scene in which Mark finalizes his divorce agreement) or view a single continuous story thread (the deterioration of Mark's marriage) that was originally woven into several episodes. Such an encyclopedic representation of the complete series would offer television writers the larger, more novelistic canvas that serial drama has been moving toward for the last two decades. Writers could think of a hyperserial as a coherent, unfolding story whose viewers are able to keep track of longer plot arcs and a greater number of interconnected story threads. Compared to today's television writer, the cyberdramatist could explore the consequences of actions over longer periods of time and could create richer dramatic parallels, knowing that viewers would be likely to juxtapose events told months or even years apart.

There are several ways the complex organizational powers of the computer could be used to support a much denser and more demanding story world. William Faulkner was looking for a similar technological aid when he asked his publisher to use different colors for the print in *The Sound and the Fury* to guide the reader through Benjy's section of the story, a device that would make the time-jumping stream of consciousness of the mentally arrested boy comprehensible without the elaborate charts it otherwise requires from painstaking college professors. Faulkner also included a map of the town of Jefferson in the endpaper of *Absalom, Absalom!* that indicates where some of the events of his novels occurred, including not just the location of some of the more colorful murders but also of the pasture the Compson family sold so that Quentin could go to Harvard. The tongue-in-cheek map ("William Faulkner, Sole Owner and Proprietor") binds the multinovel, multifamily, multicentury saga together, giving us a taste of how Faulkner himself saw his mythical Yoknapatawpha County, not as a mere backdrop for his elaborately spoken stories but as a continuous geographical and historical realm that transcended all the stories told about it. The encyclopedic capacity of the computer allows for storytelling on the Faulknerian scale and invites writers to come up with similar contextualizing devices—color-coded paths, time lines, family trees, maps, clocks, calendars, and so on—to enable the viewer to grasp dense psychological and cultural spaces without becoming disoriented.

In the Victorian era, arguably the pinnacle of novel writing in English, fiction writers often published in weekly or monthly installments that would then be collected and rereleased in bound volumes. Cyberdramatists would be in a similar position and would have the same advantage of writing for two kinds of audiences—the actively engaged real-time viewers who must find suspense and satisfaction in each single episode and the more reflective long-term audience

who look for coherent patterns in the story as a whole. But the digital storyteller would also be aware of a third audience: the navigational viewer who takes pleasure in following the connections between different parts of the story and in discovering multiple arrangements of the same material. For instance, a *Homicide* viewer might want to see more of how Pembleton's struggle to regain his mental functioning after a stroke has affected his relationship with his wife and infant. Or we might be offered a chance to get a fuller understanding of the nurse on *ER* whose ineptitude is a risk to patient safety but who is herself a victim of the hospital's policy of rotating senior nurses away from their areas of expertise. In a well-conceived hyperserial, all the minor characters would be potential protagonists of their own stories, thus providing alternate threads within the enlarged story web. The viewer would take pleasure in the ongoing juxtapositions, the intersection of many different lives, and the presentation of the same event from multiple sensibilities and perspectives. The ending of a hyperserial would not be a single note, as in a standard adventure drama, but a resolving chord, the sensation of several overlapping viewpoints coming into focus.

Mobile Viewer Movies

The hyperserial model of cyberdrama described above is based on a transitional situation in which viewers are alternately watching television broadcasts and navigating a Web-like environment accessible from the same screen. But as digital television evolves as a delivery medium, viewers may find themselves unable to sit still for a conventionally told two-hour story. Just as the movie camera made the stage box seem too confining, so may the computer mouse make the director's camera seem too confining. Interactor/viewers may want to follow the actors out of frame, to look at things from multiple vantage points. We can already see evidence of such viewer restlessness in the hyperactive camera style of the most filmic television series *(Homicide, NYPD Blue),* in which the noncontinuous cuts and rapid circling movements of the often handheld cameras reflect the audience's own desire to roam around the space, to experience the action in three dimensions, and to jump forward to the next interesting moment as quickly as possible. Although critics who are strongly attached to older forms of presentation might see such restlessness as evidence of a shortened attention span or an increased need for stimulation, it can also be seen as the expression of a more active curiosity or eagerness to look around for oneself and make one's own discoveries. In some ways this desire to anticipate the next story move is similar to the impatience that comes just before individual literacy, when members of a culture (as in the early Renaissance) or a subculture (Victorian

women) or an age group (grade-school children) can no longer stand to be read to but want to go through their own chosen reading at their own pace.[3]

