From Narrative Games to Playable Stories

Toward a Poetics of Interactive Narrative

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The genres of digital narrative are, if not innumerable like the genres of narratives, at least very varied. They include stories generated by artificial intelligence (AI) systems, which have yet to produce narratives that people would want to read for the sake of entertainment; human-generated stories, such as the news, gossips, or autobiographical sketches that circulate constantly through the Internet; and interactive narratives produced through a collaboration between the machine and the user—or, to be more precise, through a manipulation by the machine of human-produced data in response to the user's input. In this article I focus on the third kind, more particularly on the design problem of integrating the user's activity into a framework that fulfills the basic condition of narrativity: a sequence of events involving thinking individuals, linked by causal relations, motivated by a conflict, and aiming at its resolution.

Whether or not interactive narratives practically exist or are still chimeras depends on what is expected of the user's participation: the more active and the less constrained the user's role—in other words, the more lifelike, though life is not free of constraints—the more problematic its integration into a well-formed narrative arc. For intensity of user participation, freedom of choice, and depth of immersion, nothing can beat the imaginary Holodeck of the TV series *Star Trek*, which Janet Murray, in her 1997 classic *Hamlet on the Holodeck*, proposes as the model of the new kind of narrative experience that digital technology will make possible. The Holodeck is a computer-generated, three-dimensional simulation of a fictional world. The user is invited to step into this world, to impersonate a character, and to interact through language and gestures with synthetic (i.e., computer-created) agents. No matter what the user says or does, the synthetic agents respond coherently and integrate the user's input into a narrative arc that sustains interest. The Holodeck may be the Holy Grail of New Media, but it is also, as Brenda Laurel calls interactive narrative, "an elusive unicorn we can imagine but have yet to capture" (2001: 72). It would take an artificial intelligence far beyond the capabilities of existing systems to be able to process whatever the user decides to do or say, and a creativity far beyond the imagination of the best novelists and playwrights to be able to integrate this input into a well-formed plot. (Imagine Shakespeare having to write *Hamlet* without being in control of all the characters!)

At the other end of the spectrum of ease of implementation is hypertext fiction, a genre that limits the user's agency to selecting an item from a menu of possible choices. What hypertext gains in actual feasibility over the Holodeck, thanks to the simplicity of its algorithm, it loses in ability to create narrative meaning and immersion in a fictional world: narrative is a linear, causal sequence of events whose significance depends on their position on a temporal axis, while hypertext is a network of textual fragments that can be read in many different orders. Unless the user's choices are severely restricted, it is highly unlikely that they will produce a sequence that respects narrative logic. This is not to say that it is impossible for hypertext to tell stories; but if readers are to construct a causal sequence of events out of fragments presented in a variable order, they will have to do so by mentally rearranging the frag-

ments into other configurations than the order in which they were initially presented on the screen.

The purpose of this article is to explore forms of interactive narrative that offer a compromise between the unrealistic demands made on AI by the Holodeck and the very programmable but narratively challenged and interactively limited algorithm of hypertext fiction. In these moderately interactive forms, the user manipulates one or more characters in the fictional world and affects this world from within, rather than manipulating fragments of text from a metatextual perspective. My overall purpose is manifold: to provide reference points and a vocabulary for narratologists interested in the analysis of interactive narrative, to identify the problems that face the designers of interactive narrative, and to survey some of the most viable solutions to what has become known in the field as "the interactive paradox": the integration of the unpredictable, bottom-up input of the user into a sequence of events that fulfills the conditions of narrativity—conditions that presuppose a top-down design. As Aylett and Louchart formulate the paradox (2004: 25): "On one hand the author seeks control over the direction of a narrative in order to give it a satisfactory structure. On the other hand a participating user demands the autonomy to act and react without explicit authorial constraint."

