FirstPerson

New Media as
Story, Performance, and Game

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Game Theories

In his 1974 *Computer Lib/Dream Machines*, Ted Nelson argued that human-computer interaction design was more properly viewed as a analogue of moviemaking than of engineering. A year later, the first personal computer kit became available for purchase, and it was not long before computers conceived of as entertainment devices — rather than as work tools — began appearing in U.S. homes and local arcades.

Now, like moviemaking before it, computer-based entertainment — even the oft-maligned computer game — is beginning to receive scholarly attention and to be viewed as something other than a public nuisance. At the same time, computer games are themselves in a period of considerable development and redefinition. Identifiable genres (first-person shooters, god-games, massively multiplayer online role-playing games [MMORPGs]) are emerging and entering the public awareness; the channels of game interaction (PCs, consoles, handhelds, cell phones, PDAs) are multiplying; and as new artistic and marketing methods arise and the first generations of computer gamers come of age, games are reaching and being developed for an ever-broadening demographic.

Although the four authors presented here emerge from different backgrounds and are at home in different communities, all of their work is grounded in the specifics of actual games (rather than theories of games-in-the-abstract) and each author opens discussion with both scholars and game developers. Further, a point of focus for each essayist is the game/story question that runs through this volume.

MIT professor Henry Jenkins directly addresses the game/story formulation. Well-known for his work with comparative media studies, Jenkins describes a middle ground between narratologists and ludologists, while also focusing attention on the dynamics of space, which he believes neither camp fully appreciates. Jesper Juul, on the other hand, is identified with ludology. His topic here, the operation of time in games, is one that he has previously utilized to differentiate between games and narratives. This essay moves further than the basic distinction, beginning to lay the groundwork for a comprehensive understanding of game time. Celia Pearce, a familiar figure in the game development and location-based entertainment communities, furthers the argument for a native discipline of game theory, while also introducing six "operators" for understanding the role of narrative in games. These operators structure her analysis of the author/audience dynamics that emerge in game forms like MMORPGs and user-modifiable simulations. Finally, Eric Zimmerman, a game designer and theorist, takes to task four terms that unacceptably run amok in the new media field (not to mention this volume!): narrative, interactivity, play, and games. In disciplining these terms, he reformulates the game/story discussion as well, opening up new areas of investigation for those interested in progressive game design and game theory.

Reference

Nelson, Ted (1974). *Computer Lib / Dream Machines*. 1st edition: self-published, 1974. 2nd edition: Redmond, WA: Tempus Books/Microsoft Press, 1987.

Game Design as Narrative Architecture

Henry Jenkins

The relationship between games and story remains a divisive question among game fans, designers, and scholars alike. At a recent academic Games Studies conference, for example, a blood feud threatened to erupt between the self-proclaimed ludologists, who wanted to see the focus shift onto the mechanics of game play, and the narratologists, who were interested in studying games alongside other storytelling media.[1] Consider some recent statements made on this issue:

> Interactivity is almost the opposite of narrative; narrative flows under the direction of the author, while interactivity depends on the player for motive power. (Adams 1999)

> There is a direct, immediate conflict between the demands of a story and the demands of a game. Divergence from a story's path is likely to make for a less satisfying story; restricting a player's freedom of action is likely to make for a less satisfying game. (Costikyan 2000, 44–53)

> Computer games are not narratives.... Rather the narrative tends to be isolated from or even work against the computer-game-ness of the game. (Juul 1998)[2]

> Outside academic theory people are usually excellent at making distinctions between narrative, drama and games. If I throw a ball at you I don't expect you to drop it and wait until it starts telling stories. (Eskelinen 2001)

I find myself responding to this perspective with mixed feelings. On the one hand, I understand what these writers are arguing against — various attempts to map traditional narrative structures ("hypertext," "Interactive Cinema," "nonlinear narrative") onto games at the expense of an attention to their specificity as an emerging mode of entertainment. You say "narrative" to the average gamer and what they are apt to imagine is something on the order of a choose-your-own

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Response by Jon McKenzie

The model of creativity often associated with digital media is not that of originality and uniqueness but recombination and multiplicity, a model hardwired to the computer's uncanny ability to copy and combine images, sounds, texts, and other materials from an endless array of sources. Indeed, in different though related ways, both digital media and poststructuralist theory teach us that it is impossible to create and study the new without drawing at times on forms and processes taken from what is already around us. From this perspective, no genre, work, or field is unique and self-contained: each is a specific yet fuzzy combination of other things that are themselves diverse and nonunique. In short, what makes something "unique" is not so much its make-up but its "mix-up."

For practical, conceptual, and institutional reasons, any formation of a field of "ludology" may inevitably involve arguing for that field's uniqueness and originality, its clear-cut distinction from other fields: thus, "games are not narratives, not films, not plays, etc." Yet I'm willing to gamble that if a formal discipline of ludology ever does emerge, it will sooner or later discover what other disciplines have learned: discoveries are triggered by the oddest (and oldest) of sources.

As Henry Jenkins suggests, games are indeed not narratives, not films, not plays — but they're also not-not-narratives, not-not-films, not-not-plays. Games share traits with other forms of cultural production,

adventure book, a form noted for its lifelessness and mechanical exposition rather than enthralling entertainment, thematic sophistication, or character complexity. And game industry executives are perhaps justly skeptical that they have much to learn from the resolutely unpopular (and often overtly antipopular) aesthetics promoted by hypertext theorists. The application of film theory to games can seem heavy-handed and literal-minded, often failing to recognize the profound differences between the two media. Yet, at the same time, there is a tremendous amount that game designers and critics could learn through making meaningful comparisons with other storytelling media. One gets rid of narrative as a framework for thinking about games only at one's own risk. In this short piece, I hope to offer a middle-ground position between the ludologists and the narratologists, one that respects the particularity of this emerging medium — examining games less as stories than as spaces ripe with narrative possibility.

Let's start at some points where we might all agree:

1. Not all games tell stories. Games may be an abstract, expressive, and experiential form, closer to music or modern dance than to cinema. Some ballets (*The Nutcracker* for example) tell stories, but storytelling isn't

an intrinsic or defining feature of dance. Similarly, many of my own favorite games — *Tetris, Blix, Snood* — are simple graphic games that do not lend themselves very well to narrative exposition.[3] To understand such games, we need other terms and concepts beyond narrative, including interface design and expressive movement for starters. The last thing we want to do is to reign in the creative experimentation that needs to occur in the earlier years of a medium's development.

2. Many games *do* have narrative aspirations. Minimally, they want to tap the emotional residue of previous narrative experiences. Often, they depend on our familiarity with the roles and goals of genre entertainment to orient us to the action, and in many cases, game designers want to create a series of narrative experiences for the player. Given those narrative aspirations, it seems reasonable to suggest that some understanding of how games relate to narrative is necessary before we understand the aesthetics of game design or the nature of contemporary game culture.

3. Narrative analysis need not be prescriptive, even if some narratologists — Janet Murray is the most oft-cited example — do seem to be advocating for games to pursue particular narrative forms. There is not one

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although reducing them to any one of these comes at a certain cost. Jenkins rightly contends that game designers should therefore seek to expand the forms and processes from which to draw, rather than reduce them. He is also right to point out that some ludologists are themselves much too quick to reduce narrative to overly simplistic models (e.g., strictly linear structures). Most importantly, his exploration of spatially oriented narrative forms provides provocative approaches to contemporary game design. At the same time, however, Jenkins's stated goal to offer a "middle ground" between ludologists and narratologists remains slanted toward the narratological end of things. This is indicated in his essay's title, "Game Design as Narrative Architecture." A more playful

ludologist might have offered a response titled "Narrative Architecture as Game Design." Johan Huizinga, after all, analyzed law, war, poetry, and philosophy "as" play, and across diverse cultural traditions storytelling has complex agonistic dimensions.

Another middle ground for ludology might be "experience design," a notion and practice that runs in different ways from Brenda Laurel to Donald Norman to Eric Zimmerman. Experience design refers to the generation and shaping of actions, emotions, and thoughts. How one operates a kitchen appliance, takes in a sophisticated science exhibition, or becomes enmeshed in a role-playing game — or for that matter shops in a store, reads a novel, or visits a polling booth — all this

future of games. The goal should be to foster diversification of genres, aesthetics, and audiences, to open gamers to the broadest possible range of experiences. The past few years have been ones of enormous creative experimentation and innovation within the games industry, as might be represented by a list of some of the groundbreaking titles. *The Sims*, *Black and White*, *Majestic*, *Shenmue*; each represents profoundly different concepts of what makes for compelling game play. A discussion of the narrative potentials of games need not imply a privileging of storytelling over all the other possible things games can do, even if we might suggest that if game designers are going to tell stories, they should tell them well. In order to do that, game designers, who are most often schooled in computer science or graphic design, need to be retooled in the basic vocabulary of narrative theory.

4. The experience of playing games can never be simply reduced to the experience of a story. Many other factors that have little or nothing to do with storytelling per se contribute to the development of great games and we need to significantly broaden our critical vocabulary for talking about games to deal more fully with those other topics. Here, the ludologist's insistence that game scholars focus more attention on the mechanics of game play seems totally in order.

5. If some games tell stories, they are unlikely to tell them in the same ways that other media tell stories. Stories are not empty content that can be ported from one media pipeline to another. One would be hard-pressed, for example, to translate the internal dialogue of Proust's *Remembrance of Things Past* into a compelling cinematic experience, and the tight control over viewer experience that Hitchcock achieves in his suspense films would be directly antithetical to the aesthetics of good game design. We must, therefore, be attentive to the particularity of games as a medium, specifically what distinguishes them from other narrative traditions. Yet, in order to do so requires precise comparisons — not the mapping of old models onto games but a testing of those models against existing games to determine what features they share with other media and how they differ.

Much of the writing in the ludologist tradition is unduly polemical: they are so busy trying to pull game designers out of their "cinema envy" or define a field where no hypertext theorist dares to venture that they are prematurely dismissing the use value of narrative for understanding their desired object of study. For my money, a series of conceptual blind spots prevent them from developing a full understanding of the interplay between narrative and games.

First, the discussion operates with too narrow a

can be approached in terms of experience design. How are interactions organized and solicited? How does one event flow into another? How does the overall experience "hang together"? Although Laurel theorizes experience design using the model of Aristotelian theater (arguing that it has been shaping audiences' experience for centuries), there are in practice an almost unlimited set of performative models to draw upon: sports, rituals, sagas, popular entertainments, novels, jokes, and so on.

Perhaps what's really at stake in ludology is less the right model and more a sense of tone and attitude — a willingness to mix it up, to entertain many possibilities, to play with lots of different models.

From Markku Eskelinen's Online Response
For some reason Henry Jenkins doesn't define the contested concepts (narratives, stories, and games) so central to his argumentation. That's certainly an effective way of building a middle ground (or a periphery), but perhaps not the most convincing one. [. . .]

Jenkins also misrepresents a dispute (on the usefulness of narratology), important parts of which he seems to be unaware of. It has its roots both in Espen Aarseth's *Cybertext* (which deals extensively with the relationship between stories and games, showing elementary differences in communicative structures of narratives and adventure games) and Gonzalo Frasca's introduction of *ludology* to computer game studies. A

model of narrative, one preoccupied with the rules and conventions of classical linear storytelling at the expense of consideration of other kinds of narratives, not only the modernist and postmodernist experimentation that inspired the hypertext theorists, but also popular traditions that emphasize spatial exploration over causal event chains or which seek to balance the competing demands of narrative and spectacle.[4]

Second, the discussion operates with too limited an understanding of narration, focusing more on the activities and aspirations of the storyteller and too little on the process of narrative comprehension.[5]

Third, the discussion deals only with the question of whether whole games tell stories and not whether narrative elements might enter games at a more localized level. Finally, the discussion assumes that narratives must be self-contained rather than understanding games as serving some specific functions within a new transmedia storytelling environment. Rethinking each of these issues might lead us to a new understanding of the relationship between games and stories. Specifically, I want to introduce an important third term into this discussion — spatiality — and argue for an understanding of game designers less as storytellers and more as narrative architects.

Spatial Stories and Environmental Storytelling

Game designers don't simply tell stories; they design worlds and sculpt spaces. It is no accident, for example, that game design documents have historically been more interested in issues of level design than on plotting or character motivation. A prehistory of video and computer games might take us through the evolution of paper mazes or board games, both preoccupied with the design of spaces, even where they also provided some narrative context. Monopoly, for example, may tell a narrative about how fortunes are won and lost; the individual Chance cards may provide some story pretext for our gaining or losing a certain number of places; but ultimately, what we remember is the experience of moving around the board and landing on someone's real estate. Performance theorists have described role-playing games (RPGs) as a mode of collaborative storytelling, but the Dungeon Master's activities start with designing the space — the dungeon — where the players' quest will take place. Even many of the early text-based games, such as *Zork*, which could have told a wide array of different kinds of stories, centered around enabling players to move through narratively compelling spaces: "You are facing the north side of a white house. There is no door here, and all of the windows are boarded up. To the north a

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discussion of the present topic, which ignores these works, cannot hope to break new ground. A few facts of cultural history wouldn't hurt either: as the oldest astragals (forerunners of dice) date back to prehistory, I'm not so sure "games fit within a much older tradition of spatial stories."

Jenkins Responds

I feel a bit like Travis Bickle when I ask Eskelinen, "Are you talking to me?" For starters, I don't consider myself to be a narratologist at all.

Game Design as Narrative Architecture
Henry Jenkins

10.1. *Civilization 3.* (Atari)

narrow path winds through the trees." The early Nintendo games have simple narrative hooks — rescue Princess Toadstool — but what gamers found astonishing when they first played them were their complex and imaginative graphic realms, which were so much more sophisticated than the simple grids that *Pong* or *Pac-Man* had offered us a decade earlier.

When we refer to such influential early works as Shigeru Miyamoto's *Super Mario Bros.* as "scroll games," we situate them alongside a much older tradition of spatial storytelling: many Japanese scroll paintings map, for example, the passing of the seasons onto an unfolding space. When you adapt a film into a game, the process typically involves translating events in the film into environments within the game. When gamer magazines want to describe the experience of gameplay, they are more likely to reproduce maps of the game world than to recount their narratives.[6] Before we can talk about game narratives, then, we need to talk about game spaces. Across a series of essays, I have made the case that game consoles should be regarded as machines for generating compelling spaces, that their virtual playspaces have helped to compensate for the declining place of the traditional backyard in contemporary boy culture, and that the core narratives behind many games center around the struggle to explore, map, and master contested spaces (Fuller and Jenkins 1994; Jenkins 1998). Here, I want to broaden that discussion further to consider in what ways the structuring of game space

facilitates different kinds of narrative experiences.

As such, games fit within a much older tradition of spatial stories, which have often taken the form of hero's odysseys, quest myths, or travel narratives.[7] The best works of J.R.R. Tolkien, Jules Verne, Homer, L. Frank Baum, or Jack London fall loosely within this tradition, as does, for example, the sequence in *War and Peace* that describes Pierre's aimless wanderings across the battlefield at Borodino. Often, such works exist on the outer borders of literature. They are much loved by readers, to be sure, and passed down from one generation to another, but they rarely figure in the canon of great literary works. How often, for example, has science fiction been criticized for being preoccupied with world-making at the expense of character psychology or plot development?

These writers seem constantly to be pushing against the limits of what can be accomplished in a printed text and thus their works fare badly against aesthetic standards defined around classically constructed novels. In many cases, the characters — our guides through these richly developed worlds — are stripped down to the bare bones, description displaces exposition, and plots fragment into a series of episodes and encounters. When game designers draw story elements from existing film or literary genres, they are most apt to tap those genres — fantasy, adventure, science fiction, horror, war — which are most invested in world-making and spatial storytelling. Games, in turn, may more fully realize the spatiality of these stories, giving a much more immersive and compelling representation of their narrative worlds. Anyone who doubts that Tolstoy might have achieved his true calling as a game designer should reread the final segment of *War and Peace* where he works through how a series of alternative choices might have reversed the outcome of Napoleon's Russian campaign. The passage is dead weight in the context of a novel, yet it outlines ideas that could be easily communicated in god-games such as those in the *Civilization* series (figure 10.1).

Don Carson, who worked as a Senior Show Designer for Walt Disney Imagineering, has argued that game designers can learn a great deal by studying techniques of "environmental storytelling," which Disney employs

in designing amusement park attractions. Carson explains,

> The story element is infused into the physical space a guest walks or rides through. It is the physical space that does much of the work of conveying the story the designers are trying to tell.... Armed only with their own knowledge of the world, and those visions collected from movies and books, the audience is ripe to be dropped into your adventure. The trick is to play on those memories and expectations to heighten the thrill of venturing into your created universe. (Carson 2000)

The amusement park attraction doesn't so much reproduce the story of a literary work, such as *The Wind in the Willows*, as it evokes its atmosphere; the original story provides "a set of rules that will guide the design and project team to a common goal" and that will help give structure and meaning to the visitor's experience. If, for example, the attraction centers around pirates, Carson writes, "every texture you use, every sound you play, every turn in the road should reinforce the concept of pirates," while any contradictory element may shatter the sense of immersion into this narrative universe. The same might be said for a game such as *Sea Dogs*, which, no less than *Pirates of the Caribbean*, depends on its ability to map our preexisting pirate fantasies. The most significant difference is that amusement park designers count on visitors keeping their hands and arms in the car at all times and thus have a greater control in shaping our total experience, whereas game designers have to develop worlds where we can touch, grab, and fling things about at will.