To satisfy this desire, writers can create stories told in simultaneous actions, like the bedroom farce *The Norman Conquests* or the slice-of-life domestic drama "Evening," both discussed in chapter 6. Viewers would watch a "mobile viewer" cyberdrama, remote control device in hand, ready to click and branch through the story as it unfolds. The dramatic action would look like any ordinary television show, but whenever one character in a group of two or more exits to another room of a house or goes to another place in the fictional world, the viewer would have the option of choosing whom to follow. These choice-points need not look like computer program menus, nor should they stop the action in its tracks. Glorianna Davenport's Interactive Cinema Group at the MIT Media Lab has come up with several graceful alternate presentation styles in which a continuous movie plays before the viewer, offering automatic default sequences when no choice is made or responding to the suggestive positioning of a cursor by displaying an appropriate alternative selection in a non-interruptive, seamless manner.[4]

Moviegoers of the future may watch a single visual presentation but be offered multiple sound tracks. Everything that is said aloud in the scene might be on one track, available to everyone, but the private thoughts of various characters would be on their own tracks. A movie of a poker game or a sting operation might keep the motives of the protagonists secret from one another; since viewers could choose which character to align with, different members of the audience would watch the same scene with very different information. Moviegoers might be lured back to see such a movie again from a different point of view or to gain access to the thoughts of a character whose motivations were hidden from them the first time. Viewers in a 3-D theater watching a scene of an exotic café might hear all of the conversations spoken normally by people at their own table but would also be able to eavesdrop on whispered conversations or on people at adjoining tables by leaning their heads toward the speaker. This multidirectional audio, an enhancement of existing sound technology, would serve to make the perception of three-dimensional space much more concrete. Since these possibilities would lead to multiple viewings of the same film, and would therefore yield greater revenue for movie production companies without requiring the creation of additional footage, they seem likely to be attempted.

The mobile viewer approach could also be combined with the hyperserial. Perhaps a future *ER* will offer us a choice of trauma rooms in which to locate ourselves, or a future *Homicide* might offer us a choice of murder investigations to follow. Viewers who did not indicate explicit choices or who were watching with conventional television sets would see a continuous drama made up of

default scenes, just as viewers with black-and-white sets were unable to take full advantage of the first color programs. But those with interactive access could choose to see more of some plotlines than others and could follow certain characters more closely. All of the dramas would end appropriately at the same time, and mobile viewers would also have a sense of having chosen from among several sequences to pursue the action or situation most dramatically intriguing to them.

This mobile viewer format would be very well suited to the current television genre of the problem drama, which addresses a socially charged issue, like racism or abortion, on which viewers hold very different views. A mobile viewer cyberdrama could be presented in such a way that viewers' choice of point of view would influence the kind of information they receive. Choosing to see the story in a particular way would therefore be a self-revealing act that might leave the viewer questioning his or her values.

The cyberdramatist would have the task of constantly arousing the mobile viewer's curiosity, fears, and sympathies, since every choice made by the mobile viewer should be expressive of a particular moment of imaginative engagement. Such choices, which would not correspond to a simple right-wrong dichotomy, should be interestingly different from one another and even more revealing when juxtaposed. One problem of delivering such a multibranching story over a television-like apparatus would be the conflicts it would engender over who controls the remote control device, who among the viewers in a household gets to choose the path of the story. It may become the custom for viewers to take turns in controlling the story narration, or perhaps broadcasters will offer mobile viewer stories several times within the same week so that viewers can experience multiple versions or so that the teenagers of the household can see the story from a different point of view than that of the adults or the women can see a story that differs from the one the men see. Any story that is presented in this way would have to offer the right balance of common and divergent experiences so that viewers are engaged by the same central situations but then see provocatively different versions of the events.

Mobile viewer audiences might then be offered the opportunity to converse with one another in chat rooms that are configured as sites within the universe of the program (i.e., sites such as cafés or squad rooms or school cafeterias). The treatment of controversial subjects in divergent narratives and the subsequent public on-line discussion would be a particularly appropriate format for television, which serves as a medium for what David Thorburn has called "consensus narrative," that is, for stories that define the concerns of the society and present the received wisdom about these concerns.[5] This format would provide a less voyeuristic way of engaging people in discussions about the kinds

of disturbing behaviors upon which sensational talk programs focus. Issues of gender identity, sexual behavior, child rearing norms, or domestic violence could be framed by compelling stories that would then provoke discussion.