Narrative Games and Playable Stories

While narrativity is a type of meaning, interactivity, when put in the service of entertainment, is a type of play. The combination of narrativity and interactivity oscillates between two forms: the *narrative game*, in which narrative meaning is subordinated to the player's actions, and the *playable story*, in which the player's actions are subordinated to narrative meaning.[1] Or, to put it differently, in a narrative game, story is meant to enhance gameplay, while in a playable story, gameplay is meant to produce a story. The concepts of narrative game and playable story reflect, in their opposition, the distinction made by the French sociologist Roger Caillois between two types of game: *ludus* and *paidia* (1958/2001: 13). The best example of paidia games is building imaginary scenarios with toys, using them, in the words of Kendall Walton (1990: 21–24), as

"props in a game of make-believe." These games do not aim at a specific goal, and they do not lead to losing or winning. The pleasures of paidia reside in the free play of the imagination, in adopting foreign identities, in forming social relations, in building objects, in exploring an environment, and above all in creating a representation: paidia games are fundamentally mimetic activities. If there are rules, they are spontaneously created by the participants, as when a group of children decides that a certain tree will be the house of the wolf, and they can be renegotiated on the fly. Ludus games, by contrast, are strictly controlled by pre-existing rules accepted by the participants as part of a basic game contract, they lead to clearly defined states of winning or losing, and their pleasure resides in the thrill of competition and in the satisfaction of solving problems.

What I call a narrative game is a ludus activity. If there is one contribution that digital technology has made to the design of games, it is their narrativization. By this term I mean the transformation of what used to be abstract playfields (such a chess boards and football fields) into concrete fictional worlds populated by recognizable objects and individuated characters. The main difference between an abstract game like soccer or chess and a narrativized video game like *Half-Life*, *Max Payne*, or *Grand Theft Auto* is that in an abstract game the goals of players are only made desirable by the rules of the game (who would, in real life, be interested in kicking a ball into a net, or in moving tokens on a board?), while in a narrativized game the player pursues the kind of goals that people may form in everyday life or in their fantasies: goals such as saving the world from invaders and rescuing people in danger, if you want to be a good guy, or stealing cars and killing people, if you prefer villainous roles. But in the intensity of the action, players may forget whether they are terrorists or counter-terrorists, space aliens or defenders of the earth: in a narrative game, the player plays to win, to beat the game, and story is mostly a lure into the game world.

While ludus inspires narrative games, the spirit of paidia infuses playable stories. In a playable story there is no winning or losing: the purpose of the player is not to beat the game, but to observe the evolution of the storyworld. Playable stories induce a much more aesthetic pleasure than narrative games because the player is not narrowly fo-

cused on goals. For me the essence of the playable story is captured by what I once heard a little girl say about the game *The Sims*: "Guess what I managed to do with my Sims? I made the father and mother drown in the pool, and now the kids are alone in the house and they can do whatever they want." For this little girl, the pleasure of the game did not come from reaching a state defined by rules, but in coaxing a good story out of the system. The genres of playable stories include table-top role-playing games (also known as Dungeons and Dragons), stories based on decision trees, hypertext fiction, simulation games (like *The Sims*), and interactive drama, a digital genre best described as an attempt to implement the formula of the Holodeck. At the time of this writing, the only working example of interactive drama is *Façade* (2005) by Michael Mateas and Andrew Stern.

The Poetics of Interactivity

The Holodeck, as a whole, may be a castle in the air, but this does not take anything away from the validity of its individual features as goals to pursue for researchers and developers of interactive narrative. In this section I propose to use three of these features as a point of departure for a poetics of interactive narrativity, measuring them against the devices, interfaces, and design philosophies of actually implemented forms of narrative games and playable stories.

NATURAL INTERFACE

Visitors to the Holodeck interact with the computer-generated world in exactly the same way people interact with the real world: through language and through the gestures of the body. This double means of interaction is essential to both social life and to its narrative representation (or its computer simulation). Our relations to our physical environment consist mainly of corporeal actions, while our direct relations to other human beings are based on semiotic transactions, though we can also affect other people indirectly by performing physical actions that will please or displease them. While narrative involves both kinds of action, the interpersonal, language-based kind is the glue that ties together the physical actions. A car chase by itself may be visually stunning,

but it only becomes narratively meaningful if the chaser and the chasee have reasons to behave the way they do, and these reasons can only be established through some prior acts of verbal communication, such as promising, threatening, concluding an alliance, or informing somebody of somebody else's plans. Narrative genres may differ from each other in the prominence they give to physical action and in the complexity of the interpersonal relations that motivate these actions, but extremely rare are the stories that focus entirely on problem solving through physical actions. (*Robinson Crusoe* may be an exception, until the hero meets Man Friday.) To rival the narrative richness of other media, then, a system of interactive storytelling must be able to stage both physical actions that change the fictional world and verbal acts that affect the minds of its inhabitants and motivate them to take action.