Environmental storytelling creates the preconditions for an immersive narrative experience in at least one of four ways: spatial stories can evoke pre-existing narrative associations; they can provide a staging ground where narrative events are enacted; they may embed narrative information within their mise-en-scene; or they provide resources for emergent narratives.
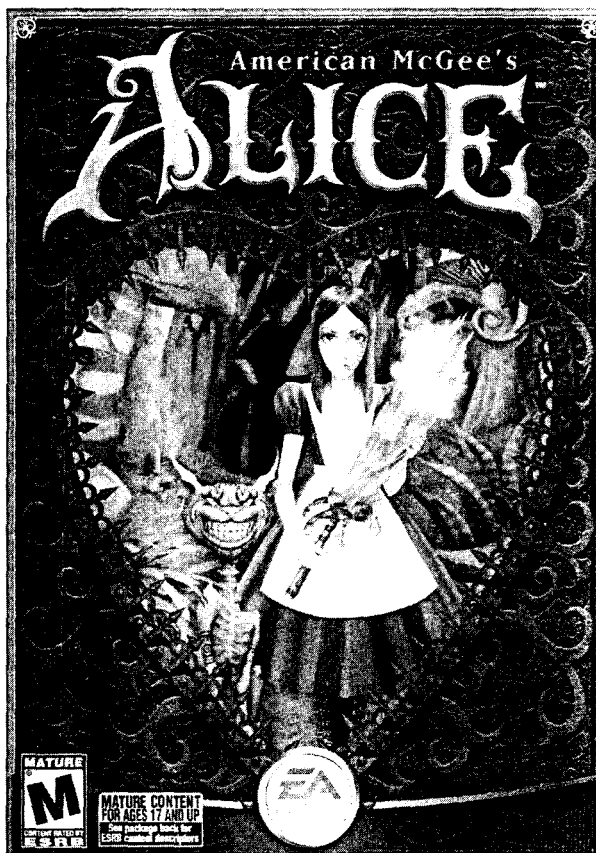
10.2. American McGee's Alice (Rogue Entertainment, Electronic Arts)

Evocative Spaces

The most compelling amusement park attractions build upon stories or genre traditions already well-known to visitors, allowing them to enter physically into spaces they have visited many times before in their fantasies. These attractions may either remediate a preexisting story (*Back to the Future*) or draw upon a broadly shared genre tradition (Disney's Haunted Mansion). Such works do not so much tell self-contained stories as draw upon our previously existing narrative competencies. They can paint their worlds in fairly broad outlines and count on the visitor/player to do the rest. Something similar might be said of many games. For example, *American McGee's Alice*™ is an original interpretation of Lewis Carroll's *Alice in Wonderland* (figure 10.2). Alice has been pushed into madness after years of living with uncertainty about whether her

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Wonderland experiences were real or hallucinations; now, she's come back into this world and is looking for blood. McGee's wonderland is not a whimsical dreamscape but a dark nightmare realm. McGee can safely assume that players start the game with a pretty well-developed mental map of the spaces, characters, and situations associated with Carroll's fictional universe and that they will read his distorted and often monstrous images against the background of mental images formed from previous encounters with storybook illustrations and Disney movies. McGee rewrites Alice's story in large part by redesigning Alice's spaces.

Arguing against games as stories, Jesper Juul suggests that, "you clearly can't deduct the story of *Star Wars* from *Star Wars* the game," whereas a film version of a novel will give you at least the broad outlines of the plot (Juul 1998). This is a pretty old-fashioned model of the process of adaptation. Increasingly, we inhabit a world of transmedia storytelling, one that depends less on each individual work being self-sufficient than on each work contributing to a larger narrative economy. The *Star Wars* game may not simply retell the story of *Star Wars*, but it doesn't have to in order to enrich or expand our experience of the *Star Wars* saga.

We already know the story before we even buy the game and would be frustrated if all it offered us was a regurgitation of the original film experience. Rather, the *Star Wars* game exists in dialogue with the films, conveying new narrative experiences through its creative manipulation of environmental details. One can imagine games taking their place within a larger narrative system with story information communicated through books, film, television, comics, and other media, each doing what it does best, each a relatively autonomous experience, but the richest understanding of the story world coming to those who follow the narrative across the various channels. In such a system, what games do best will almost certainly center around their ability to give concrete shape to our memories and imaginings of the storyworld, creating an immersive environment we can wander through and interact with.

Enacting Stories

Most often, when we discuss games as stories, we are referring to games that either enable players to perform or witness narrative events — for example, to grab a light-saber and dispatch Darth Maul in a *Star Wars* game. Narrative enters such games on two levels — in terms of broadly defined goals or conflicts and on the level of localized incidents.

Many game critics assume that all stories must be classically constructed with each element tightly integrated into the overall plot trajectory. Costikyan (2000) writes, for example, that "a story is a controlled experience; the author consciously crafts it, choosing certain events precisely, in a certain order, to create a story with maximum impact."[8]

Adams (1999) claims, "a good story hangs together the way a good jigsaw puzzle hangs together. When you pick it up, every piece is locked tightly in place next to its neighbors."

Spatial stories, on the other hand, are often dismissed as episodic — that is, each episode (or set piece) can become compelling on its own terms without contributing significantly to the plot development, and often the episodes could be reordered without significantly impacting our experience as a whole. There may be broad movements or series of stages within the story, as Troy Dunniway suggests when he draws parallels between the stages in the Hero's journey (as outlined by Joseph Campbell) and the levels of a classic adventure game, but within each stage, the sequencing of actions may be quite loose. Spatial stories are not badly constructed stories; rather, they are stories that respond to alternative aesthetic principles, privileging spatial exploration over plot development. Spatial stories are held together by broadly defined goals and conflicts and pushed forward by the character's movement across the map. Their resolution often hinges on the player reaching his or her final destination, though, as Mary Fuller notes, not all travel narratives end successfully or resolve the narrative enigmas that set them into motion. Once again, we are back to principles of "environmental storytelling." The organization of the plot becomes a matter of designing the geography of imaginary worlds,

Game Theories > Jenkins   McKenzie Eskelinen
          Juul   Ito Pearce
          Pearce   Flanagan Bernstein
          Zimmerman   Crawford Juul

IV. Game Theories

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so that obstacles thwart and affordances facilitate the protagonist's forward movement towards resolution. Over the past several decades, game designers have become more and more adept at setting and varying the rhythm of game play through features of the game space.

Narrative can also enter games on the level of localized incident, or what I am calling micronarratives. We might understand how micronarratives work by thinking about the Odessa Steps sequence in Sergei Eisenstein's *Battleship Potemkin*. First, recognize that, whatever its serious moral tone, the scene basically deals with the same kind of material as most games — the steps are a contested space with one group (the peasants) trying to advance up and another (the Cossacks) moving down.

Eisenstein intensifies our emotional engagement with this large-scale conflict through a series of short narrative units. The woman with the baby carriage is perhaps the best known of those micronarratives. Each of these units builds upon stock characters or situations drawn from the repertoire of melodrama. None of them last more than a few seconds, though Eisenstein prolongs them (and intensifies their emotional impact) through cross-cutting between multiple incidents. Eisenstein used the term "attraction" to describe such emotionally packed elements in his work; contemporary game designers might call them "memorable moments." Just as some memorable moments in games depend on sensations (the sense of speed in a racing game) or perceptions (the sudden expanse of sky in a snowboarding game) as well as narrative hooks, Eisenstein used the word "attractions" broadly to describe any element within a work that produces a profound emotional impact, and theorized that the themes of the work could be communicated across and through these discrete elements. Even games that do not create large-scale plot trajectories may well depend on these micronarratives to shape the player's emotional experience. Micronarratives may be cut-scenes, but they don't have to be. One can imagine a simple sequence of preprogrammed actions through which an opposing player responds to your successful touchdown in a football game as a micronarrative.

Game critics often note that the player's participation poses a potential threat to the narrative construction, whereas the hard rails of the plotting can overly constrain the "freedom, power, and self-expression" associated with interactivity (Adams 1999). The tension between performance (or game play) and exposition (or story) is far from unique to games. The pleasures of popular culture often center on spectacular performance numbers and self-contained set pieces. It makes no sense to describe musical numbers or gag sequences or action scenes as disruptions of the film's plots: the reason we go to see a kung fu movie is to see Jackie Chan show his stuff.[9] Yet, few films consist simply of such moments, typically falling back on some broad narrative exposition to create a framework within which localized actions become meaningful.[10]

We might describe musicals, action films, or slapstick comedies as having accordion-like structures. Certain plot points are fixed, whereas other moments can be expanded or contracted in response to audience feedback without serious consequences to the overall plot. The introduction needs to establish the character's goals or explain the basic conflict; the conclusion needs to show the successful completion of those goals or the final defeat of the antagonist. In *commedia dell'arte*, for example, the masks define the relationships between the characters and give us some sense of their goals and desires.[11]

The masks set limits on the action, even though the performance as a whole is created through improvisation. The actors have mastered the possible moves, or *lazzi*, associated with each character, much as a game player has mastered the combination of buttons that must be pushed to enable certain character actions. No author prescribes what the actors do once they get on the stage, but the shape of the story emerges from this basic vocabulary of possible actions and from the broad parameters set by this theatrical tradition. Some of the *lazzi* can contribute to the plot development, but many of them are simple restagings of the basic oppositions (the knave tricks the master or gets beaten).

These performance or spectacle-centered genres often display a pleasure in process — in the

experiences along the road — that can overwhelm any strong sense of goal or resolution, while exposition can be experienced as an unwelcome interruption to the pleasure of performance. Game designers struggle with this same balancing act — trying to determine how much plot will create a compelling framework and how much freedom players can enjoy at a local level without totally derailing the larger narrative trajectory. As inexperienced storytellers, they often fall back on rather mechanical exposition through cut scenes, much as early filmmakers were sometimes overly reliant on intertitles rather than learning the skills of visual storytelling. Yet, as with any other aesthetic tradition, game designers are apt to develop craft through a process of experimentation and refinement of basic narrative devices, becoming better at shaping narrative experiences without unduly constraining the space for improvisation within the game.

Embedded Narratives

Russian formalist critics make a useful distinction between plot (or syuzhet) that refers to, in Kristen Thompson's (1988) terms, "the structured set of all causal events as we see and hear them presented in the film itself," and story (or fabula), which refers to the viewer's mental construction of the chronology of those events (Thompson 1988, 39–40). Few films or novels are absolutely linear; most make use of some forms of backstory that is revealed gradually as we move through the narrative action. The detective story is the classic illustration of this principle, telling two stories — one more or less chronological (the story of the investigation itself) and the other told radically out of sequence (the events motivating and leading up to the murder).

According to this model, narrative comprehension is an active process by which viewers assemble and make hypotheses about likely narrative developments on the basis of information drawn from textual cues and clues.[12] As they move through the film, spectators test and reformulate their mental maps of the narrative action and the story space. In games, players are forced to act upon those mental maps, to literally test them against the game world itself. If you are wrong about

whether the bad guys lurk behind the next door, you will find out soon enough — perhaps by being blown away and having to start the game over. The heavy-handed exposition that opens many games serves a useful function in orienting spectators to the core premises so that they are less likely to make stupid and costly errors as they first enter into the game world. Some games create a space for rehearsal, as well, so that we can make sure we understand our character's potential moves before we come up against the challenges of navigating narrational space.

Read in this light, a story is less a temporal structure than a body of information. The author of a film or a book has a high degree of control over when and if we receive specific bits of information, but a game designer can somewhat control the narrational process by distributing the information across the game space. Within an open-ended and exploratory narrative structure like a game, essential narrative information must be presented redundantly across a range of spaces and artifacts, because one cannot assume the player will necessarily locate or recognize the significance of any given element. Game designers have developed a variety of kludges that allow them to prompt players or steer them towards narratively salient spaces. Yet, this is no different from the ways that redundancy is built into a television soap opera, where the assumption is that a certain number of viewers are apt to miss any given episode, or even in classical Hollywood narrative, where the law of three suggests that any essential plot point needs to be communicated in at least three ways.

To continue with the detective example, then, one can imagine the game designer as developing two kinds of narratives — one relatively unstructured and controlled by the player as they explore the game space and unlock its secrets; the other prestructured but embedded within the mise-en-scene awaiting discovery. The game world becomes a kind of information space, a memory palace. *Myst* is a highly successful example of this kind of embedded narrative, but embedded narrative does not necessarily require an emptying of the space of contemporary narrative activities, as a game such as *Half-Life* might suggest. Embedded narrative can and often does occur within contested

spaces. We may have to battle our way past antagonists, navigate through mazes, or figure out how to pick locks in order to move through the narratively impregnated mise-en-scene. Such a mixture of enacted and embedded narrative elements can allow for a balance between the flexibility of interactivity and the coherence of a pre-authored narrative.

Using *Quake* as an example, Jesper Juul argues that flashbacks are impossible within games, because the game play always occurs in real-time (Juul 1998). Yet, this is to confuse story and plot. Games are no more locked into an eternal present than films are always linear. Many games contain moments of revelation or artifacts that shed light on past actions. Carson (2000) suggests that part of the art of game design comes in finding artful ways of embedding narrative information into the environment without destroying its immersiveness and without giving the player a sensation of being drug around by the neck:

> Staged areas... [can] lead the game player to
> come to their own conclusions about a
> previous event or to suggest a potential
> danger just ahead. Some examples
> include... doors that have been broken
> open, traces of a recent explosion, a
> crashed vehicle, a piano dropped from a
> great height, charred remains of a fire.

Players, he argues, can return to a familiar space later in the game and discover it has been transformed by subsequent (off-screen) events. *Clive Barker's Undying*, for example, creates a powerful sense of backstory in precisely this manner. It is a story of sibling rivalry that has taken on supernatural dimensions. As we visit each character's space, we have a sense of the human they once were and the demon they have become. In Peter Molyneux's *Black and White*, the player's ethical choices within the game leave traces on the landscape or reconfigure the physical appearances of their characters. Here, we might read narrative consequences off mise-en-scene the same way we read Dorian Gray's debauchery off of his portrait. Carson describes such narrative devices as "following Saknussemm," referring

to the ways that the protagonists of Jules Verne's *Journey to The Center of the Earth* keep stumbling across clues and artifacts left behind by the sixteenth-century Icelandic scientist/explorer Arne Saknussemm, and readers become fascinated to see what they can learn about his ultimate fate as the travelers come closer to reaching their intended destination.

Game designers might study melodrama for a better understanding of how artifacts or spaces can contain affective potential or communicate significant narrative information. Melodrama depends on the external projection of internal states, often through costume design, art direction, or lighting choices. As we enter spaces, we may become overwhelmed with powerful feelings of loss or nostalgia, especially in those instances where the space has been transformed by narrative events. Consider, for example, the moment in *Doctor Zhivago* when the characters return to the mansion, now completely deserted and encased in ice, or when Scarlett O'Hara travels across the scorched remains of her family estate in *Gone With the Wind* following the burning of Atlanta. In Alfred Hitchcock's *Rebecca*, the title character never appears, but she exerts a powerful influence over the other characters — especially the second Mrs. DeWinter, who must inhabit a space where every artifact recalls her predecessor. Hitchcock creates a number of scenes of his protagonist wandering through Rebecca's space, passing through locked doors, staring at her overwhelming portrait on the wall, touching her things in drawers, or feeling the texture of fabrics and curtains. No matter where she goes in the house, she cannot escape Rebecca's memory.

A game such as Neil Young's *Majestic* pushes this notion of embedded narrative to its logical extreme. Here, the embedded narrative is no longer contained within the console but rather flows across multiple information channels. The player's activity consists of sorting through documents, deciphering codes, making sense of garbled transmissions, moving step-by-step towards a fuller understanding of the conspiracy that is the game's primary narrative focus. We follow links between web sites; we get information through webcasts, faxes, e-mails, and phone calls. Such an embedded narrative doesn't require a branching story

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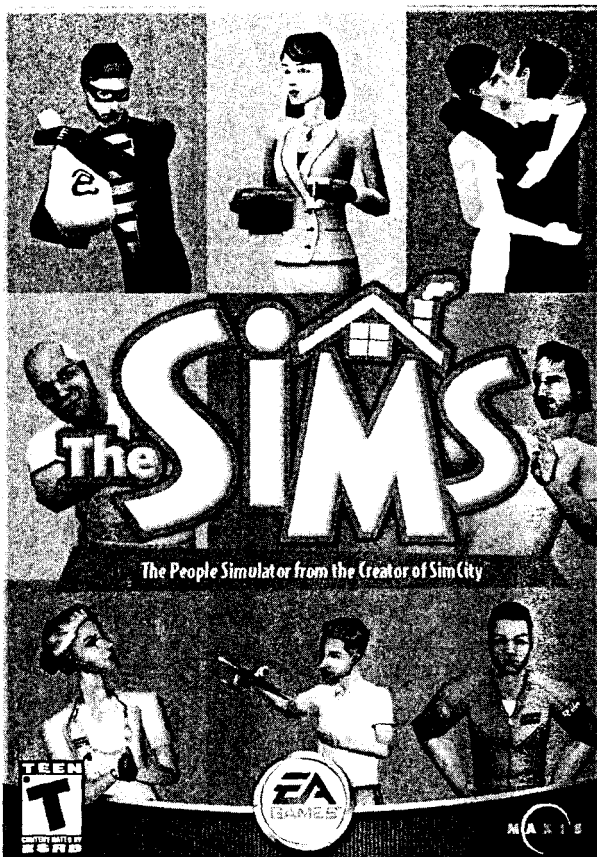
10.3 *The Sims*. (Maxis, Electronic Arts)

Emergent Narratives

The Sims represents a fourth model of how narrative possibilities might get mapped onto game space (figure 10.3). Emergent narratives are not prestructured or preprogrammed, taking shape through the game play, yet they are not as unstructured, chaotic, and frustrating as life itself. Game worlds, ultimately, are not real worlds, even those as densely developed as *Shenmue* or as geographically expansive as *Everquest*. Will Wright frequently describes *The Sims* as a sandbox or dollhouse game, suggesting that it should be understood as a kind of authoring environment within which players can define their own goals and write their own stories. Yet, unlike Microsoft Word, the game doesn't open on a blank screen. Most players come away from spending time with *The Sims* with some degree of narrative satisfaction. Wright has created a world ripe with narrative possibilities, where each design decision has been made with an eye towards increasing the prospects of interpersonal romance or conflict.