The creation of a commentary space within the fictional universe would put the viewer in the role of a member of a Greek chorus, a sounding board for the concerns of the protagonists.[6] The characters themselves (in avatars operated by the writers or by the improvising actors) might visit such an arena during a time of emotional crisis or dramatic choice and engage the viewers in on-line conversation. Landview's Dorian (on *One Life to Live*), a particularly villainous character, could appear at an open house for fans in which they could berate her for her evil scheming. Sympathetic viewers could visit a dying character on *ER* to provide encouragement. A character on the verge of an abortion or facing a child's disturbing sexual behavior or deciding whether to risk her job to reveal some corporate misdeed could bring the dilemma into the shared fictional space for moderated discussion. An actress on *NYPD Blue* recently complained that people on the street stop her to tell her that she—that is, her character—was wrong to turn down a marriage proposal from the character played by the handsome leading man. In an *NYPD Blue* hyperdrama, viewers could come into a virtual squad room to gossip about the reluctant bride's decision and to offer their opinions or to hear her venting her ambivalent feelings. Such an engagement with a wider community might make the writing on such shows more psychologically believable, particularly for the female characters, who are often not imagined with sufficient interiority to sustain viewer involvement.

The role of choral commentator would come easily to television fans, but once they find themselves within the fictional world of the series, they may not be content with just passing through and commenting on the story. They may want to move into the story world and play a more active role in the plot.

Virtual Places and Fictional Neighborhoods

Currently the most inhabited fictional spaces—the MUDs—are made of words alone, but as the Internet becomes faster and more capacious, as the conventions of three-dimensional environments become standardized, and as graphical authoring tools become more functional and user-friendly, there will be an explosion of virtual architecture that will make the public digital environment look less like a billboard-strewn highway and more like a populated landscape. In the next decade, as the dungeons and forests of the MUDs are translated from words into three-dimensional images, more and more users may find themselves residing in such shared fantasy kingdoms.

Perhaps the first steps in this direction will be in the form of immersive visits to pleasurably explorable 3-D dreamscapes. The videogame manufacturers are already moving in this direction by offering worlds so well realized that the moat at the front portcullis is as appealing as the adventure within the castle. As joysticks and VR gear allow us greater mobility (not just up, down, left, and right but also in and out of a 3-D space) with more power of observation (i.e., with the ability to switch position as if we were operating a camera focused on the dramatic action) and with less physical encumbrance or need for manual dexterity, interactors will be lured into worlds where they float, tumble, and arc through thrillingly colored spaces, fly through imaginary clouds, and swim lazily across welcoming mountain ponds. The nightmare landscape of the fighting maze, in which we feel perpetually imperiled, may give way to enchanting worlds of increasingly refined visual delight that are populated by evocative fairy-tale creatures.

A visit to such a space will combine the rhythmic kinetic pleasures of dancing with the visual pleasures of sculpture and film; the space itself will be expressive, as our movement through it will be, and the landscape will be filled with objects of desire and enchantment. We will go out over digital networks to experience the thrill of entering previously inaccessible environments: an erupting volcano, a primeval rain forest, a distant planet; we will walk across the parted Red Sea with Moses or sit down to a performance in a virtual Elizabethan theater. These compelling immersive landscapes might constitute a new kind of pastoral art, an artificial re-creation of nostalgically fantasized natural or historical environments. Just as ancient Greek city dwellers enjoyed reciting verses about frolicking shepherds, so too will twenty-first-century citizens of the information age enjoy transmuting their data-laden screens into elfin groves, Victorian parks, or galactic fireworks displays.

We will go to these environments alone or with others, and perhaps in "smart costumes" like Laurel's crow body (see chapter 2). We will fly along with virtual geese and pet digital unicorns. The rooms will be richly textured and atmospheric. The creatures will be inherently charming in the way that children and small animals are charming to us. They will be easy to interact with because they will trigger our most basic interactive impulses—to offer them food, pet them, and clap with pleasure as we watch them cavort. Gradually these lushly realized places will turn from spectacle experiences to dramatic stages. We will move from the pleasures of immersion and navigational agency to increasingly active and transformational experiences.