Both natural language comprehension and whole-body interfaces have been used in new media art and entertainment, but with limited narrative efficiency. Interaction through natural language gives the user a life-like freedom of expression, but there is no guarantee that the system will understand the input and respond in a logically (and narratively) coherent way, as the very limited success of computers in passing the Turing test demonstrates.[2] Natural language parsing has been used in the interactive drama *Façade*, but it is only because the user plays the role of a relatively disempowered witness in a domestic fight between the synthetic characters that she can accept the system's frequent inability to understand what she is trying to say: inconsistencies can be attributed to the uncooperativeness inherent to a quarrel and to the self-centered nature of the synthetic characters. Another form of digital narrative that uses a natural language interface is interactive fiction (IF), a purely text-based genre defined by Nick Montfort as "a program that simulates a world, understands natural language from an interactor, and provides a textual reply based on events in this world" (2004: 316). In contrast to *Façade*, which allows the user to type whatever she wants but most of the time fails to respond adequately, the IF parser sacrifices the naturalness of language by putting severe limitations on the player's use of syntax and vocabulary: most of the acceptable inputs are two-word sentences (like "take knife"), and the parser openly rejects any input that cannot be processed. This means that the player must

learn the idiom of the system as a code within a code—almost like a second language. The most extreme limitation in the use of language occurs in menu-based communication. Many computer games (for instance, *Morrowind*) allow the player to dialogue with the characters by selecting an item from a listed of canned utterances. Here the user does not have to learn a specialized idiom, and the system is able to respond coherently to any choice, but the price to pay is a loss of fluidity, since narrative time must stop until a choice is made. The menu also clutters up the screen with an extra window that takes a toll on the player's immersion in the fictional world.

Whole-body participation, the other distinctive feature of Holodeck interaction, is frequent in digital installation art and in sports games, such as bowling or tennis simulations, or in dancing games. These systems track the motions of the user's body and use this data in a variety of ways: art installations may project an image of the body in a computer-generated display, so that the users can see themselves in the virtual world, while sports games calculate and display the result of the player's actions. But sports games and most digital art installations are limited to a physical interaction with the world, and they do not present the interpersonal relations that impart narrativity to a designed experience. The alternative to full-body interaction is the manipulation of a control pad or the keyboard. In contrast to a full-body interface, this mode of interaction rests on a non-iconic, arbitrary relation between the gestures of the body in the real world and the events triggered by these gestures in the fictional world. The range of actions that can be performed by manipulating controls without interrupting the unfolding of the events is again limited to physical action, such as moving the player's virtual body, picking up objects, and firing weapons. None of these actions involves interpersonal relations, not even when players kill enemies in video games: even though these enemies may take the appearance of human beings, from the player's point of view they are mere bodies that need to be eliminated. It is only by resorting to a menu based on language that the repertoire of actions available to players can affect other characters. In *The Sims*, for instance, menus allow players to choose among actions such as "appreciate," "irritate," "dance with," "play," "hug," "kiss," and "talk to," all of which take a human being as

patient. The choice of action affects the emotional relations between the two characters by making the barometer of their mutual affection rise or drop.

In both the cases of verbal and corporeal action, then, interactive story systems have to choose between reasonably natural but narratively limited modes of action and artificial interfaces that suspend game and narrative time but that allow much richer interpersonal relations.

INTEGRATION OF USER ACTION WITHIN THE STORY

Just as in real life all of our actions contribute to our life story, in the Holodeck all of the actions of the visitor move the plot forward. This degree of integration is almost automatic in a menu-driven system like *The Sims*, since the player's selection counts as the performance in the fictional world of the action described by words on the menu. The creation of a narrative out of the user's choices is facilitated by the nature of the options: all the items on the menu involve interpersonal relations, and the succession of choices writes the life story of the Sims family. In a system with a natural-language understanding system, the degree of integration depends on the efficiency of the parser: it was my feeling while playing *Façade* that much of what I typed was not part of the dialogue, and consequently of the drama, because the characters simply ignored my input. But how can a story be created when the user's possibilities of action are limited to moving, picking up objects, manipulating them, and solving riddles through this manipulation, as is the case in shooter and adventure games? The most obvious way to handle this problem is to choose a type of plot that puts great emphasis on physical actions. This explains why the archetypal narrative pattern described by Vladimir Propp (1968) and Joseph Campbell (1968/1973) has been so popular in computer games: a hero receives a mission, fulfills it by performing various tasks, and gets rewarded in the end. The deeds of the hero are relatively easy to simulate through the game controls, the basic sequence of accomplishment-reward can be repeated endlessly, allowing the player to reach higher and higher levels in the game, the script lends itself to great variations in setting and in the nature of the tasks, and the solitary nature of the hero's quest makes interpersonal relations dispensable. Even when the player needs the assistance of system-cre-

ated characters or of other players to perform the tasks (as happens in multi-players online games, such as *EverQuest* and *World of Warcraft*), he advances in the game on his own, and other characters are usually reduced to the fixed roles of either antagonists or helpers.