The ability to design our own "skins" encourages players to create characters who are emotionally significant to them, to rehearse their own relationships with friends, family, or coworkers or to map characters from other fictional universes onto *The Sims*. A glance at the various scrapbooks players have posted on the web suggests that they have been quick to take advantage of its relatively open-ended structure. Yet, let's not underestimate the designers' contributions. The characters have a will of their own, not always submitting easily to the player's control, as when a depressed protagonist refuses to seek employment, preferring to spend hour upon hour soaking in their bath or moping on the front porch.

Characters are given desires, urges, and needs, which can come into conflict with each other, and thus produce dramatically compelling encounters. Characters respond emotionally to events in their environment, as when characters mourn the loss of a loved one. Our choices have consequences, as when we spend all of our money and have nothing left to buy them food. The gibberish language and flashing symbols allow us to map our own meanings onto the conversations, yet the

structure but rather depends on scrambling the pieces of a linear story and allowing us to reconstruct the plot through our acts of detection, speculation, exploration, and decryption. Not surprisingly, most embedded narratives, at present, take the form of detective or conspiracy stories, since these genres help to motivate the player's active examination of clues and exploration of spaces and provide a rationale for our efforts to reconstruct the narrative of past events. Yet, as the preceding examples suggest, melodrama provides another — and as yet largely unexplored — model for how an embedded story might work, as we read letters and diaries, snoop around in bedroom drawers and closets, in search of secrets that might shed light on the relationships between characters.

tone of voice and body language can powerfully express specific emotional states, which encourage us to understand those interactions within familiar plot situations. The designers have made choices about what kinds of actions are and are not possible in this world, such as allowing for same-sex kisses, but limiting the degree of explicit sexual activity that can occur. (Good programmers may be able to get around such restrictions, but most players probably work within the limitations of the system as given.)

Janet Murray's *Hamlet on the Holodeck* might describe some of what Wright accomplishes here as procedural authorship. Yet, I would argue that his choices go deeper than this, working not simply through the programming, but also through the design of the game space. For example, just as a dollhouse offers a streamlined representation that cuts out much of the clutter of an actual domestic space, the Sims' houses are stripped down to only a small number of artifacts, each of which perform specific kinds of narrative functions. Newspapers, for example, communicate job information. Characters sleep in beds. Bookcases can make you smarter. Bottles are for spinning and thus motivating lots of kissing. Such choices result in a highly legible narrative space. In his classic study *The Image of The City*, Kevin Lynch made the case that urban designers needed to be more sensitive to the narrative potentials of city spaces, describing city planning as "the deliberate manipulation of the world for sensuous ends" (Lynch 1960, 116).

Urban designers exert even less control than game designers over how people use the spaces they create or what kinds of scenes they stage there. Yet, some kinds of space lend themselves more readily to narratively memorable or emotionally meaningful experiences than others. Lynch suggested that urban planners should not attempt to totally predetermine the uses and meanings of the spaces they create: "a landscape whose every rock tells a story may make difficult the creation of fresh stories" (Lynch 1960, 6). Rather, he proposes an aesthetic of urban design that endows each space with "poetic and symbolic" potential: "Such a sense of place in itself enhances every human activity that occurs there, and encourages the deposit of a

memory trace" (Lynch 1960, 119). Game designers would do well to study Lynch's book, especially as they move into the production of game platforms which support player-generated narratives.

In each of these cases, choices about the design and organization of game spaces have narratological consequences. In the case of evoked narratives, spatial design can either enhance our sense of immersion within a familiar world or communicate a fresh perspective on that story through the altering of established details. In the case of enacted narratives, the story itself may be structured around the character's movement through space and the features of the environment may retard or accelerate that plot trajectory. In the case of embedded narratives, the game space becomes a memory palace whose contents must be deciphered as the player tries to reconstruct the plot. And in the case of emergent narratives, game spaces are designed to be rich with narrative potential, enabling the story-constructing activity of players. In each case, it makes sense to think of game designers less as storytellers than as narrative architects.

Notes

1. The term "ludology" was coined by Espen Aarseth, who advocates the emergence of a new field of study, specifically focused on the study of games and game play, rather than framed through the concerns of pre-existing disciplines or other media. (Editors' note: Markku Eskelinen, in his response to this essay, points out that the term was introduced to computer game studies by Gonzalo Frasca. This introduction, according to Frasca, was in the *Cybertext Yearbook* — a publication coedited by Eskelinen and named for Aarseth's *Cybertext* [1997].)

2. For a more recent formulation of this same argument, see Jesper Juul (2001), "Games Telling Stories?"

3. Eskelinen (2001) takes Janet Murray to task for her narrative analysis of *Tetris* as "a perfect enactment of the overtasked lives of Americans in the 1990s — of the constant bombardment of tasks that demand our attention and that we must somehow fit into our overcrowded schedules and clear off our desks in order to make room for the next onslaught." Eskelinen is correct to note that the abstraction of *Tetris* would seem to defy narrative interpretation, but that is not the same thing as insisting that no meaningful analysis can be made of the game and its fit within contemporary culture. *Tetris* might well express something of the frenzied pace of modern life, just as modern dances might, without being a story.

4. "A story is a collection of facts in a time-sequenced order that suggest a cause and effect relationship" (Crawford 1982). "The story is the antithesis of game. The best way to tell a story is in linear form. The best way to create a game is to provide a structure within which the player has freedom of action" (Costikyan, 2000).

5. "In its richest form, storytelling — narrative — means the reader's surrender to the author. The author takes the reader by the hand and leads him into the world of his imagination. The reader has a role to play, but it's a fairly passive role: to pay attention, to understand, perhaps to think... but not to act" (Adams 1999).

6. As I have noted elsewhere, these maps take a distinctive form — not objective or abstract top-down views but composites of screenshots that represent the game world as we will encounter it in our travels through its space. Game space never exists in abstract, but always experientially.

7. My concept of spatial stories is strongly influenced by Michel de Certeau (1988) *The Practice of Everyday Life* and Henri LeFebvre (1991), *The Production of Space*.

8. For a fuller discussion of the norms of classically constructed narrative, see Bordwell, Staiger, and Thompson (1985), *The Classical Hollywood Cinema*.

9. For useful discussion of this issue in film theory, see Donald Crafton (1995), "Pie and Chase: Gag, Spectacle and Narrative in Slapstick Comedy," in Kristine Brunovska Karnick and Henry Jenkins (eds.), *Classical Hollywood Comedy*; Henry Jenkins (1991), *What Made Pistachio Nuts?: Early Sound Comedy and The Vaudeville Aesthetic*; Rick Altman (1999), *The American Film Musical*; Tom Gunning (1990), "The Cinema of Attractions: Early Film, Its Spectator and the Avant Garde" in Thomas Elsaesser with Adam Barker (eds.), *Early Cinema: Space, Frame, Narrative*; Linda Williams (1999), *Hard Core: Power, Pleasure and "The Frenzy of the Visible."*

10. "Games that just have nonstop action are fun for a while but often get boring. This is because of the lack of intrigue, suspense, and drama. How many action movies have you seen where the hero of the story shoots his gun every few seconds and is always on the run? People lose interest watching this kind of movie. Playing a game is a bit different, but the fact is the brain becomes over stimulated after too much nonstop action" (Dunniway 2000).

11. See, for example, John Rudlin (1994), *Commedia Dell'Arte: An Actor's Handbook* for a detailed inventory of the masks and *lazzi* of this tradition.

12. See, for example, David Bordwell (1989), *Narration in the Fiction Film*, and Edward Branigan (1992), *Narrative Comprehension and Film*.

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Game Theories > Juul

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Juul
Pearce   Ito Pearce
Zimmerman Crawford Juul
Flanagan Bernstein

IV. Game Theories

Introduction to Game Time

Jesper Juul

The following sketches a theory of time in games. This is motivated by: (1) plain curiosity; (2) theoretical lack: much work has been done on time in other cultural forms, but there is very little theory of time in games; and (3) the hope that a theory of game time may help us examine specific games, help trace the historical development of games, connect to the big question of how a game feeds player experiences, and generally serve as an analytical tool for opening other discussions in game studies and game design.

Most computer games project a game world, and to play them is therefore to engage in a kind of pretense-play: you are both "yourself," and you have another role in the game world. This duality is reflected in the *game time*, which can be described as a basic duality of *play time* (the time the player takes to play) and *event time* (the time taken in the game world). The relationship between play time and event time is, as we shall see, highly variable between games and game genres: action games tend to proceed in real time, but strategy and simulation games often feature sped-up time or even the possibility of manually speeding or slowing the game. Running counter to this, abstract games do not project a game world at all, and therefore do not have a separate event time.

The play-element of games is reflected in the way we discuss them: if we utter the sentence "Brian is a pig," this is usually considered a metaphor and an insult. A metaphor, since we would propose a transfer of our ideas of a pig to Brian as a person, and an insult, since this would cast Brian in a negative light. But as Ana Marjanovic-Shane describes, to say, "Brian is a pig" while playing a game does not describe Brian as person; it only says that in this play context, Brian assumes the role of a pig. Marjanovic-Shane describes this as a proposition about a fictive plane, rather than a proposition about reality. So, computer games are much like the pretense-play of children (and adults); if we play the World War II game *Axis and Allies*, all our actions have a double meaning. We move a piece around a board, but this also means invading Scandinavia with our troops. We click the keys on the keyboard, but we are also moving Lara Croft.[1] The harmless statement "Brian is a pig" can obviously also be said of an actor in a play, but not of the audience: if Brian is watching the movie *Babe*, we don't say, "Brian is a pig." This means that when we talk about games, we assume a much more direct connection between the game and the

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Response by Mizuko Ito

Time has received little attention in comparison to related discussions of identity and place in virtual worlds, and Jesper Juul's discussion opens up intriguing analytic territory. Juul draws continuities with issues of identity, place, and pretense-play; just as games enable players to try on different identities and teleport to fantastic worlds, they also enable players to experience time in ways not available in real life: time warps, time lapse, time travel, frozen time. At the same time, there are also interesting peculiarities in how to account and coordinate between "real" and "virtual"[1] time, or Juul's play time and event time, and these issues resonate with and diverge from parallel conversations about identity and place in interesting ways. Juul's essay brings these peculiarities up with careful and thought-provoking detail.

The question of representational realism and fidelity in the case of time is particularly intriguing. What are the trade-offs for particular game genres? In the case of objects, people, and places, certain game genres demand higher degrees of realism with regard to real life, such as flight and sport simulations, but most games take advantage of the opportunity for fantasy characters, settings, and physics. In the case of time, pauses, warps, and replays are all player-accessible technical capabilities. Current game design seems to support these options for time play at the expense of temporal realism and consistency in part to manage the balance between flow and dead time that Juul points

player than we would in movies or novels, because games map the player into the game world.

My inquiry therefore proceeds from the belief that a game theory is best built not so much by plainly importing assumptions from other cultural forms, as by examining actual games.[2] The primary focus here is on computer games (in a broad sense, including arcade and console games), but nonelectronic games are also included for an historical perspective.

The theory primarily describes linear, measurable time in games. An obvious objection to this would be that since the playing of a game is a subjective experience, objective time is of secondary importance. But as we shall see, the subjective experience of time is strongly affected by objective time structured by the game: game design and game rules work with objective time in order to create the player's subjective experiences. So examining objective time in games is, paradoxically, a way of understanding how the formal structure of a game feeds the more elusive player experience. The aesthetic problems surrounding "save games" are a prime example.

Finally, game time can be used for examining game history; the development of time in computer games can be seen as the interaction of two different base models: the adventure game that creates coherent worlds that the player must explore in a coherent time,

and the action game that favors unexplained jumps in world and time by way of unconnected levels and rounds.

Abstract Games and the State Machine

To play a game takes time. A game begins and it ends. I'd like to call this time *play time*. Play time denotes the time span taken to play a game. As a first example, we may look at checkers. In abstract games such as checkers or *Tetris*, it would seem that this was all there was to it: that we play games, that everything in the game happens now, while we play. In soccer — which is really just a physical abstract game — the same thing would be true. To draw a diagram of time in such a game is rather trivial:

Play Time ——————————————————————————————▶
                        Time in abstract games
                        (such as checkers or *Tetris*)
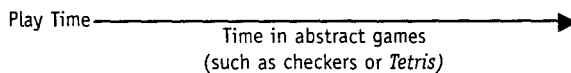
When playing checkers, tennis, or *Tetris* it does not make sense to say that you are immersed in a world: they do not contain play-pretense. The more fundamental part of games is a change of state, the movement from the initial state (the outcome has not been decided) to another state (the outcome has been decided). To help understand this, we may take a cue

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out, but also to coordinate between real life rhythms and play time.

This leads to another intriguing question embedded in the essay. Given fantasy time and time play as a parallel to fantasy worlds and identity play, how do we coordinate between real and virtual time? When players are essentially in two places at the same time, as two different personas, and in two different points in time, something has to give. Event and play time ideally track along the neat railroad diagrams in Juul's paper, as player and software engage in coordinated exchanges, but in reality, the contingencies of our real lives constantly intrude and put brakes on our play time. How do you answer the door to get a pizza to nourish your flesh-and-blood body when you are in the

middle of life and death online combat? If your opponent is a home computer, you probably have the luxury of freezing both event and play time, but if you are playing an online multi-user game, event time marches relentlessly on unless you can somehow convince your opponent to take into account your real-life circumstances.

Quickly completed games like *Tetris* or turn-based games have appeal because they can easily fit in temporal interstices. For games that demand real-time interaction and extended play, it seems crucial to lean on the capabilities of fantasy time and time play to smooth the coordination task. And Juul notes how players take nonrealist conventions of saves, replays, cut scenes, warps, level changes, and loading pauses in

from computer science, saying that a game is actually a *state machine*: it is a system that can be in different states; it contains input and output functions, and definitions of what state and what input will lead to what following state. You can move the piece from E2 to E4, but not to E5; if you are hit by the rocket launcher, you lose energy; if your base is taken, you have lost; etc. When you play a game, you are interacting with the state machine that is the game. In a board game, this state is stored in the position of the pieces on the board; in sports, the game state *is* the players; in computer games, the state is stored as variables and then represented on screen.[3] In the rest of this article, I will be referring to the state of a game as the *game state*. When you play a game, you are simply interacting with the game state:

To play a game is to interact with the Game State.
(Zoom on play time)
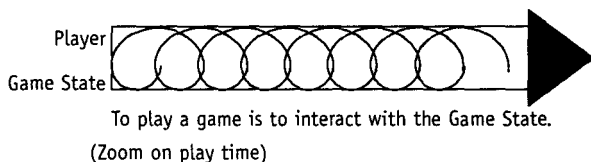
If you cannot influence the game state in any way (as opposed to being unable to influence it in the right way), you are not playing a game. The difference between a real-time abstract game and a turn-based abstract game is simply that in the latter case the game state only changes when the player takes a turn. In a real-time game, not doing anything also has consequences. Additionally, turn-based games do not specify the amount of play time that the player can use on a specific move. (Although this may be specified by tournament rules or social pressure.)

Real-Time Games with Worlds

If we then play a real-time game like *Quake III* or *Unreal Tournament* we experience the duality described in the play section above: you are both "yourself," and a character in the game world. I propose the term "event time" to denominate the time of the events happening in the game world. In most action games and in the traditional arcade game, the play time/event time relation is presented as being 1:1. The frenetic *Quake III* is a good example of the urgency and immediacy provided by a real-time game.

Pressing the fire key or moving the mouse immediately affects the world inside the game. So the game presents a parallel world, happening in real time:

Quake III: The play time has a 1:1 projection in the game world's event time.
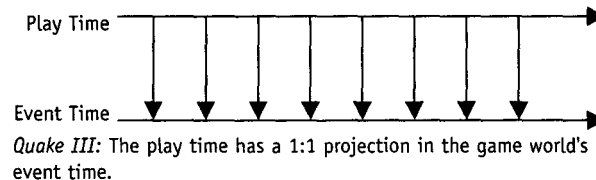
stride as easily as they assume the identity of Lara Croft. Now if only we could pause real-life time to get on with the work of gaming.

From Celia Pearce's Online Response

Juul talks about player manipulation of time (speeding up, slowing down, saving) to adjust for skill level. However, player-manipulated time schemes can also be used as a game strategy. For example, in *The Sims*, I frequently load the characters up with "dead" actions, such as chores, then run the game on double-speed until they're done. This is a time-efficiency strategy so that I can focus on more interesting game events, such as socializing. [. . .]