Once we are accustomed to being on the virtual stage, there will be many routes into the world of cyberdrama. The exploratory spaces and chat rooms of television hyperserials will allow viewers to progress from playing the roles of

explorer and choral commentator on the action to playing the familiar role of the television neighbor. From Ozzie and Harriet's home to Dan and Roseanne's, we have been virtual guests in scores of family living rooms, even as they have simultaneously been guests in ours. When the television set becomes digital, we will find it even easier to imagine ourselves within that virtual domain which lies somewhere between the television sound stage and our own living room. We will not, of course, move in with the characters on the screen, but we may very possibly move next door to them, occupying a contiguous virtual space and experiencing events, in persona, that are also happening to the characters in the series.

The Lucasfilm games are already moving in this direction. The first *Star Wars* arcade game allowed the player to repeat the actions of the movie hero, thus enhancing the player's enjoyment and excitement when events in the movie were duplicated in the game-play. To hear Alec Guinness's voice whisper "Use the Force!" was to become Luke Skywalker for a moment in a magical way. But the PC-based game *Rebel Assault* is even more exciting because it allows players to have their own adventures, parallel to those in the movies and carefully woven into the same event sequence and time frame. In *Rebel Assault,* the player is not Luke himself but a rookie cadet who rises to squad leader and goes on all the key missions of the *Empire Strikes Back* but from a different part of the battlefield. For instance, at one point the player sees the movie heroes leave the ice planet Hath and is left behind to mop up and to escape as best he can while the Empire's forces close in. When my own son at age thirteen watched the movie again after mastering the complex videogame, he jumped up and down with excitement when he recognized the parallel sequence. "I was there!" he cried out. "I stayed on the planet after Han leaves. It was even more dangerous for me!" Like Don Quixote, he was able for that moment to act within a beloved narrative he had only witnessed before.

As 3-D environments become more detailed, children and adolescents will be increasingly drawn into virtual environments that function as satellites of the communities described in movies, comic books, and, most compellingly, broadcast television series. For instance, a program like *Dr. Quinn: Medicine Woman* might set up a series of virtual frontier towns some miles away from the series' Colorado Springs location, towns populated by interactors who could choose to be blacksmiths, barbers, general store owners, saloon keepers, scouts, and, of course, female doctors and who could be given their own homesteads or boardinghouse rooms in particular physical locations within the fictional world. The creators of the series could set some plots in motion within these towns and let other actions arise spontaneously from the role-playing of the participants. Areawide events that happen on the series, such as an influenza epidemic or a

confrontation with General Custer, would also happen in the neighboring towns. (Role-playing interactors could find themselves informed by the godlike authors of such a fictional world that their characters have been taken ill, arrested, or even killed).

Role-Playing in an Authored World

The kinds of virtual worlds I am imagining would combine the immersive pull of an authored story, like an ongoing television serial, with the open-ended agency of the MUDs. They would relieve the interactors of the responsibility for inventing the fictional world on their own.

Multiuser worlds without such external authoring run into trouble in establishing the boundaries of the illusion. For instance, one of the first experiments with a graphics-based virtual world, called Habitat, found itself immediately divided between interactors who wanted to shoot and kill one another and those who wanted to form a shared community. The organizers of the project negotiated a compromise by creating a wilderness land in which violence was routine and a town where it was outlawed. Soon the members of the town founded a church and elected a sheriff—they had essentially re-created the popular fantasy of the pioneer American West—and they immediately began quarreling over whether the townspeople could outlaw violence altogether.

The role of a central author (or team of authors) in such an environment might be to negotiate such boundary issues, for example, by insisting that the improvisational elements remain consistent with a general story line. This need not mean censoring the interactors' imagination. Moreover, the author should be able to improvise along with the interactors and to take advantage of spontaneous actions to create dramatic events appropriate to the fictional world. For instance, the Habitat world was disrupted whenever a player gained possession of the villain Death's deadly virtual gun, designed for use by the wizards of the system only. One wizard handled this situation by threatening to throw the player off the system unless he returned the gun, but a more imaginative genie faced with the same situation staged an elaborate ransoming ritual, which became a spectacle for the whole community.[7]

If participatory environments merge with authored environments, as I think they will, tensions between the author and the participants may increase. There will always be a trade-off between a world that is more given (more authored from the outside and therefore imbued with the magic of externalized fantasy) and a world that is more improvised (and therefore closer to individual fantasies). The area of immersive enchantment lies in the overlap between these two

domains. If the borders are constantly under negotiation, they will be too porous to sustain the immersive trance.