More intricate plots and backstories can be created through the use of film clips (known in game jargon as cut scenes), but usually at the cost of the integration of the user's actions within the narrative. In the worst of cases, the story only moves forward in those moments when control is taken away from the player, and the player's actions are nothing more than means to unlock the next episode by solving problems gratuitously thrown along the way to give him something to do. In *Myst*, for instance, the player needs to pull levers, turn dials, find keys, and guess secret codes to be admitted to the next space, where she will find another page of the book that tells the past story of the fictional world. The game designer Chris Crawford calls this situation a "constipated story" (2004: 130), and the game critic Steven Poole wittily describes it as follows: "It is as if you were reading a novel and being forced by some jocund imp at the end of each chapter to go and win a game of table tennis before being allowed to get back to the story" (2000: 109).

DYNAMIC CREATION OF THE STORY

In the Holodeck narrative machine, every action of the visitor affects the life of his fictional persona, and every different choice leads to different stories. It would be impossible to store in advance all the consequences of all the decisions that can be made by the player. The only way for the system to deal efficiently with the visitor's freedom of action is therefore to compute the effects of her actions in real time, amending its model of the fictional world, and responding to the player on the basis of this updated model. This dynamic process is known as a simulation, and it imparts to its output a quality of emergence.

Existing forms of interactive narrative can be broadly divided into bottom-up, emergent systems that create stories during the run of the program, as does the Holodeck, and top-down systems that rely on prescripted content. The former can be played many times, with different results, while the latter are meant for a single traversal, since the story does not renew itself.

The bottom-up approach is illustrated by *The Sims*. The program creates a world full of things and characters. Each of these objects is linked to a set of possible behaviors, listed on a menu that comes to the screen when the user decides to play with this particular object. When a behavior is selected, it brings another state of the fictional world, and another set of behaviors becomes available. As the world passes from one state to another, a story is created. In this kind of system the choices offered to the player are too numerous and the interactions of the various objects too complex for the designer to anticipate all the possible developments. Bottom-up narrative design is a little bit like the TV show *Survivor*: you throw a number of characters with well-defined personality features together in a space, and you wait to see what kind of story will come out of their interactions. If there is a drawback to bottom-up systems, it is the lack of closure of their output: without top-down authorial control, it is virtually impossible to create an Aristotelian curve of rise and fall in tension, or a sequence of events that stops after a conflict has been resolved. But closure is not indispensable to narrative pleasure: throughout literary history, from the never-ending Renaissance narrative of *Orlando Furioso* to the feuilleton novels of Dickens, Trollope, or Eugene Sue in the nineteenth century and to the modern TV soap operas, readers have time and again been fascinated by narratives that go on and on, like life itself.

While the bottom-up approach is favored by playable stories, the top-down approach is typical of narrative games, such as shooters and adventure games. In this approach there is no event generation on the fly. The player's progression is a journey along a path that is already traced and that leads to a fixed destination, or to several destinations when the system offers branching points. There are two ways to create top-down interactive narrativity. The most common is to start from a set of problems to solve, actions to take, weapons to use, effects to create—in short, starting from the design of gameplay—and to wrap this game-play into a story. This is how, for instance, the game *Prince of Persia* was created (Mechner 2007). The other method consists of starting from a specific storyworld and inserting possibilities of user action to make it interactive. We see this approach in games based on *Harry Potter, The Matrix, Lord of the Rings*, or *Alice in Wonderland*. But because the plot

of these games must be adapted to the possibilities of action offered by game controls, it is usually fairly different from its literary or cinematic source. Many of the games based on a pre-existing story tend to become stereotyped shooters and quests, with weak integration of the player's actions into the storyline. These games attract players much more for the spatial and visual pleasure of finding themselves in a familiar fictional world and of encountering favorite characters than for the temporal pleasure of enacting a specific sequence of events. In this kind of design, storyworld takes precedence over story.