Juul's in-depth discussion of "saving" is incredibly

useful, but I was surprised that he made no mention of conventions of reincarnation and the role of death in game time. In many first-person shooter games, it is possible to die and rise again; whereas games such as *EverQuest* employ the convention of "perma-death." I think these approaches to and metaphors of death and reincarnation are very important, especially in terms of fictive time schemes, and should be addressed further.

http://www.electronicbookreview.com/thread/firstperson/pearcer1

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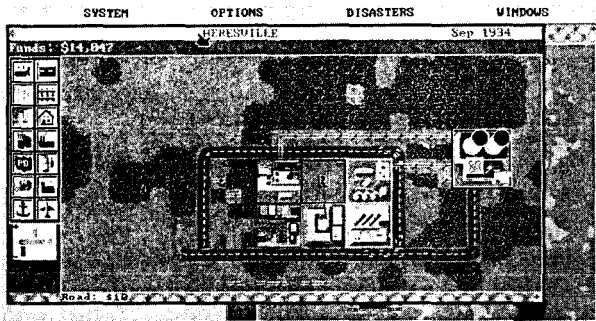
11.1. *SimCity*. (Maxis, Electronic Arts)

In *SimCity* we also find play time and event time. But what *happens* in the game — investing in infrastructure, building houses — happens faster than we would expect it to, were these real-life events. The event time depends on either explicit marks such as dates or on cultural assumptions about the duration of the game events. *SimCity* has both: we know that building a power plant

Event time (*SimCity*)
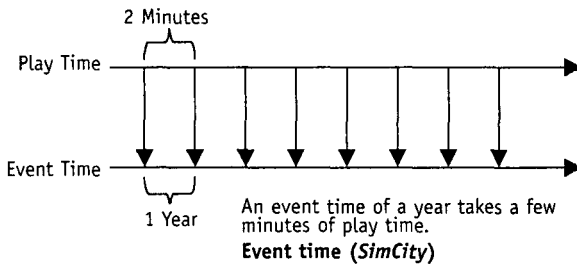
takes more than a few seconds, and the interface displays the current date in the event time. Playing for two minutes makes a year pass in the event time/game world.

Mapping

The relationship between play time and event time can be described as *mapping*. Mapping means that the player's time and actions are projected into a game world. This is the play-element of games; you click with your mouse, but you are also the mayor of a fictive city.

In this way, there is a basic sense of *now* when you play a game; the events in a game, be they ever so strange and unlike the player's situation, have a basic link to the player. Games require at least one instance of the player interacting with the game state; so games that are not abstract also require at least one instance of mapping — one instance where the player performs some act, such as moving a piece on a board or pressing a key on a keyboard, that is projected as having a specific meaning in the game world. The moment of mapping is one that has a basic sense of happening *now*, when you play. Pressing a key influences the game world, which then logically (and intuitively) has to be happening in the same *now*.

As described, action games tend to have a 1:1 mapping of the play time to the event time. In some games such as *Shogun: Total War*, or *The Sims*, the player

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Juul responds

My point is not that real-time games are inherently better or ultimately more compelling than turn-based games, but we can observe that non-paced computer games have all but disappeared: the strategy game has become real-time strategy; the adventure game is often pronounced dead (and is perhaps being replaced by games like *Alice* or *Half-Life*); the commercial puzzle games are real-time.

http://www.electronicbookreview.com/thread/firstperson/juulr2

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IV. Game Theories

11.2 Navigating the game world in search of a potion to make Alice small. (Rogue Entertainment, Electronic Arts)

11.3. Having completed a task, you are rewarded with a cut-scene which gives you information about the next task. (Rogue Entertainment, Electronic Arts)
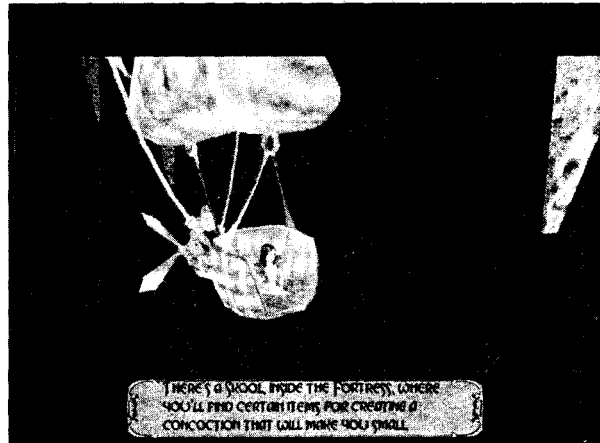
can select the game speed, thus specifying the relation between play time and event time.[4] So the play time can be mapped to event time with a specific *speed*; the player decides how long a period in play time will map to in event time.

There is one extra point about the mapping itself; many games claim to depict historical events: *Axis and Allies* (about World War II) may be a good example, as may the computer game *Age of Empires*. In these games, the event time is assigned to a specific historical period. It is thus perfectly possible to play a real-time game that takes place in 15th Century France or in space in the 32nd. This can be indicated by something as simple as the text on the box ("The year is 3133"), or it can be something the player deduces from the game setting. The year specification in *SimCity* serves the same purpose: so the play time can be mapped to event time with a specific speed and it can be fixated historically.
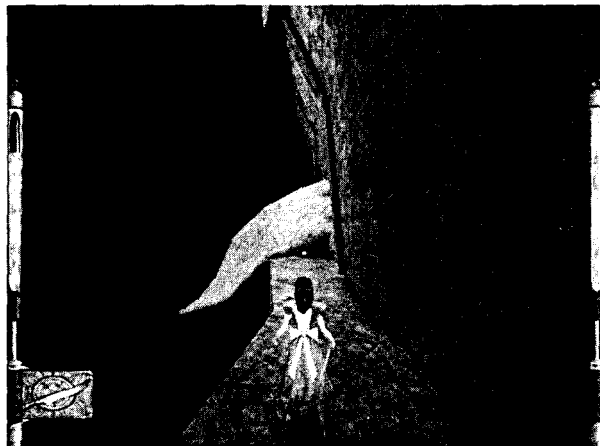
Modern Games with Cut-Scenes

But not all event time is mapped from play time; it is quite common for the computer games of today to contain intro-sequences and cut-scenes. As an example we can look at the game *American McGee's Alice*.

The single-player game in *Alice* is a mission-based real-time game where each mission is framed by *cut-scenes*. Cut-scenes depict events in the event time (in the game world). Cut-scenes are not a parallel time or

11.4 Navigating the game world in search of the promised concoction. (Rogue Entertainment, Electronic Arts)

an extra level, but a different way of creating the event time. They do not by themselves modify the game state — this is why they can usually be skipped, and why the user can't do anything during a cut-scene. Whereas action sequences have play time mapped to event time, cut-scenes disconnect play time from event time:
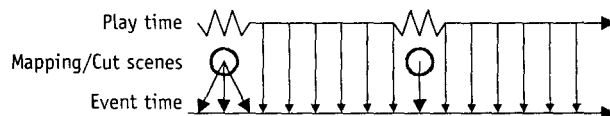
Alternation between play time mapping to event time and event time being narrated by cut-scenes

Common single player game with cut-scenes

Interestingly, there is something of a convention that the play sequences use the full screen, while the cut-scenes are "letterbox," i.e., black bars are added at top and bottom. This presumably signifies "cinema," and also indicates the absence of interactivity. The letterbox presentation cues the player to interpret the graphics using cinematic conventions rather than game conventions.

The Chronology of Time in Games

Regardless of inspirations from cinema, time in games is almost always chronological, and there are several reasons for this. Flash-forwards are highly problematic, since describing events-to-come means that the player's actions do not really matter.[5] Using cut-scenes or in-game artifacts, it is possible to describe events that lead to the current event time, but doing an interactive flashback leads to the classical time machine problem: the player's actions in the past may suddenly render the present impossible, and what then?[6] So time in games is almost always chronological.[7]

But one of the more interesting developments in recent years is that game designers have become better at creating games where things in the game's event time point to past events. Modern adventure games tend to contain not only cut-scenes, but also artifacts in the game world (event time) that tell the player what happened at a previous point in event time. This is the basic detective game model. In *Myst*, books in the game world will also tell you of events that happened prior to the time of the playing, or at least outside the time that you can interact.
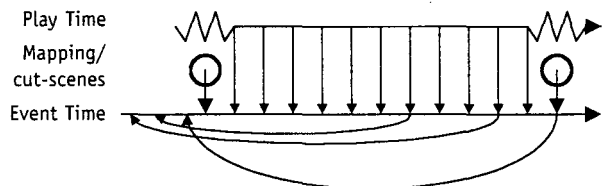
Game events may bring information about earlier events

Game with events telling of earlier events

Adventure and *Pong*: Coherent Time vs. Level Time

Many, especially newer, games are careful to craft the event time as being continuous, creating a believable world. In *Half-Life*, the entire game world is presented as coherent (even if it features teleports). When loading, this is indicated by the word "loading": the event time is described as continuous, but the play time is on pause while loading:

Moving through the game, play time is paused while loading.
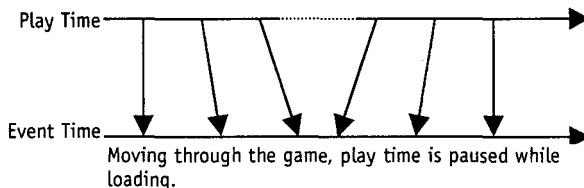
Carefully crafted time in a large game

But on the other hand, many games are quite imprecise with event time. In the classical arcade game, the changing of levels is usually not described as making any sense in the game world; in fact arcade games tend to present several ontologically separate worlds that simply replace one another with no indication of any connection. One way to soothe the passage between two levels is, of course, to use cut-scenes. One of the earliest examples of this, from 1982, is *Pengo*:[8]

This cut-scene does not actually make any kind of temporal sense; it does not mean that something happens in the game world, but rather presents a break between two separate worlds in the game; the timeline of both play time and game time are broken. Play time is not mapped to event time; there is no connection between the event time of the previous level and the coming level:
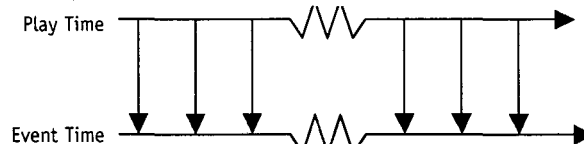
Changing a level, both play time and even time are undefined.

Between levels: Arcade games

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```
1P   7160  HI  20000  2P        0

GAME TIME        MIN.35 SEC.

FROM 00 TO 19 .5000 PTS.
FROM 20 TO 29 .2000 PTS.
FROM 30 TO 39 .1000 PTS.
FROM 40 TO 49 ..500 PTS.
FROM 50 TO 59 ...10 PTS.
60 AND OVER      NO BONUS.