A cyberdrama that combines a strong central story with active role-playing would need clear conventions to separate the area in which the interactors are free to invent their own actions from areas over which they cannot expect to have control. For instance, suppose I were to play a role in a cyberdrama based on a broadcast television series like *Babylon 5;* let us call it *Jerusalem* 6. This world would include a regular central story, like an hour-long television show (but not necessarily delivered in a single consecutive hour), and a virtual place, accessible over the Internet, in the form of a three-dimensional model of the space station. Now suppose that I decide, after watching some segments of the series in ordinary broadcast television format, to take a role in the story. I get to pick which of the alien races I want to belong to (the S'kri), what my cartoon-figure avatar looks like (cute, pointy horns), my name (Duncour), and occupation (spy).

The cyberdrama program then selects the other aspects of Duncour's life on *Jerusalem* 6, such as where I work, who the members of my family are, and which of the potential plots I will be involved in. I might witness a crime on my first day on the job or be faced with a moral dilemma when a member of an enemy race, the Karulls, falls sick at my doorstep. Since I know what is happening in the main story, I will be alert to events or documents that might affect it. Perhaps I will come across evidence of corruption in one of the most trusted members of the space station, who has been opposing a treaty with the S'kri. I would know what to do about this discovery from having seen the actors on the series deal with similar situations.

The authors of the series would have to respond to the participants' inventions while still maintaining the general outlines of the story. The participation of thousands, or perhaps even millions, of interactors in a centrally controlled story world would only be possible by limiting the kinds of roles they could play and the kinds of actions they could take. A factionalized plot, like the intricate, diplomatic maneuvering on *Babylon 5* (or in a historical romance set in the French Revolution or in a *Masterpiece Theater* saga of the English upper class), would be ideal for such a world because it would allow for many individual intrigues that fit into a larger conflict. Let us say that in our *Jerusalem* 6 story the S'Kri are fighting for their liberation from the Karulls. My character, Duncour, belongs to an underground cell (there might be thousands of such groups) allied with the dashing Grand Toff, who is one of the central characters of the series. If the Grand Toff is captured by the Karulls (as arranged by the authors), the whole cell (perhaps twenty people) would work to free him. Unlike a videogame, a role-playing world should allow each interactor to choose from

several ways to go about the task, including bartering as well as fighting. The success or failure of the many small cells of interactors would influence the way this plot is developed and how long it takes to free the Grand Toff. My actions would therefore be meaningful in my own story and in the story of my small role-playing group, as well as in the central plot.

It will probably take a large, hierarchically organized writing team, comparable to the groups of writers who work on daytime television series, to generate enough plot material to maintain the interest of participants and to make sure that events in one part of the story do not anticipate or obstruct events in another. It will also take carefully ritualized patterns of participation, so that the interactors know what to expect of one another and of the authors controlling the virtual world. Most challengingly, it will take programmed occurrences that make the story world eventful and unpredictable for all of the interactors without limiting their freedom or intruding on their improvisational pleasure.

Highly ritualized interactions can actually increase the participants' freedom, rather than limiting it, by offering them more choices of coherent action. The commedia dell'arte could put on unscripted plays because the actors knew so many formulas to plug into them. Similarly, live-action role-playing games work best when experienced players guide the action into standard channels of treasure hunting, combat, social behavior, and negotiation. Among the best guides to behavior for less experienced role-players are the "mechanics" discussed in chapters 4 and 5, the formulas of behavior that provide symbolic alternatives for actions that cannot be acted out directly without disturbing the boundaries of the illusion.