The top-down and the bottom-up approaches are not mutually exclusive: scripted elements can be used in bottom-up systems to give proper narrative form to the output, while top-down systems, as already noted, would not be interactive if they did not find a way to integrate the bottom-up input of the user in their narrative arc. *The Sims*, for instance, sparks interest by occasionally taking control away from the player in order to stage pre-scripted scenarios that create unexpected turns of events (such as a male character being kidnapped by space aliens and returning pregnant), while *Façade*, a basically top-down design in which the system-created characters take command of the plot and bring it toward closure, manages nevertheless to make the dialogue vary with every performance thanks to the player's active participation. Any future solution to the paradox of interactive narrativity will lie in a novel combination of top-down and bottom-up design.

The Pleasures of Interactive Narrative

What kind of reward can we expect from active participation in a story? Narrative pleasure can be generally described in terms of immersion in a fictional world, though some kinds of pleasure lie in distanciation. But a distinction should be made between ludic and narrative immersion. Ludic immersion is a deep absorption in the performance of a task, comparable to the intensity with which a mathematician concentrates on proving a theorem, or a soloist performs a concerto. This experience is independent of the mimetic content of the game: players can be deeply immersed in playing chess, go, football, or *Tetris*—all examples of abstract games—as well as in *Second Life, Doom*, or *Cops and*

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Robbers, all games with narrative content. Whereas ludic immersion presupposes a physically active participant, narrative immersion is an engagement of the imagination in the construction and contemplation of a storyworld that relies on purely mental activity. Elsewhere (Ryan 2001) I described three kinds of narrative immersion that relate to different facets of the storyworld: spatial, temporal, and emotional. To these three forms I now would like to add epistemic immersion.[3] These four types of immersion present variable degrees of compatibility with the physically active stance of ludic immersion.

SPATIAL IMMERSION

Thanks to the visual and animation resources of digital media, spatial immersion is the easiest to achieve in an interactive environment. The ability of digital systems to adapt the display to the position of the player's virtual body makes them very efficient at simulating movement as an embodied experience. Whereas hypertext navigation consist of instantaneous jumps from one node to another that deny the existence of space, the graphic engine of three-dimensional video games and online worlds creates a smooth evolution of the landscape when the user's avatar travels from one point to another. Add to this kinetic experience the visual power of computer graphics, which can make landscapes so beautiful that the exploration of the fictional world becomes an end in itself. The spatial affordances of the medium are most efficiently exploited in epic narratives—stories about the travels of a lonesome hero through a landscape full of dangers—as opposed to dramatic narratives that focus on human relations. This adds another explanation (besides the adaptability to game controls mentioned earlier) for the predominance of the quest pattern in video games. But spatial immersion is not only a matter of experiencing space through movement; it can also consist of an emotional attachment to a certain location. This feeling, which is known to geographers and phenomenologists as "sense of place," is also very compatible with interactivity. Visitors to online virtual worlds spend lots of time building themselves a personal retreat, a nest lovingly decorated with customized objects made with the tools of the system or bought from other players. While this phenomenon is not strictly narrative, it echoes the importance of the setting for readers of novels: many people

select narratives on the basis of where the action takes place, and according to the cognitive psychologists Mandler and Johnson (1977), setting is the most easily remembered narrative component.

EPISTEMIC IMMERSION

The prototypical manifestation of epistemic immersion—the desire to know—is the mystery story. This effect is relatively easy to achieve in an interactive environment. The player impersonates the detective and investigates the case through the standard repertory of computer game actions: moving the avatar through the game world, picking up telltale objects, and extracting information from system-created characters through menu-driven dialogues. In this design, as Henry Jenkins (2004) observes, the fixed and therefore non-interactive narrative of the past is embedded in an interactive game world, in which the player enacts the narrative of the investigation.

TEMPORAL IMMERSION

Next on the scale of compatibility with interactivity comes temporal immersion, which, as Meir Sternberg (1992) has shown, includes three narrative effects: curiosity, surprise, and suspense. The first two are relatively unproblematic. When participation takes the form of spatial exploration and leads to unexpected discoveries, its motivation is curiosity, and its reward is surprise. A bottom-up system like *The Sims* can create surprise by taking control away from the user and generating pre-scripted events, such as the abduction scenario described above. Suspense is much more resistant to interactivity, because it requires long-range planning by the system and top-down management of the player's expectations. Like epistemic immersion, suspense is created by an intense desire to know, but while epistemic immersion concerns events that already happened, suspense is focused on the future. People experience suspense when they can foresee two or more possible developments and are dying to find out which one of these paths the story will actualize. But when players can determine the path through their choice of action, the uncertainty is lost. And if the system generates an accidental event to prevent the player from fully controlling the outcome of the events, the effect will be surprise rather than suspense.