ACT 2              © SEGA 1982
```
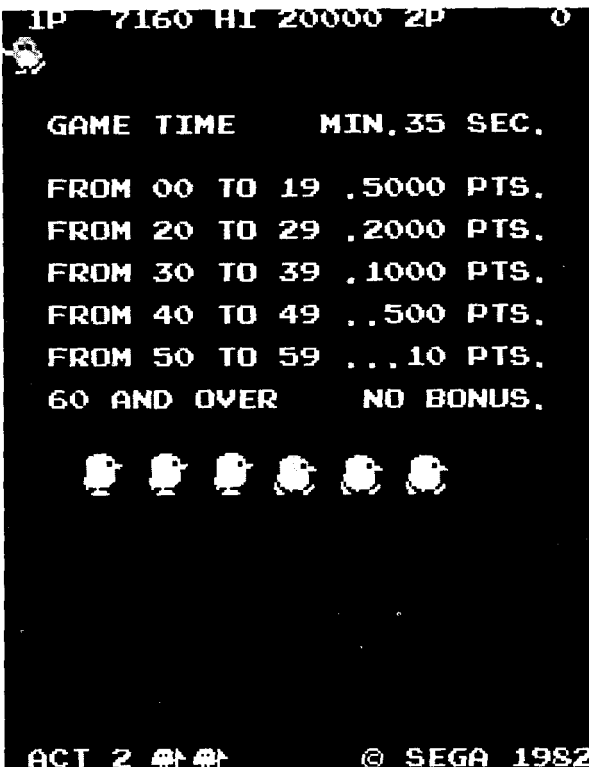
11.5. *Pengo.* After level 2, penguins dance to Beethoven's *An Die Freude.* (Sega)

Similarly, in newer games like *Quake III* or *Counter-Strike*, the jump between different levels is not explained, and the display refers to the materiality of the game ("loading"/"awaiting gamestate") rather than to the game world.

If we think of games as fiction or stories, these kind of abrupt jumps seem unwarranted and esoteric. So why these series of separate worlds without sensible connection? Tracing this historically, we can look at the 1977 game *Space Invaders*, since this game also features several levels: having destroyed all the advancing aliens, the player is simply presented with a new wave of aliens without any explanation. There is no clear relation between these levels. The popularity of this kind of incoherent time can be explained by way of 1971's *Pong*: *Pong* is presented as a kind of tennis, and each session is played with several balls. Pong is structured like a meta-game consisting of separate

rounds, but it makes sense here — this is, in fact, just like tennis. *Space Invaders* borrows the concept of rounds *and* projects a game world. So levels seem connected to the rounds found in sports and other pre-electronic games. This makes sense as an activity (in play time), but not when the game projects a world (in event time). But players do not seem to have any problems with such discontinuities.

Standard Violations of Game Time

In addition to the lack of connection between levels in some games, there are also some standard violations of the play time/event time relationship. Since the play time is projected into the event time, pausing the play time is supposed to pause the event time, bringing the game world to a standstill. The most common violation of this principle regards sound; in *Black and White*, the environmental sounds continue playing when the game is paused. In *The Sims*, the CD player you've purchased for your Sims continues playing when the game is paused. *Space Quest* has a rare but serious violation: *Space Quest* has several speed settings which then influence the play time/event time relation, making the player move faster on higher speeds. In one scene, acid drops falling from a ceiling have a constant speed regardless of the speed setting, and it is thus much easier to outrun the dangerous drops on the high-speed setting (example from Rau 2001).[9]

Save Games

So far, this discussion has been about time in individual game sessions, but adventure games and action-based exploratory games such as *Half-Life* require many game sessions and many saves to complete. In fact, the author's playing of *Half-Life* included literally hundreds of saves and reloads. The same save games were reloaded many times until progress had been made.

Save games are manipulations of game time. They obviously allow the player to store the game state at a moment in play time and then later continue playing from that position. In retrospect, my playing of *Half-Life* is a combination of a multitude of small play sessions that moved the protagonist from the game's beginning to the end. A reconstruction of all the time

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used on the game would yield a giant tree with numerous forks (the save games), numerous dead ends, and only one path through.

There are several arguments against save games, and all relate to the fact that save games allow the player to chop up the game time. First of all, save games are accused of decreasing the dramatic tension of the game, since the player simply reloads if something goes wrong. Another argument is that saves make the game easier or too easy. Both arguments could apply to my experience with *Half-Life*, since a large part of the game was played in a slightly disinterested save-try-reload routine. Although save games make *Half-Life* much easier, it nevertheless appears humanly impossible to complete the game without them. And another counter to these two arguments is the immense frustration to be had if you are forced to replay an entire game level simply because you made a mistake at the very end.[10] For example, the recent games *Hitman: Codename 47* and *Giants: Citizen Kabuto* have been blasted for lacking an in-level save function (see Osborne 2000). A third argument is that the possibility of saving destroys the player's sense of immersion. The fourth is Chris Crawford's uncompromising position, that the need for save games is a symptom of design flaws:

> Experienced gamers have come to regard the save-die-reload cycle as a normal component of the total gaming experience... Any game that requires reloading as a normal part of the player's progress through the system is fundamentally flawed. On the very first playing, even a below-average player should be able to successfully traverse the game sequence. As the player grows more skilled, he may become faster or experience other challenges, but he should never have to start over after dying. (Crawford; in Rollings and Morris 2001, 5)

It seems that Crawford is thinking mostly about fairly replayable games rather than exploratory and adventure games, and in fact there are hardly any games that fit Crawford's description of being completable in the first go and being replayable and interesting afterwards. Save games are probably not an evil to be avoided at all costs.

But save games are mostly tied to single-player games[11], and mostly to exploratory and adventure games. Persistent games such as MUDs or *EverQuest* only have one play time/event time, and the players do not have an option of saving the game state and going back in play time (i.e., they can't save time, only things).

The Experience of Time

What I haven't touched on so far is the question of subjective time: how the player experiences time in games. The objective, linear time described in the game time model feeds subjective time experiences. The experience is a product of both the play time/event time relation and of the tasks and choices presented to the player. Games are supposed to be, if not fun, at least enjoyable experiences, but this is obviously not always the case: I'd like to invoke the concept of *dead time* — when you have to perform unchallenging activities for the sake of a higher goal. One example is that to progress in *EverQuest* or *Ultima Online*, you must spend hours or days doing mundane tasks such as walking, waiting for monsters to respawn, or even fishing or chopping wood. It makes perfect sense within the context of the game world but it is a dull experience — this is the dead time. You have to perform a specific task to advance in the game, but the task in itself holds no interest.[12]

What makes a game interesting? In *Game Architecture and Design*, Rollings and Morris (2001) (referring to Sid Meier) describe a good game as being a series of interesting choices. This means that for every choice the player faces, there must be no single obviously best option; neither may all options be equally good; and finally the player needs to be able to make some kind of qualified choice within the time allocated to the task. Obvious choices make for uninteresting gameplay. The counterargument to the idea of games as interesting choices is that in the author's experience, some sequences bear repetition even though they contain no interesting choices. Repetition of a trivial task can even

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be hugely enjoyable — such as getting a perfect 100% score on the challenge stage in *Galaga*.

The concept of *flow* described by Mihaly Csikszentmihalyi can be used for shedding some light on this: Csikszentmihalyi claims that flow is a mental state of enjoyment shared by people in a variety of situations, such as rock-climbing, chess-playing, and composing music. Flow has eight key traits, two of which are clear goals and feedback (very gamelike!). The flow experience also alters the sense of duration: "Hours pass by in minutes, and minutes can stretch out to seem like hours." (Csikszentmihalyi 1991, 49) To reach a state of flow, a game must be neither too hard (which leads to anxiety) nor too easy (which leads to boredom). This means that the experience of time is tied not only to the play time/event time relation and to the challenges provided by the game, but also to the relation between game difficulty and player ability. This creates some design problems by itself since players have varying skills. There are then a variety of ways to deal with this such as skill settings, training missions, handicaps (in multiplayer games), and secret areas to explore (letting the good player experience more). The player's options of changing game speed on the fly in the aforementioned *Sims* and *Shogun* also affects the difficulty (and thereby the cognitive effort needed), allowing the player to select a game that matches his or her skills.

According to the flow framework, the player will only enjoy playing if the challenges match the player's abilities and thereby lead to a state of *flow* (the player loses the sense of objective time — time will fly). If the game is too hard, the player will experience anxiety or frustration. If the game is too easy, repetition or triviality of choice will make time be experienced as unimportant, *dead* time (time will drag).

Flow is a compelling angle on games, but it does not explain everything: David Myers has noted that the fascination of mechanically repeating trivial tasks in some games contradicts flow — repetition should lead to boredom but doesn't always. It also seems to me that frustration is a more *positive* factor than in Csikszentmihalyi's description, because frustration may actually motivate the player to improve in order to

escape frustration. Finally, flow can only explain games as a challenging activity in play time but ignores the projected world, the event time.

A Model of Time in Games

Game state: The state of the game at a given time.

Play time: The time used by the player to play the game.

Event time: The time of the events in the game.

Mapping: The process of claiming that what the player does is also something in event time; a projection of the play time onto event time.

Speed: The relation between the play time and the event time.

Fixation: The historical time of the event time, if any.

Cut-scenes: When the event time is constructed through narration (i.e. told rather than played).

A History of Game Time

Time in games has become increasingly complex and varied during the history of the computer game, but it is a development that moves in two directions. The root of games in play time allows them to define their worlds much more loosely and less coherently than we would accept in most other cultural forms. At the same time, the continued developments in processing power and data storage make it possible to craft event time with increasing detail and precision. These two directions can be traced to two original computer games: the round-based, sports-like game of *Pong* (the action game) and the world-creating, explorative game of *Adventure* (the adventure game).[13]

One of the biggest changes in computer game history is the movement from being primarily played in arcades to being primarily played at home. One of the selling points of the original Pong machine was actually "Ball serves automatically" — the economics of publicly available arcade games demanded that arcade game designers create extremely short (real-time) game sessions in order to have more players insert coins. The home game has made possible games of longer duration, save games, slow games... in fact, more varied game time.

On a historical note, traditional board-, sports-, and card games tend to be quite abstract, whereas computer games mostly project worlds. Though card games in some sense present a third option since the cards are, at

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least historically, assigned symbolic meanings and are therefore neither abstract, nor world-projecting. Chess is, depending on your interpretation, probably symbolic and somewhere between abstract games and nonabstract games: it *is* possible to see chess as two societies at war (even if it isn't "realistic"), but it would be very hard to interpret chess as specifying event time; that the moving of a rook would "really" take three hours in event time. This is because event time needs to be created by textual and visual cues, and chess is very low on these.

The main difference between the computer game and its nonelectronic precursors is that computer games add automation and complexity — they can uphold and calculate game rules on their own, thereby allowing for richer game worlds; this also lets them keep pace. So computer games create more worlds, more real time, and more single player games than nonelectronic games. (The combination of automation and pace essentially paved the way for the real-time strategy game.) Games with pace seem to be more compelling, or at least more immediately appealing, than turn-based or nonpacing games.

But as always, new forms do not simply annihilate the older ones. Some of the strangest play time/event time mappings can be found in modern pinball games, whose basic rule continues to be "hit all the flashing things," but this is now augmented by a small display sending the player on "missions." The 1993 *Star Trek: Next Generation* contains (among others) a "destroy the asteroid" mission, where an asteroid threatens "the ship," and it is the player's job to destroy the asteroid... by hitting a flashing thing with the ball. There is no way that we can believe in a connection between the player's shooting the ball around and the story happening on the display, but it does not seem to matter.

Conclusion

This essay has described some fundamentals of time in games. The duality of play time and event time appears basic because it is a basic play relation. As shown, the time model proposed here can be used for examining variations in the worlds constructed by different games; it connects to the player's relation to the game, and it can be used for thinking more broadly about game aesthetics. It is also a strong genre indicator, and an essential part of game history. A further step would be more detailed examinations of how game time is constructed through manuals, visual and acoustic cues, and gameplay. Much work is also needed to understand how game time and gameplay create player experiences.

When playing a game that projects a world, the player is (or the player's actions are) projected into the game world in a very direct way — this is the play element of computer games. A more open question is whether this means that we long for the virtual reality dream of being completely immersed in games. Many of the games mentioned here work against the idea of immersion, because their discontinuous times and worlds point strongly to themselves as being games rather then believable fictional environments. This, however, does not make them any less enjoyable. Games do not need to make sense to be fun.

Looking at the terms and diagrams in the text above should not make us forget how incredibly quickly we grasp the complexities of game time when playing. The question "When was the power plant built?" has two answers: July 2001 and September 1934. Doing several things at the same time, acting both here and in a fictive world, comes naturally to most people. As such, there is a lot of work to be done in bringing out the tacit knowledge we use when playing games.

Game Theories > Juul

Jenkins   McKenzie Eskelinen
Juul   Ito Pearce
Pearce   Flanagan Bernstein
Zimmerman Crawford Juul

IV. Game Theories

Juul Notes

1. In the play perspective, computer games have several unique traits, one being that play works by projecting actual objects into a fictive plane (such as saying, "This mouse is a spaceship.") A common problem when playing is that the real objects do not have the properties to simulate what they are supposed to represent, i.e., the mouse does not actually fly. It may not matter that much, as it is then possible to say, "The spaceship is flying," but the objects used (the props) are unable to simulate this on their own. In other words, play is good at producing any kind of world, but has problem with consistency. (Computer) games are much better at providing consistency, but they cannot easily create the worlds that play can: the subject matter of a game has to be formalized and created as rules before the game can start.

2. See Juul (2001) for a discussion of the problems of using narrative theory in the study of games.

3. On a technical note, most games are discrete, finite state machines; meaning that the ball is objectively either in or out, and that there is a limitation to the number of possible positions (this is in games such as tic-tac-toe, chess, or *Quake*). Sports are basically analog, infinite state machines; meaning that the ball may be in any number of positions between in and out, and that there is no limit to the possible soccer matches that can be played. Sports tend to have an umpire to decide in doubtful cases, since there may be argument about whether the ball was in or out. This doesn't happen in chess. For the sake of completeness, I must add that some variations of four-in-a-row allow the playing board to be expanded indefinitely; and as such they are discrete, infinite state machines.

4. The play time/event time relation depends somewhat on the familiarity of the game events. The real-time strategy game *StarCraft* (1998) is set in space, and the player doesn't have strong expectation for the speed of the units of the Zergs or the Protoss: the speed selection is consequently not described in relation to the play time (such as "twice as fast"), but simply named "normal," "faster," etc.

5. Flash-forwards *can* be included as indicating something either outside the player's influence or something that the player has to fight to reach. (This then ceases to make sense as a flash-forward, if the player doesn't reach it.)

6. This kind of paradox can be found in *Max Payne* (2001) where the game simply restarts the flashback level if the player fails.

7. The prevalence of unchronological time in traditional narratives is afforded by the fixed nature of the events. Because the story in a sense has already happened, the events can easily be presented in nonchronological order for aesthetic effect.

8. *Donkey Kong* is a year earlier (1981) and features cut-scenes that actually make sense in the game world.

9. Rau's interpretation is that this incident in *Space Quest* destabilizes the notion of event time; I think it has the appearance of a mistake and so rather confirms the idea. Although I think it is perfectly possible to deliberately create such clashes and illogic, I do not think it is the case here.

10. And then again, the joy of winning correlates positively to the amount of frustration experienced on the way, but the general trend from the 1980s till now is to make games easier or at least more tuned towards giving the player many small victories and fewer long stretches of frustration.

11. *Age of Empires II* (1999) is one of the few multiplayer games to contain a save function. This obviously requires a bit of cooperation and communication between players.

12. In an interview, game designer Starr Long comments on the dead time in such games:

Up until now, we've been building these big, giant virtual worlds. And we like to brag about, "Oh, it takes four hours to walk from one end of the continent to the other." Somewhere along the line we lost that it's not really fun to walk for four hours. That's why people don't do it a lot. Imagine if I could go from doing one fun thing to another fun thing without this big dead time in between, where I was either getting lost because it's hard to find my way around, or I get killed on my way and have to start back over. [MacIsaac 2001]

13. This is a simplistic description of computer game history, but the 1980s term "action adventure" captured the marriage of action with exploration. The third major influence on computer games is probably board games, particularly strategy games. Card games do not seem to have had a significant impact on computer games. (Most likely because they are the only major nonspatial game genre, whereas computer games are almost exclusively spatial.)

Ito Response Note

1. I use "real" and "virtual," hereafter not in quotes, as a shorthand to refer to computationally and otherwise embodied phenomenon, not to refer to an ontological distinction.

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Towards a Game Theory of Game
Celia Pearce

Introduction: Why Game Theory

In mapping the trajectory of popular media, we can see a clear corollary between theory and practice. Literature, film, even popular music all began to a certain extent as "folk" genres that, once their cultural relevance had been proven lasting, caught the attention of theorists and entered into academic discourse.

Such a cycle is currently underway vis-à-vis computer games. This medium is still erroneously considered to be in its "infancy." (In fact, it is just coming of legal drinking age in some states.) The evolution of a body of theory on computer games is an exciting prospect. As with other media, it promises to broaden and deepen the discourse of the medium (we can start talking about something beyond violence, for example). In addition, if history is any indicator, it will also have a positive influence on the practice of creating games, just as the development of film theory in the sixties and seventies did on film craft. It is ironic that academia, the birthplace of games, has mostly shunned them until recently. It is also quite appropriate that

MIT, where the first computer game — *SpaceWar* — was created as an independent hack by computer science Ph.D. students, was one of the first places to embrace game design and game culture as a subject of academic study. Here I will invoke MIT's own Henry Jenkins, who stated in his January 2001 presentation at "Entertainment in the Interactive Age," at the University of Southern California, that the most significant evolutionary leap in the film craft occurred when people started writing about it.

Repurposing Theory

Because computer game theory is a relatively new discipline, much of what has emerged thus far has come out of theorists from other disciplines absorbing game theory into their purview. It seems axiomatic that there must always be a phase where established media seek to "repurpose" their existing "assets" for use in the new medium. Most notably, film and literary theorists have begun to discuss game theory within their own idiosyncratic frameworks. These disciplines have much to add to the discourse on games, particularly when the discussion is centered on narrative. However, they are missing a fundamental understanding of what games are about. Because of this, they continue to struggle to "fit a square peg into a round hole," so to speak, by attempting to force games into their own notions of

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Response by Mary Flanagan

Celia Pearce's wake-up call for new ways of thinking about games in her article "Towards a Game Theory of Game" is well-timed. Computer games, at least those of a commercial genre, long ago reached their "adulthood." As a capitalist affirmation of "digital culture," the gaming industry is now more profitable than box office sales in the film industry (ticket sales were just 7.7 billion in 2000; Associated Press, 2001). In 2001, games represented a $10.5 billion dollar industry, growing 15 % per year from 1997 [IDSA]. Gaming is a social and technological phenomenon that has worldwide influence.

But. . . what will theories of and for gaming actually look like?

Pearce follows in the steps of cybertext theorist Espen Aarseth, who has argued against "applying one's favorite theory" such as literary, film, or television studies to emerging forms. In effect, Aarseth argues, this combination of theories reduces new media phenomena to broad conceptual terms such as "interactive," "labyrinthine," and "worlds." The textuality of a computer game whose materials are entirely computer-based needs to be addressed in a way that brings the experiential, social, and material aspects of such work to the forefront.

Although the application of old theories to new forms can result in such linguistic muddling, to argue that we must define game studies *devoid* of knowledge of other art and entertainment forms is not