For instance, suppose that when I signed on to *Jerusalem* 6, I received a character sheet that included the information that members of the Karull race found S'Kri with shiny horns like mine totally irresistible. Now let us say that I have met, in a virtual café, a Karull commander who has information on where the Grand Toff is being held. My character sheet tells me that I can seduce the commander if I spend fifteen minutes talking to him alone. I decide to help free my imprisoned leader by using my powers of seduction, and as I talk to the commander I discover that my avatar is looking more and more appealing (perhaps her delicate horns are twinkling at her companion) and that romantic music is swelling around us. No matter what we say to one another, the seduction is in progress. After fifteen minutes, the scene changes. We find our avatars have been moved to another virtual space—the back room of the bar. The lovemaking need not be shown (it is a family drama), but the interactors could role-play whatever parts of the encounter would affect the plot or be compelling for the development of character.

Since this is an adventure story, the authors would have programmed seduction sequences to include an opportunity for deception of various kinds. Let us say that in this case the system fades out on the bedroom scene and blanks the computer screen of the interactor playing the Karull commander, who understands this to mean that his character is sleeping. Meanwhile, on my own screen I see an image of his avatar sleeping. I also see that the commander's jacket has been thrown over a nearby chair and that there is something sticking out of a pocket. It would be up to me to decide if I want to risk stealing it. Perhaps it is a document telling where the Grand Toff is being held. Perhaps my companion will awaken before I can get away. Scenes like these would offer interactors the intensified immersion of collective role-playing as well as the benefit of a more surprising and eventful world than they could make up on their own.

The more structured such interactions are, the more automated such surprises could be, with the computer controlling involuntary or serendipitous events like the sleeping patterns of lovers or the opening of the pocket. A procedural author would specify the kinds of conventions (like seduction) the interactors would have access to, the conditions under which the computer would intercede and how (e.g., the computer might maximize the chance of detection when enemies are sleeping together), and perhaps the mobile viewing patterns of the interactors (thus determining which parts of the central story happen in the virtual space and who gets to see them and when). The result would be a story in which the immersive power of the given world reinforces the pleasure of the enacted role.

Of course, many people will prefer a private experience to a collective one. For them, cyberdrama would offer the opportunity to be the protagonist in a bounded world, perhaps one delivered on a digital video disc or other successor to today's CD-ROM rather than over the Net. Some worlds might be derivative from novels, films, or other media, like the Casablanca example in chapter 7, but they could also be derived from historical material, enticing Civil War buffs to live through the American 1860s or baby boomers to relive the 1950s to 1980s. Solo play would allow the interactor to explore all the stories within the limits of the world and to play all the parts until they had exhausted all the possibilities of personal imaginative engagement within a nostalgically charged situation. Although the connective and collaborative pleasures of the digital environment are the focus of much current attention, the private pleasures, like those of reading, are also likely to continue to attract us. As a domain in which we can actively participate in a responsive environment without consequence in the real world, the desktop story world may, like the novel, engage our most compelling transformational fantasies.

The Emerging Cyberdrama

I have referred to these various new kinds of narrative under the single umbrella term of *cyberdrama* because the coming digital story form (whatever we come to call it), like the novel or the movie, will encompass many different formats and styles but will essentially be a single distinctive entity. It will not be an interactive this or that, however much it may draw upon tradition, but a reinvention of story-telling itself for the new digital medium. At first the most strongly participatory cyberdrama formats may be the domain of children and adolescents, who will eagerly move from shooting games to assuming personas within dense fictional worlds, but it would be wrong to think that the format itself is merely childish. As a new generation grows up, it will take participatory form for granted and will look for ways to participate in ever more subtle and expressive stories.

Of course, the story forms described here are guesses, dependent on market forces as well as audience tastes. The term *cyberdrama* is only a placeholder for whatever is around the corner. The human urge for representation, for storytelling, and for the transformational use of the imagination is an immutable part of our makeup, and the narrative potential of the new digital medium is dazzling. As the virtual world takes on increasing expressiveness, we will slowly get used to living in a fantasy environment that now strikes us as frighteningly real. But at some point we will find ourselves looking through the medium instead of at it. Then we will no longer be interested in whether the characters we are interacting with are scripted actors, fellow improvisers, or computer-based chatterbots, nor will we continue to think about whether the place we are occupying exists as a photograph of a theatrical set or as a computer-generated graphic, or about whether it is delivered to us by radio waves or telephone wires. At that point, when the medium itself melts away into transparency, we will be lost in the make-believe and care only about the story. We will not notice it when it happens, but at that moment—even without the matter replicators—we will find ourselves at home on the holodeck.