The combination of emotional immersion with interactivity is the most problematic of all because it involves interpersonal relations between the player and computer-operated characters. In real life we experience two main types of emotions: those directed toward ourselves, and those directed toward other creatures through a vicarious experience known as empathy. Self-directed emotions concern our desires and the success of the actions through which we try to fulfill them. Even when these emotions involve feelings toward others, such as love and jealousy, the other is an object in a bipolar relation determined by the desires of the experiencer. Not so with empathy: it is by mentally simulating the situation of others, by pretending to be them and imagining their desires as our own, that we feel joy, pity, or sadness for them.

Narrative has a unique power to generate emotions directed toward others. Aristotle paid tribute to this ability when he described the effect of tragedy as purification (*catharsis*) through feelings of terror and pity inspired by the fate of characters. By contrast, the emotions we experience while playing games—excitement, triumph, dejection, relief, frustration, relaxation, curiosity, and amusement (Lazzaro n.d.)—are overwhelmingly self-directed ones, because they reflect our success and interest in playing the game. But their range is much smaller than the self-centered emotions of life: computer game players may fight to rescue a princess, and they may receive her hand in reward, but unlike the heroes of love stories, they are not motivated to act by romantic feelings. Whereas narrative interest regards characters as persons, ludic interest regards them as means to an end. Exceedingly rare are the computer-controlled characters who not only serve a functional role by helping or hindering players in the pursuit of their goals but also generate interest and empathy through their own personality. Michael Nitsche mentions a game situation that involves both emotional involvement and a sense of guilt in the player. At some point in *Deus Ex* players must kill a formerly friendly game-controlled character who has turned into a zombie in order to progress in their goal, but some players develop such attachment to this character that they experience extreme discomfort at treating her like an object that needs to be eliminated.

While narrative games deliberately sacrifice characters to action, playable stories have been able to create characters sufficiently lifelike to generate emotional reactions only by limiting the player's participation and hindering self-centered feelings. A case in point is *Façade*. The interactor experiences intense feelings of dislike and contempt for Grace and Tripp, a professionally and socially successful couple whose seemingly perfect marriage turns out during the dialogue to be a mere façade that hides a deeply fractured personal relation. While the user's agency allows variations in the dialogue that expose diverse facets of Grace and Tripp's personalities, the drama unfolds according to a relatively fixed script imposed top-down by the system. The interactor may hate or despise Grace and Tripp, but unlike the player of a competitive game or a participant in an online world, she does not entertain strong feelings for her avatar, such as caring for her character's personal relationship to Grace and Tripp. I certainly did not experience sadness over a lost friendship when the couple expelled me from their apartment at the end of the evening to sort out their problems between themselves.

Conclusion

With the epic quest structure of most video games, interactive media have mastered what could be the oldest form of narrative (or at least the oldest form of fictional narrative, for gossip must be older): the struggle of the individual against a hostile world. With the networked structure of hypertext, its fragmentation into recombinant units, and its rejection of the linearity inherent to chronology and causality, interactivity has made a contribution to the postmodern deconstruction of narrative, much more than to the construction of a postmodern narrative. What remains to be conquered is the dramatic narrative, the type of plot that knots together several destinies into a dynamic network of human relations and then disentangles them to let characters go their own way. Some steps in this direction have been taken with games interspersed with filmic clips, with dialogue systems (*Façade*), and with simulation algorithms (*The Sims*), but in all of these approaches, the involvement of the player remains peripheral: with film clips he relinquishes agency while the plot is being knotted; with existing dialogue

systems he participates in a conversation rather than in a plot, or if there is a plot, he is confined to an observer role; with a simulation he holds the strings of the characters like a puppet master, without personally playing a role in the story. The greatest hurdle to overcome, if interactive narrative is to combine the self-centered emotions that come from our active engagement in life and games with the other-centered emotions of traditional narrative, is the creation of personal and evolving relations between the user's character and the synthetic agents, relations that allow the user not only to interact verbally with these agents but also to influence their destiny and to feel personally concerned both for herself and for others.