narrative and "text." To quote the old adage, "If you have a hammer, everything looks like a nail." The result is a kind of theoretical imperialism which those in the gaming world are scarcely aware of, let alone involved with. A small handful of significant theorists, such as Henry Jenkins, J.C. Herz, and Janet Murray, have moved game theory into its own realm by helping to define and articulate what is unique to games and game culture, even while comparing games to other media.

A number of debates have been raging about the definition and role of "narrative" in games. It seems only natural that people who have considerable expertise in other narrative media would seek to bring their own knowledge to bear in this argument. However, it is very important to understand that narrative has a profoundly different function in games than it does in other narrative-based media. In games, narrative structures operate in a comparable but at the same time diametrically opposed way to that of traditional narratives. And although there is much to be learned from traditional narratives, and a great value in drawing comparisons between the two, without understanding the fundamental differences, the discourse becomes ultimately irrelevant because it entirely misses the fundamental point of what games are about.

A Play-Centric Approach

The first and most important thing to know about games is that they center on PLAY. Unlike literature and film, which center on STORY, in games, everything revolves around play and the player experience. Game designers are much less interested in telling a story than in creating a compelling framework for play.

If we begin with this fundamental fact, it enables us to look at narrative in a play-centric context, rather than a "storytelling" context. At its highest level, the function of narrative in games is to engender compelling, interesting play. The reason that narrative games have gained such popularity is because they borrow what is engaging and interesting about other forms of narrative and use it to enhance the play experience. Where interactive narrative tends to fail is where the model is based on interacting with a linear narrative genre, such as interactive movies. Interactive "novels" have been slightly more effective from a critical perspective, but they have made virtually no impact on the mainstream of interactive media.

Narrative, again, operates at a fundamentally different level in games than it does in other media. A game is most simply described as framework for structured play. In most cases, this structure will include some type of goal, obstacles to that goal, and resources to help you achieve the goal, as well as

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constructive. We must recognize historical contexts of gaming against the torrent of "novelty" rhetoric in "new" media by looking around us at our own human history. Games have been important throughout time: the *Royal Game of Ur* may be 5,000 years old, *Weiqi* (*Go*) is said to have a 4,000-year history, and various sports have fascinated participants and observers since before the Greeks. "Modern" (or as Pearce notes, postindustrial) computer-based games utilize traditional sport and board game elements, dimensional spaces, aspects of narrative, and other aspects that each have historical contexts, bringing to the forefront the concept of play and fun over all other principles.

Gaming brings elements of other media forms into

play, but to develop a cohesive study of computer gaming, scholars must look at a very wide range of disciplines and histories, some extremely popular and "lowbrow." Cultural studies as a theoretical discipline has thankfully paved the way for the academic study of popular culture, so that activities from kitsch refrigerator magnets to Barbie collecting can be studied with intellectual ferocity. Those who look at games need to draw upon studies of communities in sociology and other areas, cognitive psychology, and studies of interaction and use patterns in fields such as industrial design and architecture (areas that have long considered "the user/participant," and have made multiple tracts/multiple motivations of users and a consideration of space essential parts of good design).

consequences, in the form of penalties and rewards (which can often translate into obstacles and resources). At its simplest level, these elements create a generic deconstructed narrative structure of sorts. The author has identified six different narrative "operators" that can exist within a game; the first is clearly a component of all games, by definition. The second through fourth can exist in various combinations, or not at all:

Experiential: The emergent narrative that develops out of the inherent "conflict" of the game as it is played, as experienced by the players themselves.

Performative: The emergent narrative as seen by spectators watching and/or interpreting the game underway.

Augmentary: Layers of information, interpretation, backstory, and contextual frameworks around the game that enhance other narrative operators.

Descriptive: The retelling of description of game events to third parties, and the culture that emerges out of that.

Metastory: A specific narrative "overlay" that creates a context or framework for the game conflict.

Story System: A rule-based story system or kit of generic narrative parts that allows the player to create their own narrative content; story systems can exist independent of or in conjunction with a metastory.

A good game, even one without an obvious "storyline" (or *metastory*), while being played, will tend to follow something that resembles the emotional curve of a dramatic arc. A great example of this would be basketball. At its heart is the dynamic "conflict" between the teams, and subconflicts among the individual players, including players within a team. This is the *experiential* aspect, the narrative that *emerges* as a product of the play itself, between the players. To the spectator, this translates into a *performative* drama which the viewer experiences in the third person, but which also has an equal amount of dramatic impact. This aspect of the narrative is enhanced by the *augmentary* content of journalistic reportage that the spectator has access to before, during and after the game. This content takes the forms of the numerous

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Unfortunately, calling for new language and methodologies with which to consider computer games is not the same thing as writing them. Now we begin the "dirty work" to articulate exactly what types of intersections of theories we can use to explore games. Certainly questions concerning authorship, individual and collective action, game world time, perception, and positions in between audience and participant need to be better articulated — perhaps even new words invented to develop and enhance these sites and positions. Just to be troublesome, I'll end this response with a quote from Barthes. "A text's unity lies not in its origin but in its destination" (Barthes 1988, 171). In other words, the best games are the ones tightly woven around the user's desires, seamless, catering, which

seem to be filled with options for those who need to break the levels. Participatory, skill-based, emotional, addictive, often competitive, instinctual, frequently violent, yet at the same time, immersive, creative, sharing, rewarding, empowering, and frequently community-building, gaming occupies a critical cultural niche. We must learn how to talk about it.

From Mark Bernstein's Online Response: "And Back Again"

To assume that games cannot hold a mirror up to nature, that they cannot move us or change us, is almost to assume that they are hardly worth discussing. Children play games, but the games we study are not

subplots that are layered over the game itself, such as conflicts between teammates, personal narratives of players, city rivalries, etc. The *descriptive* aspect of basketball, which is captured primary through postgame sports coverage, operates in the retelling of the game afterward. Some games, while rife with narrative suspense during game play, may tend to lose something in the translation. As J. C. Herz has pointed out, golf may be fun to play, but it doesn't make much of a story after the fact. In basketball, the descriptive element is almost always accompanied by augmentary elements, which tend to carry through before, during and after the game itself. These capture the personal, behind-the-scenes narrative, "the thrill of victory and the agony of defeat."

Although basketball provides an excellent example of the first four narrative operators described previously, it includes neither a metastory nor a story system. It's important to realize that in many games, particularly precomputer games, narrative operates on a much more abstract level than it does in other narrative media. In board games, for example, the metanarrative generally functions as a metaphorical overlay for a mathematical or logical structure. Thus, a game can be deconstructed for its "pure" structure, as well as its narrative overlay or metastory. They key to game narrative is that it is, by definition, incomplete. It must be in order to leave

room for the player to bring it to fruition. This is one of the primary flaws of applying literary or film theory to games; the authorial control, which is implicit in other genres, tends to undermine the quality of the user experience.

Some games are pure structure with no metastory. For example, Tic-Tac-Toe is a simple game that has a clear structure that results in a very compressed narrative arc on the experiential level. Needless to say, both its performative and descriptive properties are somewhat thin. And it has no metastory whatever. *Battleship*, on the other hand, can be deconstructed in terms of its pure logical construction (the positioning and targeting of objects in a grid), as well as its metastory, a battle between two seafaring fleets. Note the level of abstraction of the narrative in *Battleship*. Also note that there are no characters. In typical narrative texts, both literary and cinematic, characters are central to the conflict. You cannot really imagine a story without characters. In a game, on the other hand, it is quite possible, and often desirable, to have a narrative with no "characters" whatsoever. And in fact, well-developed characters often get in the way. Games tend to favor abstracted personas over "developed" characters with clear personalities and motivations. More abstracted characters leave more room for the player, and are therefore better suited to support a play-centric model.

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child's play (and child's play, to children, is deadly serious). Children like to dress up as kings and to undress, but drama is not merely playing house or playing doctor.

Tolkien does indeed hold an important place in the development of computer games, but Pearce utterly misunderstands *The Lord of the Rings*. Tolkien's importance has little to do with the maps that adorn his endpapers. Yes, Tolkien spoke of writing as a journey through imagined worlds, but this perception is not uncommon. Neither is it necessarily helpful in understanding either Middle Earth or interactive art. Yes, he kept elaborate notebooks. This is not uncommon, either: we know many of the War Poets through their notebooks. (Tolkien on The Somme was

24, and if no poppies bloom in the Dead Marshes, we still recognize the muck and thirst of Flanders refracted through the memory of the Burma Road and Stalingrad and That Fucking Island, the land even Marines would not name.)

Game designers who see only Sherlock Holmes's puzzle solving are missing the point, just as game designers who think the story of war is the struggle between two generals have forgotten the lessons of last two centuries. They have forgotten *The Naked and the Dead* and *Catch-22*, or, for that matter, *Run Silent, Run Deep* and *Apocalypse Now...*

Game Theories >	Jenkins	McKenzie Eskelinen
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	Pearce	Flanagan Bernstein
	Zimmerman	Crawford Juul

IV. Game Theories

Perhaps the best example of the ways narrative operates in a noncomputer game can be demonstrated by chess. Chess has a brilliant mathematical and logical structure that we can look at purely for its structural elegance. It has a clear experiential and performative arc. In addition, it has a metastory of two battling kings and their armies and minions (figure 12.1). To understand the narrative of chess, it might be helpful to compare it to a traditional narrative with a similar plot: Shakespeare's *Macbeth*. Although both have a similar "storyline," the comparison clearly highlights the profound difference in how narrative operates in each genre.

In chess, the drama of the experience resides in the strategic conflict between the players, not in empathizing with characters, as in *Macbeth*. The metanarrative operates at a highly abstracted level, creating a context for this intellectual contest. It is interesting to note that this conflict between the players is played out entirely without the benefit of dialogue. Conversation often has a role in games, but in chess it is minimal. It is hard to imagine *Macbeth* without dialogue. Chess replaces the classic Aristotelian techniques of mimesis and empathy with the game-specific technique of agency by giving the player "avatars" that serve as representatives for his or her own actions.

12.1. The chess set of King Edward II, Tower of London. (Photo by Celia Pearce)

As you can see, the distinction has profound implications in terms of narrative. Although both techniques involve projection of the player/audience into a character space, they do this in profoundly different ways. Empathy/mimesis requires the development of highly constructed and authored characters with which viewers develop an empathic bond. Agency creates a container for players to inhabit. Avatars must by definition have a certain level of ambiguity in their characters in order to allow the players to transpose or project themselves into them. Part of the technique of game design is making

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Games do not ask the player to construct or interpret what the author is trying to "tell" them. Rather they function as a kit of parts that allows the player to construct their own story or variation thereof.

strategic decisions about how much and what sort of room to leave for the player.

In addition, chess has an ambiguous ideology or morality. There is no clear "good guy" or "bad guy." *Macbeth* too employs a technique of ambiguous morality: although we know that Macbeth is someone we would not necessarily aspire to be like, we empathize with his struggle nonetheless. But the way these ambiguities are conveyed is very different. Chess has a sort of "Zen" quality of symmetry, equality and fair play. It is interesting that more recent games of military strategy, such as *Risk*, and its computer relatives such as *Age of Empires* and *Civilization*, utilize an asymmetrical structure in which all players do not start with equal assets. This technique can tend to enhance the drama, as well as the potential variations in the emergent narrative.

Recent Examples

To illustrate my points in terms of contemporary computer games, I would like to highlight two game genres in particular that I think have been successful because they are based on a play-centric model of narrative. Before doing so, however, I want to take a few moments to ponder the drawbacks of narrative within games.

Whereas narrative theorists, academics, and those engaged in a critique of games are obsessed with narrative, many game players find narrative quite problematic. The largest controversy has to do with the use of "cut-scenes," also known as "cinematics." These are linear segments within a game that are used to create a narrative context, or "reward" the player for having completed a mission or achieved a subgoal in the game. While often beautifully rendered (since typically they are not rendered in real time, they have the luxury of higher graphical quality), many players find cut-scenes to be egregiously interruptive to their play experience. It seems counterintuitive to use passivity as a reward for play. Many game players associate the idea of "narrative" with this type of enforced linearity, which is a throwback to cinema.

What are much more interesting, and I think are proving to be the so-called "killer apps" of narrative in

gaming, are various procedural forms of narrative, which combine various levels of metastory and story systems. I am going to look at two genres in particular which have caused considerable groundswell, and by looking at them from a play-centric point of view, gain some perspective as to why they have been both critical and popular successes.

The first genre I'd like to look at is the massively multiplayer online role-playing game, or, in game culture parlance "MMORPG." The two most popular of these are *Ultima Online* and *EverQuest*, and second-tier games include *Baldur's Gate*, *Asheron's Call*, and *Diablo*. Although they differ in some significant ways, what all these games have in common is that they create fantasy story worlds in which players improvise narratives in real time. These games, all of which share the common theme of medieval fantasy, represent the evolution of about forty years of popular culture converging on the computer. They can be traced back to J.R.R. Tolkien's *The Hobbit*, and its sequels, which caused what can only be called a pop culture phenomenon starting in the 1960s. This highly elaborate imaginary world was tailor-made for interaction because, in Tolkien's own words, the stories were developed as a means to explore the worlds. From this emerged the analog role-playing game *Dungeons and Dragons*. first introduced by TSR, Inc. in the mid-1970s, and its online text-based descendents, MUDs (Multi-User Dungeons).

In many respects, the medieval fantasy genre MMORPG is a graphical MUD, and most of them still rely heavily on text for dialogue, although what used to be handled through textual descriptions (e.g., "You are stranding outside the castle, facing north"), is now done visually. This hybrid visual/text form has developed a small but adamant following, and although by game sales standards they are something of a niche market, these games have a great enough audience that they manage to at the very least support themselves as commercial endeavors.

The MMORPG combines a metastory, primarily in the form of a predesigned story world and various plots within it, with a story system that allows players to evolve their own narratives within the game's story framework. The central play mechanic of the

12.2. Screenshot from *EverQuest: The Shadows of Luclin.*
(Verant, Sony Online Entertainment)

MMORPG is what I refer to as social storytelling, or collaborative fiction. The idea is that the story emerges as a direct result of social interaction. As with the Renaissance Faire (also a huge commercial success throughout the U.S.), players enter a fully constructed three-dimensional world. Rather than selecting fixed characters, they select particular character roles. These are somewhat generic, but allow players to configure unique characters composed of various traits, which they can then evolve over time into a fully developed persona through a system of improvisational collaborative narrative (figure 12.2).

In traditional narrative, a classic view of character development is that characters are what they do. It is the actions of the characters that not only tell us who they are, but also determine who they are. The choices they make in a sense configure their personalities. In the MMORPG genre, this dynamic is put in the hands of the player. Players take actions that construct their characters on the fly. For example, depending on your role, you may be endowed with certain innate traits or talents, such as strength or intelligence or magical powers. You also have the opportunity to acquire skills. In games like *EverQuest* and *Ultima Online,* the game is structured in such a way as to make it beneficial for players to join forces and form spontaneous teams. As your team develops over time, your role on the team will cause your character, originally a generic kit of skills, to evolve distinctive personality traits. The

strategies you choose in enacting your innate talents and acquired skills engage you in a process of real-time character creation. In addition, you can acquire property, including weapons, tools, magic amulets, and even real estate, which will all become part of your character's unique personality. Some players choose to act out in an antisocial way. In many cases, these players are penalized by game operators, but just as often, they are penalized socially. For in these worlds, reputation is the most valuable currency.

These games, because they are highly improvisational in nature, require constant attention from their operators. *EverQuest,* for example, has a Command Central at its San Diego headquarters where its customer service staff wanders about the virtual game world assisting players, and creating narrative events, conflicts and missions for players to engage in. They carefully watch what players are doing and constantly evolve the game, the game rules, and the game narrative accordingly. Again, a play-centric model, in which the player is revered and constantly accommodated.

The result is an emergent narrative, a story that evolves over time as a result of an interplay between rules and players. In addition, there is the emergent infrastructure that is constantly reformulating itself, evolving, and adapting, much like an ecosystem, to the player behavior. Most of these games work on a product-plus-subscription economic formula: you purchase a CD at the software store, then pay a nominal monthly fee (seldom more than $20) for unlimited play. Although at present the audience for these games is relatively small compared to the mainstream, their fan base is extremely committed. MMORGs require a large time investment because they are strongly skills — and relationship-based. It requires a commitment of at least ten hours a week to maintain ongoing engagement in these games, and many players put in well above that. Interestingly, most of the original MMORPGs' meta-stories focus on medieval fantasy/*Dungeons and Dragons* style themes, although more mainstream themes are forthcoming, which will most likely expand the audience for this genre.

The second game genre we are going to look at, currently represented by one game and its various

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sequels and enhancements, is *The Sims*, designed by Will Wright of Maxis. *The Sims* evolved out of an entirely different tradition and genre in games, that of the simulation game. I want to note that there are two distinctly different types of games that are referred to as simulations. One is the training-based simulator, which comes out of the military world, and puts the player into a first-person role centering on mechanical control of a vehicle, e.g., a flight or tank simulator. The other is a simulation that dynamically models an entire system. This tradition comes from a variety of sources, but was used extensively in paper-and-pencil form in the social sciences, history, and economics in the 1960s and 1970s. *SimCity* was one of first computer games to employ techniques of this type of simulation in a game context, and at the time it was released (1989), it revolutionized the game experience and business. Since then, this genre has been expanded into a range of metastory contexts, including Maxis' *SimEarth, SimAnt*, as well as *Roller Coaster Tycoon* by Microprose.

The Sims has been described as a human behavior or psychological simulator. Rather than employing purely player-inhabited characters or purely autonomous characters, the game puts players in the role of influencing semi-autonomous characters. They are semi-autonomous because while they have their own innate behaviors, they depend on player influence to dictate their actions. The viewpoint is isometric rather than first person, allowing players to have a god-like view over the game terrain.

The Sims is a story system described as a kind of narrative Lego. Designer Will Wright himself describes it as a sort of virtual dollhouse. The original prototype was created as a physical model using model railroad materials. *The Sims* uses the emergent narrative model, but leaves the metastory relatively open-ended. The original *Sims* Game, which has now spun off into a variety of add-ons and enhancements, is basically a domestic drama, or a sitcom, depending on how you play. You create a family and place them in a house that you can then enhance and occupy with a variety of items to better the Sims' lifestyle and comfort level. There is a strong anticonsumerist satirical subtext to the game. I refer to it as the IKEA game, because a