Chapter 9: Digital TV and the Emerging Formats of Cyberdrama: 2016 Update

This chapter fairly accurately predicted the development of television narrative in the past fifteen years, and identified several still-open opportunities for interactive narrative design. When I wrote this chapter, television was still analog and consumer recording and archiving was based on VCR tape players, but, as an MIT-based designer, I expected the increase in transmission, storage, and processing predicted by Moore's law to make possible the transition we have now witnessed. By the first decade of the new century, DVDs had achieved widespread adoption (*Titanic* sold one million in 1999) and fans were demanding more TV-series DVDs; game consoles starting with PlayStation2 (1999) were incorporating DVD players; digital video recorders (DVRs) were displacing tape (TiVO was introduced 1999); increased bandwidth supported video delivery over the internet (YouTube, 2005); and fan participation, sometimes called "social TV," was an industry norm (Twitter 2006). The TV set itself has been changing, modified to accommodate the transition to digital transmission (2006–09), with plasma and LCD screens and digital protectors for high-definition imaging. The once-standard platform of a TV set connected to a cable box or satellite receiver is being increasingly supplanted by or merged with other devices such as game consoles, tablets, and computers. The broadcast and cable networks now have competition as the originators and distributors of television series from web-based companies like Netflix, Amazon, and YouTube, as well as from independent aggregators and producers of web series.

Although we cannot predict which platform will win the competition for the living room appliance, or who will make the most money from industry disruptions in the short term, we can continue to predict the long-term trends for expressive storytelling. The stages of development for interactivity in TV storytelling described in this chapter are still useful to think about:

1. *Sequential Engagement*: Viewers watch the TV show, then interact in another framework like the web, social media, or through "transmedia" games set in the same storyworld.

This was the first response to the increasing availability of digital affordances led by fans in the form of episode lists and fan discussion sites (like reddit.com) and wikis (like Lostopedia.com). Series-specific websites and social media feeds of various kinds are now the marketing norm for television networks, with some including additional web content, such as blogs written by fictional characters

(like http://www.piedpiper.com/blog/ for the HBO series *Silicon Valley*) or short webisodes to promote interest and deepen backstory (like these that ran in October 2011 just before the Season 2 premiere of *The Walking Dead*: http://walkingdead.wikia.com/wiki/The_Walking_Dead_(Webisodes)). Telltale Games also had a significant success with *The Walking Dead* tablet game (2012), which was story-driven and paced like the comic-book and TV-show source material, while allowing the viewers to move through the same zombie-occupied Georgia and to experience dangers and moral conflicts similar to those of the familiar fictional characters. Less successful "transmedia" games for other series ran into problems, like the much-criticized "Lost: Via Domus" (2008), which did not make clear the relationship of the gameplay to the canonical television story, and introduced awkward animated game characters who resembled the original actors but lacked the charisma, the well-written dialogue, and the actual voices behind the familiar TV performances. There is a discomfort similar to the "uncanny valley" problem in animation when viewers are confronted with inconsistent versions of the fictional universe.

Viewers are drawn to interactive environments in order to immerse themselves in the familiar fictional storyworld, and so it is important to construct the interactions to take advantage of story-specific expectations that will motivate gameplay that produces the satisfying experiences of dramatic agency and reinforce belief in the fictional framework. This usually means very sparing introduction of the actual main characters, but very rich detailing of the shared fictional spaces and parallel dramatic situations.

2. *Simultaneous Second Screen Engagement*: The viewer watches a conventional TV show while interacting in some way on a second screen or in a separate area of streaming-video computer application.

This is a growing format for viewer engagement and a very active area for design innovation. Television shows now routinely offer banners leading to social media frameworks (such as hashtags in Twitter) for convening an audience around the show. This practice is common enough to have led to discomfort at "spoilers." Producers are also providing pushed content within tablet and smartphone apps that encourages viewership to "enhance" the viewing experience. The second-screen content is often haphazard and distracting, however, and sometimes undermines immersion by referring to the actors' biographies or arbitrarily selected production details. Better uses of the second screen underscore the dramatic effect of important scenes by providing evocative screen shots and dialogue quotes, or by reminding viewers of related plot events in previous episodes with brief clips. The 2014 debut season of AMC's *Halt and Catch Fire*,

a dramatic series set in the 1980s personal-computer industry, made particularly good use of closely synchronized content to reprise key scenes and to provide highly relevant historical context on period details like the text-based adventure game Zork (discussed in Chapter 3), which is used as the basis of a hiring/firing decision in one episode.