If interactive narrative is a mountain to climb, we have gone a long way toward the top in the past thirty years. Yet the hardest part of the climb is yet to come, because the mountain is a pointed cone, like Mount Hood, and not a rounded dome like Mount Rainier. But steep mountains have notoriously been an incentive to alpinists: as Chris Crawford declares, "To dismiss interactive storytelling on the grounds that it hasn't been done before is to reject the entire basis of the human intellectual adventure" (2004: 50).

Notes

1. I adapt the term *playable stories* from Noah Wardrip-Fruin's concept of "playable media" (2007).

2. A computer passes the Turing test (devised by British mathematician Alan Turing) when a human judge interacting verbally with both a computer and a human cannot tell who is who. Success in the Turing test is measured in terms of how long it takes for the judge to make the correct identification; so far no system has lasted as long as five minutes—the conditions needed to receive the Loebner Prize in artificial intelligence.

3. To these four types of immersion one may add social immersion, an experience exclusive to multiplayer online worlds. In these worlds players can perform the quests presented by the game only by forming alliances and sharing resources with other players. These alliances, known as guilds, lead to a strong sense of belonging to a virtual community.

Works Cited

Aylett, Ruth, and Sandy Louchart (2004). "The Emergent Narrative: Theoretical Investigation." Proceedings of the Narrative and Interactive Learning Environments Conference, NILE04, Edinburgh, Scotland. 25–33.

Caillois, Roger (1958/2001). *Man, Play and Games*. Urbana: U of Illinois P.

Campbell, Joseph (1968/1973). *The Hero with a Thousand Faces*. 2nd ed. Princeton: Princeton UP.

Crawford, Chris (2004). *Chris Crawford on Interactive Storytelling*. Berkeley, CA: New Riders.

Jenkins, Henry (2004). "Game Design as Narrative Architecture." *First Person: New Media as Story, Performance, and Game*. Ed. Noah Wardrip-Fruin and Pat Harrigan. Cambridge, MA: MIT P. 118–30.

Laurel, Brenda (2001). *Utopian Entrepreneur*. Cambridge, MA: MIT P.

Lazzaro, Nicole (n.d.). "Why We Play Games: Four Keys to More Emotions without Story." www.xeodesign.com/xeodesign_whyweplaygames.pdf.

Mandler, Jean, and Nancy Johnson (1977). "Remembrance of Things Parsed: Story Structure and Recall." *Cognitive Psychology* 9: 111–51.

Mateas, Michael, and Andrew Stern (2005). *Façade*. Interactive CD ROM. Download at http://www.interactivestory.net/download/.

Mechner, Jordan (2007). "The Sands of Time: Crafting a Video Game Story." *Second Person: Role-Playing and Story in Games and Playable Media*. Ed. Pat Harrigan and Noah Wardrip-Fruin. Cambridge, MA: MIT P. 111–20.

Montfort, Nick (2004). "Interactive Fiction as 'Story,' 'Game,' 'Storygame,' 'Novel,' 'World,' 'Literature,' 'Puzzle,' 'Problem,' 'Riddle,' and 'Machine.'" *First Person: New Media as Story, Performance, and Game*. Ed. Pat Harrigan and Noah Wardrip-Fruin. Cambridge, MA: MIT P. 310–17.

Murray, Janet (1997). *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*. New York: Free P.

Nitsche, Michael (2008). *Video Game Space*. Cambridge, MA: MIT P.

Poole, Steven (2000). *Trigger Happy: The Inner Life of Video Games*. New York: Arcade.

Propp, Vladimir (1968). *Morphology of the Folk Tale*. Trans. Laurence Scott. 2nd ed. Ed. Louis A. Wagner. Austin: U of Texas P.

Ryan, Marie-Laure (2001). *Narrative as Virtual Reality: Immersion and Interactivity in Literature and Electronic Media*. Baltimore: Johns Hopkins UP.

Sternberg, Meir (1992). "Telling in Time (II): Chronology, Teleology, Narrativity." *Poetics Today* 13: 463–541.

Walton, Kendall (1990). *Mimesis as Make-Believe: On the Foundations of the Representational Arts*. Cambridge, MA: Harvard UP.

Wardrip-Fruin, Noah (2007). "Playable Media and Textual Instruments." *The Aesthetics of Net Literature: Writing, Reading and Playing in Programmable Media*. Ed. Peter Gendolla and Jörgen Schäfer. Bielefeld: Transcript Verlag. 211–80.