major feature is the catalogue of humorously described household items and enhancements (figure 12.3). The subtext is that characters need things to make them happy, but over time, the things begin to own them. A larger house requires more cleaning time. You can hire a maid, but the higher expenses require that you maintain a certain earning power. As your characters evolve, they form various relationships with each other. Some can even fall in love and form domestic partnerships, even same-sex partnerships.

The Sims is a cross between a dollhouse, a Tamagotchi, and the television program *Big Brother*. In *Big Brother*, contestants inhabit an enclosed house for eighty days, eliminated one-by-one by audience vote until only one roommate is left standing. As in *Big Brother*, the *Sims* player is a voyeur with an all-seeing eye and definite influence on the characters, even though they also have their own "free will," so to speak. You must maintain a constant vigil over them or calamity might result. Characters without adequate cooking skills can perish in kitchen fires, and children can be taken from negligent parents by social services.

Sims characters are built from a kit of character parts that includes various physical (mostly having to do with appearance), as well as personal traits. The emphasis here is more on personality than skills, however (figure 12.4). You can construct your own configuration of such traits as neatness, friendliness, etc., or you can select an astrological sign that will automatically configure a personality for you. Based on this, the character will have certain natural qualities and aptitudes. Your characters can also acquire skills that will enable them to avoid things such as kitchen fires, or improve their job performance, thereby earning promotions at work.

Sims are very moody and when they aren't getting their needs meant, they will throw tantrums, shaking their fists and calling to you in "Sim-ish," a combination of verbal gibberish and symbols that appear in comic book bubbles over their heads. Images such as food, kissing, and recreational activities provide indicators of what Sims want or what they are conversing about.

The Sims has taken a radically different approach to narrative than most of the games that preceded it. In

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addition to a story system that results in an experiential narrative, *The Sims* has a built-in descriptive component (a feature it shares with some of the MMORPGs) in the form of a "Family Album" feature that allows players to take snapshots of their game underway. They can then make descriptive storyboards and post them on *The Sims* web site for others to view. As a result, a new play trend has emerged, in which players have transformed the game into a storyboard authoring tool (figure 12.5). Players have used it to recreate autobiographical or even news stories.

In addition, players can upload their games onto the site so that other players can continue the gameplay. In other words, if you create a family, you can put it up on *The Sims* web site, and another player can pick it up where you left off. Thus, there might be multiple versions of your family, having been taken in different directions by different players.

The game also allows for skinning, which the MMORPGs sometimes (but not always) allow for. Skinning is the practice of pulling your own assets into the game. Most of the time, it consists of placing new texture maps on game environments or characters. Maxis encourages this sort of thing and has even created a trading post within the web site where players can exchange skins and other custom-built game features.

Part of why it is interesting to look at the *The Sims* in terms of narrative fiction overall is that it represents an abdication of authorial control, or, perhaps more

accurately, a shift in the definition of "author." The creation of meta-stories and story systems has become a new form of authorship that is a sort of author/nonauthor role. It is somewhat ironic in light of the "death of the author" debate that has raged in poststructuralist literary theory, from Barthes to Foucault to L'Dieaux, that it is games, rather than literature, that have been able to finally dispense or at least significantly reframe the author's role as creator of content.

The Sims is a story system that lets the player drive the story experience within a set of carefully crafted rules, processes, and constraints. It blurs the line between audience and author in the same way the MMORPGs do, but with a more open-ended story framework. Furthermore, Maxis is developing even more interesting ways to blur that line. In his keynote address at "Entertainment in the Interactive Age," Will Wright presented a diagram showing the role of players in content creation. His "pyramid" content scheme states that if the 10% of players who occupy the top level of the pyramid are defined as expert storytellers, then for every million players there are 100,000 people creating high-level game content. The idea here is that the "author" shifts into a role as facilitator, and the audience now takes over the role of storytelling.

Maxis is currently looking at ways to reward this top 10% of player/creators, either financially or with free game subscriptions, updates, etc. At this writing, Maxis is in development with *The Sims Online*, a massively

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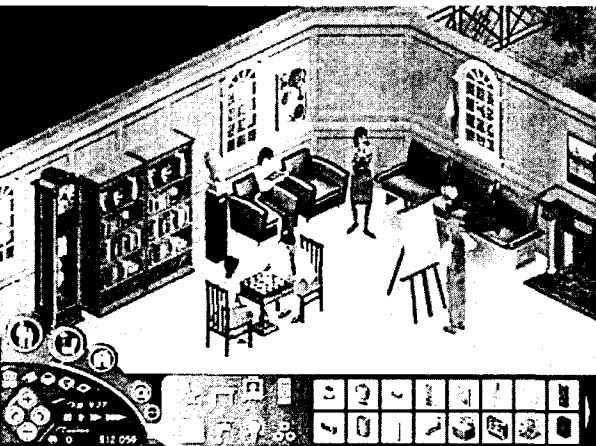
12.3. Build mode in *The Sims,* aka The IKEA Game.
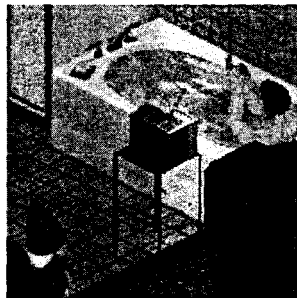(Maxis, Electronic Arts)
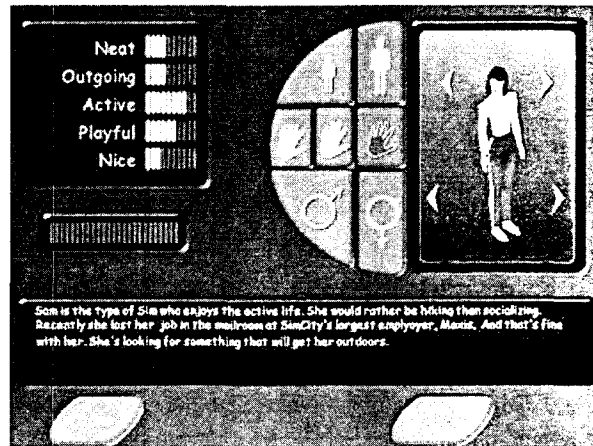
12.4. Character kit in *The Sims.*
(Maxis, Electronic Arts)

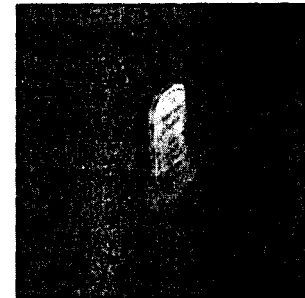Pete the Lawn Gnome makes an "anonymous" call to report the death of Bob, his lonely but devoted owner.

The first of several failed attempts at killing Bob's drunken son, Tony, who has inherited the house.

With the help of an army of plastic pink flamingos, Pete succeeds in incinerating Tony.

Tony is destined to spend the rest of his days as a lawn ornament.

12.5. Scenes from "A Lawn Gnomes Revenge" [sic], a player-created story using *The Sims.*(Maxis, Electronic Arts)

multiplayer *Sims* world that players can co-inhabit. Here players will be able to start their own businesses and devise their own entertainment for other *Sims* characters.

This notion of authorial abdication is essential to understanding where game narrative diverges from other narrative media. Other narrative media focus on "text," and text as a signifier of authorial authority. The text is fixed, and it has a single authoritative source. In some cases, that authoritative source might be a community, but nonetheless, the text is fixed. It may be open to a range of interpretation, and I will here take exception to those who say that all narrative is interactive. If we use the term as defined in the dictionary, interactive is by definition responsive. In other words, it must have a visibly different manifestation with each user's individual input. A nonlinear book may arguably fall into this definition by virtue of the fact that the reader assembles its sequence as he or she reads. But a linear story does not allow for any variable manifestations, and therefore, by definition, it cannot be interactive.

Looking at the differentiations between game-based and other forms of narratives can give us some vital clues as to the pitfalls of transitioning between the two. Repeatedly, filmmakers have attempted to leverage the popularity of video and computer games. But if we review some of the points made above, we can easily see why the game-to-movie adaptation has repeatedly failed.

The number one reason is that the function of character in each medium is diametrically opposed. The contrast between Macbeth and the chess king sheds light on why *Mario Brothers, Dungeons and Dragons*, and *Tomb Raider* have made disappointing films. One only has to imagine chess as a stage play to understand why these transitions consistently fail. In the game *Tomb Raider,* Lara Croft is a partially formed character; she is in essence a cartoon who serves as an avatar onto which the player is meant to project her — or more often, his — own interpretation. It is important that the character is incomplete, because if the character is too developed there is nothing compelling for the player to contribute. I frequently liken game design to having a good conversation: in order for it to work, you have to listen, which means leaving gaps for the other person to fill. Taking a caricature that has been created as a vehicle for player projection and trying to develop it into a full-blown cinematic character is a dangerous game to play, so to speak.

Reverse adaptations have been slightly more successful, but it's important to understand why. Generally a game version of a film character will need to be streamlined. Some characters, such as Indiana Jones, are cartoony-enough that they can easily transition into game characters. In *Blade Runner*, the designers at Westwood Studios chose not to use the main character in the movie, but developed a new character broadly based on the film. Because the *Blade Runner* character is mysterious and ambiguous to begin with, this was an easier stunt to pull than taking a

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highly articulated, nuanced character and trying to develop it for a game. On the other hand, it may simply be that all characters played by Harrison Ford are particularly well-suited for game narratives.

In fact, a deeper analysis reveals that certain story genres are more innately gamelike to begin with. These include mysteries, mission or goal-based adventures, or combat scenarios. James Bond and *Mission: Impossible* are two examples of gamelike film genres that have transitioned into critically and popularly successful games. In any case, it seems that games are weaker at character development, whereas they excel at adventure, mystery, and action. Even non-movie-based games based on these themes, such as *Thief* and *Deus Ex*, have been the more popular among games that employ a more literal metanarrative.

The other sort of narrative genre that does well in a game framework is the world-based narrative. *The Hobbit* was an example cited earlier. In fact, Tolkien himself spent many years developing the world, its cultures and languages, and the story was really just a way to describe and explore the world. Any book that has a map in it is likely to be good material for a game, because it is clear that the game is about the relationship between the characters and the world.

Star Wars is a great example of a story world that is tailor-made for gaming. The first movie is much more of a game than a film. As is the case in all the *Star Wars* films, the characters tend to be archetypal and somewhat cartoon-like (Harrison Ford again!), which makes them perfect building blocks for game narrative. George Lucas's strengths as a world-builder have resulted in story contexts that have proven to be endlessly fascinating to at least two generations thus far. At this writing, Verant, the creators of *EverQuest*, are developing *Star Wars: Galaxies*, a MMORPG based on the *Star Wars* worlds. Based on sneak previews at E3, most game industry pundits are predicting a slam dunk. This is a case where the world will be complete, deeply developed and highly dynamic, but the story will be open-ended, to allow players to create their own narrative within this familiar imaginary space.

The most compelling thing about these trends is that they are changing the distinction between producers

and consumers. In film, television, theater and literary forms, there is generally a very clear line between producer and consumer. However, in these new forms of interactive narrative, particularly those that employ story systems, this line has become blurred. The consumer is now becoming a producer/consumer.

Computer games are really the first medium that blurs this boundary between author and audience so completely. As such, it undermines some of the fundamental tenets of postindustrial (e.g., printing press, film projector, television) narrative, which is based on a mass-production, one-to-many "broadcast" model. With the computer as a two-way, dynamic medium, those engaged in game design are creating an entirely and radically new ideology about narrative. They are not so much storytellers as context creators, and what they are doing is nothing short of revolutionary. As such, I believe that they have earned their own unique and indigenous theoretical discourse.

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Narrative, Interactivity, Play, and Games: Four Naughty Concepts in Need of Discipline

Eric Zimmerman

Discipline?

Yes, discipline. On one level, this essay is about identifying a desperate need for discipline and the delivery of that discipline to its well-deserved targets. A kind of disciplinary spanking, if you will.

On another level, this essay is about games and stories. Undoubtedly, there is a tremendous amount of interest in the intersection of games and stories these days. Academic journals, conferences, and courses about computer-based storytelling, digital interactivity, and gaming culture have flourished like a species of virulent weed in the manicured garden of the university. On the commercial end of things, game developers increasingly rely on filmic story techniques in the design of their products, turning present-day computer and video games into a kind of mutant cinema. Meanwhile, shelves of books like this one are being written and published, tossed out like stepping stones into the emerging terrain where design, technology, art, entertainment, and academia meet.

Curiously, so much of this interest is driven by a kind of love/hate relationship with the medium. For as much as we seem enamored by the possibilities of digital media, we seem just as soundly dissatisfied with its current state. Lurking just below the surface of most of the chapters in this volume is one sort of frustration or another: frustration with the lack of cultural sophistication in the gaming industry; frustration with the limitations of current technology; frustration with a lack of critical theory for properly understanding the medium. Perhaps frustration is a necessary part of the process. But perhaps we can relieve some of that frustration with some good old-fashioned discipline.

Looking Closer

Compared to the more robust fields that cluster about the theory and practice of other media, it's clear that the "game-story" as a form remains largely unexplored. Terms and concepts run amuck like naughty schoolchildren. And a more disciplined look would indeed seem to be in order. But what would it mean to take a closer look at games and stories?

Response by Chris Crawford

Thank you, Eric Zimmerman, for taking the time and energy to nail down four central terms that have suffered much abuse in recent years. Those four terms have been stretched to fit everybody's pet theories, so becoming shapeless blobs. We are past due for a housecleaning of these words, a "back to basics" movement, a tightening-up of the terminology.

Zimmerman does justice to the task. Eschewing the conceit of formal definition, he concentrates on utility rather than form. The sole test of his success then lies in the answer to the question: how useful are Zimmerman's definitions? To what extent do they bring us closer to understanding the concoction of game and narrative? Unfortunately, the concluding suggestions he offers don't seem to get us very far; no grand answers leap from the page. Perhaps this is too harsh a standard by which to judge the chapter. Perhaps we should settle for a more lenient standard of judgment, to wit: had these ideas been widely accepted ten years ago, would we have been spared some of the many disastrous marriages of narrative and interactivity we have seen?

Consider branching stories on the computer. After many years and hundreds of attempts, most with dismal results, many old pros have abandoned this design concept (although it retains a hard core of followers). If we apply these definitions to branching stories, will we unearth a fatal flaw? I think not. Branching stories don't violate any of the terms of

Does it mean figuring out how to make games more like stories? Or how to make stories more gamelike? Does it mean documenting and typologizing new forms of game/story culture? Integrating games into learning? Mapping relationships between digital media and other media? Inventing programming strategies for storytelling? Understanding the ways that digital media operate in culture at large? There are as many approaches to the question of "games and stories" as there are designers, artists, technologists, and academics asking the questions.

The truth, of course, is that there are no right or wrong approaches. It all depends on the field in which a particular inquiry is operating and exactly what the inquiry itself is trying to accomplish. However, there is common ground. What everyone investigating the "game-story" would share are in fact those two strange terms: "games" and "stories."

Concepts and terms do seem to be at the heart of the matter. This essay tackles the terminological knot of the "game-story" by prying apart and recombining the two concepts into four: narrative, interactivity, play, and games. Each concept is considered in relationship to each other as well as to the larger question of "games and stories." My goal is to frame these concepts in ways that bring insight to their interrelations, with the larger aim of providing critical tools for others who are

attempting to create or study the conundrum of the game-story.

Four Naughty Terms

Play. Games. Narrative. Interactivity. What a motley bunch. Honestly, have you ever seen such a suspicious set of slippery and ambiguous, overused, and ill-defined terms? Indeed, they are all four in need of some discipline, just to make them sit still and behave. Before I roll up my sleeves and get to work on them, however, allow me to lay some of my cards on the table, in the form of a series of disclaimers.

Disclaimer 1: Concepts, Not Categories
In presenting these four terms (games, play, narrative, and interactivity), I'm not creating a typology. The four terms are not mutually exclusive, nor do they represent four categories, with each category containing a different kind of phenomena. They are four concepts, each concept overlapping and intersecting the others in complex and unique ways. In other words, the four words are not the four quadrants of a grid or the four levels of a building. They are "things to think with"; they are signs for clusters of concepts; they are frames and schemas for understanding; they are dynamic conceptual tools; they represent a network of ideas that flow into and through each other.

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these definitions, nor do they run against the grain of the further elucidations Zimmerman offers.

This troubles me; the primary value of these definitions should lie in their utility, but they seem useless in exposing an already-known failure. How can we trust them to guide us to something that works when they can't guide us away from something that doesn't work? Nevertheless, I don't dismiss these definitions. They aren't wrong or misleading; they just don't go far enough. They require tightening and polishing, not disposal. Indeed, I suspect that Zimmerman has already captured all the fundamental truths he needs to take us further, but is restrained by a politic recognition of the sensibilities of other workers in the field. It is my hope that this chapter will nudge us

all towards a closer convergence that will permit an even tighter set of definitions in future.

From Jesper Juul's Online Response: Unruly Games

Perhaps the problem is that my relation to games is rather unambiguous, and so I fall outside the love/hate relations described in the essay: I am happy about the games I have played in the past 15 to 20 years, and I am pretty happy about the games I get to play these days. As such I am not especially dissatisfied with the gaming industry, except in the sense that the increasingly large budgets are leaving less room for experimental games. With this perspective, the marriage of storytelling and gaming may be more of a problem than a solution. I can

Disclaimer 2: Forget the Computer
While digital media is certainly a primary vector in the momentum of interest that has led to this book, the phenomena we call games and stories — as well as play, narrative, and interactivity — predate computers by millennia. Computer media is one context for understanding them, but I'm going to try to avoid typical technological myopia by examining these concepts in a broad spectrum of digital and nondigital manifestations.

Disclaimer 3: Defining Definitions
For each of the four key terms, I do present a "definition." The value of a definition in this essay is not its scientific accuracy but instead its conceptual utility. I give definitions not in order to explain phenomena, but in order to understand them.

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Disclaimer 4: Why I'm Doing This
Why does it matter to me to better understand "games and stories"? Because I'm a designer of game-stories, and a closet Modernist to boot. I'm looking to better understand the medium in which I work, in order to create new and meaningful things that no one has ever experienced before. It's certainly not the only kind of stance to take. But now you know where I'm coming from.

Narrative

First term: narrative. I'm going to begin with this close cousin to the "stories" of the "games and stories" equation. My strategy of discipline for the term narrative is to present a broad and expansive understanding of the concept, to think beyond the normal limits of what we might consider narrative, to help uncover the common turf of stories and games.

The Definition
I draw my definition from an essay by J. Hillis Miller: "Narrative," from the book *Critical Terms for Literary Study* (1995). Miller's definition of the term "narrative," grossly paraphrased, has three parts:

> 1. A narrative has an initial state, a change in that state, and insight brought about by that change. You might call this process the "events" of a narrative.

> 2. A narrative is not merely a series of events, but a personification of events though a medium such as language. This component of the definition references the representational aspect of narrative.

> 3. And last, this representation is
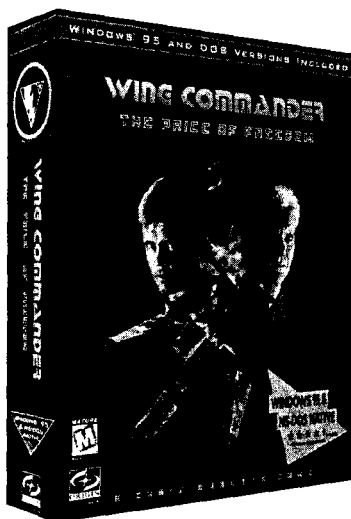
13.response.1.
Wing Commander 4: The Price of Freedom raised the production values bar again, featuring actors such as Mark Hamill (Origin, Electronic Arts)

follow Chris Crawford, who has actually attributed what he sees as the sorry state of the industry to the "cinematic game" *Wing Commander*™ (13.response.1), blaming it for radically raising the expectations for production value, thereby leading to the death of experiment.

Zimmerman's pragmatic idea of stories as one specific way of framing games is quite liberating, but I want to emphasize that such framings always carry a large amount of ideology and historical baggage. The obvious critique would be that the game-story angle is a lens that emphasizes character, graphical production value, and retrospection — and hides player activity, gameplay, and replayability. As Zimmerman states, games are good at things that other media are bad at

constituted by patterning and repetition. This is true for every level of a narrative, whether it is the material form of the narrative itself or its conceptual thematics.

It's quite a general definition. Let's see what might be considered narrative according to these three criteria. A book is certainly a narrative by this definition, whether it is a straightforward linear novel or a choose-your-own-adventure interactive book, in which each page ends with a choice that can bring the reader to different sections of the book. Both kinds of books contain events which are represented through text and through the patterned experience of the book and its language.

A game of chess could also be considered a narrative by this scheme. How? Chess certainly has a beginning state (the setup of the game), changes to that state (the gameplay), and a resulting insight (the outcome of the game). It is a representation — a stylized representation of war, complete with a cast of colorful characters. And the game takes place in highly patterned structures of time (turns), and space (the checkerboard grid).