As television shows become more dense with multiple plots and larger casts of characters, second-screen aids are becoming more desirable. The design of second-screen applications to support these increasingly complex storyworlds has been a focus of my own eTV research group, and has resulted in a number of prototypes.

Industry experiments have found that viewers value synchronized content, but they are stymied by the fact that they need to download different apps for each program, so most find it not worth the trouble. There are several efforts currently under way in Europe as well as the US to standardize a single platform for simultaneous content transmission. When that happens, I would expect to see a surge in applications, and perhaps some standardization of features as well.

3. *Unified Environment for Watching and Interacting*: This still-speculative stage of narrative evolution would require the production of an entirely new genre of interactive entertainment that would combine episodic content and sustained interactivity. This is an area that is very ripe for design innovation as digital convergence platforms become more stable and the boundaries between television and video games become more fluid in the minds of producers and viewers.

HBO GO is a current example of a robust computer-based streaming platform that includes interactive content similar to second-screen synchronized apps over the web. The HBO show *Game of Thrones*, for example, is presented with a stream of accompaniments that identify some of the characters and provide production notes on topics like how a sword was manufactured that are visually appealing but do not help a viewer to figure out what is going on in this exceptionally dense storyworld.

A more appropriate use of simultaneous information in close proximity to the primary video viewing area was an experimental interface for the original *CSI* series created by the much-honored designer Dale Herigstad on an early Microsoft interactive TV platform. Herigstad provided close-ups of the forensic materials in the episode and maps tracing the location of the characters, all of it very closely synchronized to the dramatic action (Curran 2003). Herigstad also led a group as part of the pioneering AFI Digital Content Lab that created a prototype that allowed viewers with a game console to fight a battle synchronized

with a battle scene in an episode of *Battlestar Galactica*. Much of his design work has been an attempt to open up the z-axis as an informational depth, including 3-D approaches that work with gestures, similar to the interface in the film *Minority Report* (2002), which he collaborated on.

My own eTV Lab at Georgia Tech worked with the AFI Digital Content Lab and the Cartoon Network on a prototype for attaching a sync game to a broadband episode of the children's show *Ben 10*. The game asked viewers to click on and capture magical items from the broadband video stream. We took this approach rather than the more common trivia-game approach (then the industry standard, and still all too common) in order to focus attention within the fictional world. We also explored how a similar framework of simple interaction—clicking on an intriguing item in a scene, like a leading character's tattoo in *Lost*—might lead to deeper backstory revelations.

4. *Some other promising interactive storytelling ideas identified in this chapter that remain unexplored*:

- Simultaneous actions presented as exclusive choices, such as deciding which character's point of view to follow or where to navigate in a simulated space. Mitchell Horwitz, the creator of *Arrested Development*, explored this possibility as an affordance of the simultaneous release of all episodes when the series moved from conventional television to Netflix, as I discuss in this blogpost.
- Multiple broadcasts of a multiform story with viewer input determining the various ways the same scenario might play out, based on a predetermined but highly variable set of alternatives. A Finnish television show, *Accidental Lovers*, explored this possibility, allowing viewers to determine how a relationship between two artists, an older woman and a younger man, might develop through mobile messages to the show.
- Hidden channels of information in a scene, like text messages, letters on a desk, or unspoken thoughts that can be accessed on separate devices or with special codes. This is a common game mechanic, used, for example, in mystery-story games like Gone Home and in alternate reality games, but not, as yet, in interactive television.
- Situating the viewer as a virtual neighbor of the main characters in an episodic TV series, with unique experiences and role-playing opportunities. The interactive world would share some events with the scripted episodic story, and the viewer-interactors in their character roles could react to and collectively affect events in the canonical series. Transmedia games are beginning to explore the design components of such a shared fictional

storyworld. For example, Telltale's Game of Thrones: Fire from Ice (2014) platform game takes place in distinct but partially overlapping spaces from the canonical series, and invokes events that have already been shown in the serialized HBO drama. The experience works best when simultaneous events from the series are heard about through third parties, but it falls into the "uncanny valley" when the registers of representation conflict with the iconic TV series characters appearing as awkward cartoon versions within the game.

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