Many other kinds of things fall into the wide net Miller casts as well — some of them activities or objects we wouldn't normally think of as narrative. A

marriage ceremony. A meal. A conversation. The cleverness of Miller's definition is that it is in fact so inclusive, while still rigorously defining exactly what a narrative is.

Because, what I wish to ask is NOT the overused question:

> *Is this thing (such as a game) a "narrative thing" or not?*

Instead, the question I'd like to pose is:

> *In what ways might we consider this thing (such as a game) a "narrative thing"?*

What am I after? If I'm intersecting games and stories to create something new out of the synthesis of both, my aim with the concept of narrative should not be to replicate existing narrative forms but to invent new ones. The commercial game industry is suffering from a peculiar case of cinema envy at the moment, trying to recreate the pleasures of another media. What would a game-story be like that wouldn't be so beholden to preexisting linear media? Good question. But I'm getting ahead of myself. We're still two full terms away from games. Next victim: interactivity.

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— and vice versa. My basic worry is then that the story angle is asking games to focus on their weaknesses rather than their strengths.

Zimmerman Responds:

Are "grandiose claims" really what we need? Possibly. But for me the questions that cluster about the game-story are so complex that there can't be just a single set of answers.

Interactivity

Interactivity is one of those words which can mean everything and nothing at once. So in corralling this naughty concept, my aim is to try to understand it in its most general sense, but also to identify those very particular aspects of interactivity which are relevant to "games and stories."

The Definition
Try this on for size, from <dictionary.com>:

> *interactive*: reciprocally active; acting upon or influencing each other; allowing a two-way flow of information between a device and a user, responding to the user's input

OK. So there's an adequate common-sense definition. But if we're triangulating our concept of narrative with this concept of interactivity, the problem is that by this definition all forms of narrative end up being interactive. For example, take this book you're holding. Can you really say that the experience of reading it isn't interactive? Aren't you holding the book and physically turning the pages? Aren't you emotionally and psychologically immersed? Aren't you cognitively engaging with language itself to decode the signs of the text? And doesn't the physical form of the book and your understanding of its contents evolve as you interact with it? Yes and no.

If what we're after is relationships between our terms, it's important to find the terrain of overlap between narrative and interactivity. But we don't want the two terms to be identical. It seems important to be able to say that some narratives are interactive and some are not — or rather, that perhaps all narratives can be interactive, but they can be interactive in different ways.

Intuitively, there is in fact some kind of difference between a typical linear book and a choose-your-own-adventure book. And it seems that the difference in some way is that naughty concept of interactivity. Here's one solution. Instead of understanding "interactivity" as a singular phenomenon, let's subdivide it into the various ways it can be paired up with a narrative experience. Four modes of narrative interactivity are presented:

Mode 1: Cognitive Interactivity; or Interpretive Participation with a Text
This is the psychological, emotional, hermeneutic, semiotic, reader-response, Rashomon-effect-ish, etc. kind of interactions that a participant can have with the so-called "content" of a text. Example: you reread a book after several years have passed and you find it's completely different than the book you remember.

Mode 2: Functional Interactivity; or Utilitarian Participation with a Text
Included here: functional, structural interactions with the material textual apparatus. That book you reread: did it have a table of contents? An index? What was the graphic design of the pages? How thick was the paper stock? How large was the book? How heavy? All of these characteristics are part of the total experience of reading interaction.

Mode 3: Explicit Interactivity; or Participation with Designed Choices and Procedures in a Text
This is "interaction" in the obvious sense of the word: overt participation such as clicking the nonlinear links of a hypertext novel, following the rules of a Surrealist language game, rearranging the clothing on a set of paper dolls. Included here: choices, random events, dynamic simulations, and other procedures programmed into the interactive experience.

Mode 4: Meta-interactivity; or Cultural Participation with a Text
This is interaction outside the experience of a single text. The clearest examples come from fan culture, in which readers appropriate, deconstruct, and reconstruct linear media, participating in and propagating massive communal narrative worlds. These four modes of narrative interactivity (cognitive, functional, explicit, and cultural) are not four distinct categories, but four overlapping flavors of participation that occur to varying degrees in all media experience. Most interactive activities incorporate some or all of

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them simultaneously.

So, what we normally think of as "interactive," what separates the book from the choose-your-own-adventure, is category number three: explicit interactivity. As we hone in on our four terms, note that we've made enough progress to already identify those phenomena we might call "interactive narratives." The newspaper as a whole is not explicitly interactive, but the letters-to-the-editor section is. Are games interactive narratives in this sense? Absolutely. The choices and decisions that game players make certainly constitute very explicit interactivity. We're getting closer to games. But first: *play*.

Play

Perhaps more than any other one of the four concepts, play is used in so many contexts and in so many different ways that it's going to be a real struggle to make it play nice with our other terms. We play games. We play with toys. We play musical instruments and we play the radio. We can make a play on words, be playful during sex, or simply be in a playful state of mind.

What do all of those meanings have to do with narrative and interactivity? Before jumping into a definition of play, first let's try to categorize all of these diverse play phenomena. We can put them into three general categories.

Category 1: Game Play, or the Formal Play of Games
This is the focused kind of play that occurs when one or more players plays a game, whether it is a board game, card game, sport, computer game, etc. What exactly is a game? We're getting to that soon.

Category 2: Ludic Activities, or Informal Play
This category includes all of those nongame behaviors that we also think of as "playing:" dogs chasing each other, two college students tossing a frisbee back and forth, a circle of children playing ring-around-the-rosy, etc. Ludic activities are quite similar to games, but generally less formalized.

Category 3: Being Playful, or Being in a Play State of Mind
This broad category includes all of the ways we can "be

playful" in the context of other activities. Being in a play state of mind does not necessarily mean that you are playing — but rather that you are injecting a spirit of play into some other action. For example, it is one thing to insult a friend's appearance, but it is another thing entirely if the insult is delivered playfully.

A quick structural note — the latter categories contain the earlier ones. Game play (1) is a particular kind of ludic activity (2) and ludic activities (2) are a particular way of being playful (3). But what overarching definition could we possibly give to the word "play" that would address all of these uses?

The Definition
How about:

> Play is the free space of movement within a more rigid structure. Play exists both because of and also despite the more rigid structures of a system.

That sounds quite abstract and obtuse for a fun-loving word like "play," doesn't it? But it is actually quite handy. This definition of play is about relationships between the elements of a system. Think about the use of the word "play" when we talk about the "free play" of a steering wheel. The free play is the amount of movement that the steering wheel can turn before it begins to affect the tires of the car. The play itself exists only because of the more utilitarian structures of the driving-system: the drive shaft, axles, wheels, etc.

But even though the play only occurs because of these structures, the play is also exactly that thing that exists despite the system, the free movement within it, in the interstitial spaces between and among its components. Play exists in opposition to the structures it inhabits, at odds with the utilitarian functioning of the system. Yet play is at the same time an expression of a system, and intrinsically a part of it.

This definition of play does in fact cover all three kinds that we mentioned previously. Playing *Chutes and Ladders* occurs only because of the rigid rules of the game — but the gameplay itself is a kind of dance of fate

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which occurs somewhere among the dice, pieces, board, and game players. Playing a musical instrument means manipulating within the free space of audio possibilities that the structure of the instrument was designed to engender. Being playful in a conversation means playing in and among the linguistic and social structures that constitute the conversational context. Play can manifest in a dizzying variety of forms, from intellectual and physical play to semiotic and cultural play.

One way to link this understanding of play to narrative and interactivity is to consider the play of an explicitly interactive narrative. The challenge for the creator of an interactive narrative is to design the potential for play into the structure of the experience, whether that experience is a physical object, a computer program, an inhabited space, or a set of behaviors.

And the real trick is that the designed structure can guide and engender play, but never completely script it in advance. If the interaction is completely predetermined, there's no room for play in the system. The author of a choose-your-own-adventure creates the structure that the reader inhabits, but the play emerges out of that system as the reader navigates through it. Even if the reader breaks the structure by cheating and skipping ahead, that is merely another form of play within the designed system.

Games

We have arrived at our fourth and final term: games. With this concept, we have a new kind of naughtiness. Play, interactivity, and narrative threatened us with overinclusion. "Games," on the other hand, needs some discipline because it's difficult to understand exactly and precisely what a game is. My approach with this concept is to define it as narrowly as possible so that we can understand what separates the play of games from other kinds of ludic activities. We are, after all, looking at *games* and stories, not *play* and stories.

The Definition

The fact that games are a formal kind of play was referenced before. But how exactly is that formality manifest? Here is a definition that separates games from other forms of play:

A game is a voluntary interactive activity, in which one or more players follow rules that constrain their behavior, enacting an artificial conflict that ends in a quantifiable outcome.

It is a bit dense. Here are the primary elements of the definition, teased out for your perusal:

Voluntary
If you're forced against your will to play a game, you're not really playing. Games are voluntary activities.

Interactive
Remember this word? It's referencing our third mode of interactivity: explicit participation.

Behavior-Constraining Rules
All games have rules. These rules provide the structure out of which the play emerges. It's also important to realize that rules are essentially restrictive and limit what the player can do.

Artificiality
Games maintain a boundary from so-called "real life" in both time and space. Although games obviously do occur within the real world, artificiality is one of their defining features. Consider, for example, the formal limits of time and space that are necessary to define even a casual game of street hoops.

Conflict
All games embody a contest of powers. It might be a conflict between two players as in chess; it might be a contest between several teams, as in a track meet; a game might be a conflict between a single player and the forces of luck and skill embodied in solitaire; or even a group of players competing together against the clock on a game show.

Quantifiable Outcome
The conflict of a game has an end result, and this is the quantifiable outcome. At the conclusion of a game, the participants either won or lost (they might all win or

lose together) or they received a numerical score, as in a videogame. This idea of a quantifiable outcome is what often distinguishes a bona fide game from other less formal play activities.

Games embody the same structure-play relationship of other ludic activities, where play emerges as the free space of movement within more rigid structures. But the fact that games are so formalized gives them a special status in this regard. To create a game is to design a set of game rules (as well as game materials, which are an extension of the rules).

The rules of a game serve to limit players' behaviors. In a game of Parcheesi, for example, players interact with the dice in extremely particular ways. You don't eat them, hide them from other players, or make jewelry out of them. When it is your turn, you roll the dice, and translate the numerical results into the movement of your pieces. To take part in a game is to submit your behavior to the restrictions of the rules.

Rules might not seem like much fun. But once players set the system of a game into motion, play emerges. And play is the opposite of rules. Rules are fixed, rigid, closed, and unambiguous. Play, on the other hand, is uncertain, creative, improvisational, and open-ended. The strange coupling of rules and play is one of the fascinating paradoxes of games.

Mixing and Matching
We've arrived at a relatively clear understanding of exactly what constitutes a game. So how do games intersect with the other three concepts at hand?

Narrative: As we observed with chess, games are in fact narrative systems. They aren't the only form that narrative can take, but every game can be considered a narrative system.

Interactivity: Games are interactive too. They generally embody all four modes of interactivity outlined in this essay, but they are particularly good examples of the third kind: explicit interactivity.

Play: Games are among the many and diverse forms of play. The formal quality of games distinguishes them from other ludic play-activities.

What does this mean? It is possible to frame games as narrative systems, or as interactive systems, or as systems of play. Whereas this seems like an obvious set of conclusions to draw, remember that the goal wasn't to place the concept of games inside some categories and keep it out of others. Armed with very particular understandings of narrative, play, and interactivity, these three concepts become frames or schemas that we can use to tease out particular qualities of the complex phenomena of games.

And it goes without saying that there are innumerable other terms we might bring to bear on the concept of games as well: games as mathematical systems, ideological systems, semiotic systems, systems of desire. It's an endless list. I chose play, narrative, and interactivity in order to shed light on the game-story. So let's get back to that important question.

Stories and Games
So. We've disciplined our four naughty terms until they've finally behaved and we've come full circle, back to the original question of games and stories. This essay began by observing a general dissatisfaction with the current state of game-story theory and practice. Perhaps it can end with some suggestions for future work.

A story is the experience of a narrative. And the dissatisfaction with game-stories is a dissatisfaction with the way that games function as storytelling systems. Remembering the concept of narrative, story-systems function by representing changes of events though pattern and repetition. This act of representation — or, we might say, signification — is how narrative operates.

So one relevant question to ask is: How can games represent narrative meaning? Or rather: How can games signify? Remember, it's not a question of whether or not games are narrative, but instead how they are narrative. And if my agenda with this investigation of the "game-story" is to inculcate genuinely new forms of experience, then we need to

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ask not just how games can be narrative systems, but we need to ask how games can be narrative systems in ways that other media cannot.

It's clear that games can signify in ways that other narrative forms have already established: through sound and image, material and text, representations of movement and space. But perhaps there are ways that only games can signify, drawing on their unique status as explicitly interactive narrative systems of formal play.

Example: Ms. Pac-Man

This much we know: one way of framing games is to frame them as game-stories. So let's take a well-known example — the arcade game *Ms. Pac-Man* (figure 13.1) — and look closely at the diverse ways that it signifies narrative.

First observation: there are many story elements to *Ms. Pac-Man* that are not directly related to the gameplay. For instance, the large-scale characters on the physical arcade game cabinet establish a graphical story about the chase between Ms. Pac-Man and the ghosts. There are also brief noninteractive animations inside the game, which appear between every few levels. These simple cartoons chronicle events in the life of Ms. Pac-Man: meeting her beau Pac-Man, outwitting the ever-pursuing ghosts, etc.

But while these story-components are important parts of the larger *Ms. Pac-Man* experience, they are not at the heart of what distinguishes *Ms. Pac-Man* as a
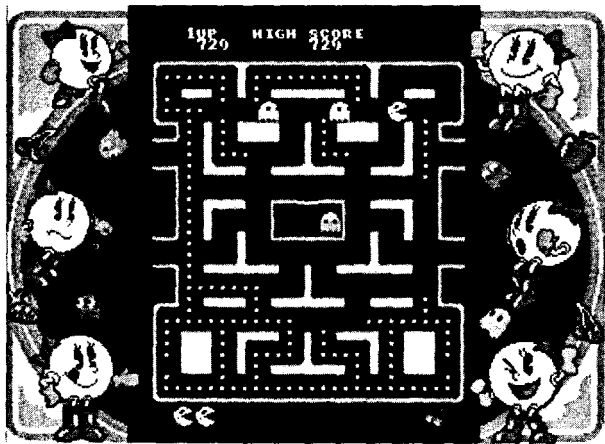

13.1. *Ms. Pac-Man.* (Namco)

game-story. The arcade cabinet graphics and linear cartoon animations sit adjacent to the actual gameplay itself, where a different kind of narrative awaits. As the player participates with the system, playing the game, exploring its rule-structures, finding the patterns of free play that will let the game continue, a narrative unfolds in real time.

What kind of story is it? It's a narrative about life and death, about consumption and power. It's a narrative about strategic pursuit through a constrained space, about dramatic reversals of fortune where the hunter becomes the hunted. It's a narrative about relationships, in which every character on the screen, every munchable dot and empty corridor, are meaningful parts of a larger system. It's a narrative that always has the same elements, yet unfolds differently each time it is experienced. And it's also a kind of journey, where the player and protagonist are mapped onto each other in complicated and subtle ways. This is a narrative in which procedures, relationships, and complex systems dynamically signify. It is the kind of narrative that only a game could tell.

Quick reminder: although I may have focused on the gameplay elements of the *Ms. Pac-Man* narrative, ultimately the player's experience of the game-story is composed of the entire arcade game. This includes not just the gameplay itself but the cabinet graphics and the cartoon animations, the sound of a quarter dropping and the texture of the joystick, the social and architectural dynamics of the arcade itself, the gender ideologies of the game and its historical relationship to the original *Pac-Man*, the marketing of the character and its penetration into pop culture at large.

But at the center of this expansive game experience is the *game of Ms. Pac-Man* — that artificial conflict with a quantifiable outcome. The gameplay of *Ms. Pac-Man* is in some sense the kernel at the center of the machine, the engine that drives all of the other elements, putting the *game* in the game-story.

And as a story, it is compelling enough to have found *Ms. Pac-Man* a worldwide audience of dedicated players. It's important to note that the "story" of the *Ms. Pac-Man* game-story certainly does not provide the same pleasures of a novel or film. But why should we expect

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it to? The question is, what pleasures can it provide that books or film cannot?

Wrap-up and Send-off

Because games are always already narrative systems, the question that weaves through this book — the question "Is there a game-story?" — is ultimately moot. Recognizing that narrative is one of many ways to frame a game experience, for me a more important question is: How can we capitalize on the unique qualities of games in order to create new kinds of game-stories? What if dynamic play procedures were used as the very building blocks of storytelling?

There are already many wonderful examples of this kind of thinking. The children's board game *Up the River* by Ravensburger uses a modular game board to procedurally recreate the rhythmic flow of a stream. And *The Sims*, a computer game mentioned often in this volume, is a game-story too. Instead of presenting a prescripted narrative like most digital "interactive narratives." *The Sims* functions as a kind of story-machine. generating unexpected narrative events out of complex and playful simulation.

But much more needs to be done. Any observation made about games, play, narrative, and interactivity could be used as the starting point for a new kind of game-story. Here are some examples that cannibalize statements I made earlier in this essay:

The concept of "narrative" casts a wide net. Many experiences can be considered narrative experiences, like a meal or a marriage ceremony. How would we make a game-story about these kinds of subjects?

Interactivity can occur on a cultural level. How could a game-story be designed with meta-interactivity in mind, so that the narrative emerged as the sum of many different player experiences in otherwise unrelated games?

Mischief is a form of play. What would a game be like that encouraged players to break the existing rules in order to form new ones?

Games are about conflict. OK, so we're drowning in fighting games. What about a game that told a story of the feints, bluffing, trickery, and intimidation of a good argument?

Yes, these are difficult kinds of challenges. But if we're going to move through our collective dissatisfaction with the current state of the game-story, it's time to rethink the terms of the debate and arrive at new ways of understanding game-stories, and new strategies for creating them.

This essay attempted to re-present some of those terms. In this painfully brief space, I have been able to do no more than gesture towards some of these new avenues. There are many more concepts in need of discipline. And the rest is up to you.

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Notes

Many of the ideas in this essay were generated in collaboration with Frank Lantz, with whom I have taught Game Design and Interactive Narrative Design for many years. Many ideas also stem from my collaborations with Katie Salen, with whom I am currently co-authoring a Game Design textbook for MIT Press.

The four categories of Narrative Interactivity first appeared in print in an essay called, "Against Hypertext," for *American Letters & Commentary*.

The definition of games presented here is loosely inspired by a definition of games presented by Elliott Avedon & Brian Sutton-Smith in *The Study of Games*. However, elements are also borrowed from Roger Callois's *Man, Play, and Games*, as well as Johannes Huizinga's *Homo Ludens: A Study of the Play Element in Culture* and Bernard Suit's *Grasshopper: Games, Life, and Utopia*.

Lastly: despite my extensive and gratuitous use of the disciplinary metaphor, I do not advocate spanking children in any context. Disciplinary activity that occurs between two consenting adults is another matter entirely. In any case don't let the bad pun distract you — the "discipline" I am talking about in this essay is a discipline: the field of game design.

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