A Functional Perspective on Narrative in Computer Games

by

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Abstract

Thanks to ever-improving technology and an increasingly diverse market, computer games have evolved into a lucrative industry and are becoming a powerful medium for creative expression. There is still debate, however, concerning whether or not computer games are suitable – or even possible – vehicles for narrative. While arguments on both sides have tended to assume a traditional definition of narrative – one based on traditional media – I have attempted to redefine narrative as it applies to computer games. Using my adaptation of Gary Fine's Frame Theory, I have analyzed three representative computer games – Riven (Cyan, 1997), Baldur's Gate II: Shadows of Amn (Bioware, 2000) and The Longest Journey (Fun Com, 1999) – in terms of their interface, game play, and storylines. Based on my observations, I have concluded that narrative in computer games can be defined as 'agency in context'. By this new definition, agency is a core element of, rather than a distraction from, narrative, and narrative plays a functional role in agency. By reframing our thinking about computer narrative and refraining from over-comparisons with traditional media, we should be able to create better – more functional and enjoyable – narrative experiences.

A Functional Perspective on Narrative in Computer Games

Teresa Blake's life had become frustrating and depressing due to a physical illness that had robbed her of her strength. Her condition continued to limit her ability to interact with the world, and her existence had shrunk smaller and smaller. Teresa no longer had the strength or stamina for lifting or walking, and had difficulty with even simple tasks such as holding a teacup. The possibility of enjoying athletic pursuits, as she once had, had diminished until it was a distant – perhaps impossible – dream.

In the fantasy world of one particular game, however, this reality could all be forgotten. In that world she could be as strong as she wanted. Her warrior alter ego was able to vanquish demons with a wide array of weaponry wielded with a strength and agility that she no longer possessed in the real world. The quest through evil, creature-infested dungeons became a fight against more than virtual monsters; it became a struggle against her own demons. Her participation in the game's story – that of a hero overcoming a seemingly unconquerable adversary – brought her on a psychological journey that paralleled and helped her cope with her real-life struggle.

Stories can have powerful effects on us. Enacted in virtual worlds, they can transport us and allow us a range of experience beyond the confines of our physical realities. [See footnotes for a list of relevant titles on this subject.[1]] They also provide us with a shared framework from which to reflect on our common experience. Narrative, as a meta-language of communication and encoded meaning, is both functional and enjoyable. It constitutes a significant part of our

entertainment space, engaging us both emotionally and intellectually and allowing us to peek beyond the boundaries of our own lives to open our minds to new possibilities.

Given the popularity and power of narratives, there is an understandable eagerness to explore the possibility of their development using the computer's ability to receive, deliver and execute instructions on data. As a vehicle for narrative, the computer's interactive technology seems to offer considerable promise, and the ability to reach people in new ways is of particular interest to communicators and artists.

Computers seem to promise a quality of narrative we have never experienced before, based on fictional worlds in which we are free to act and interact. Ideally, the result would be narrative with unprecedented engagement and emotional impact. The passive reader/viewer could become an active participant, experiencing the narrative with all the emotional weight and psychological significance associated with taking action.

Video and computer games have become very lucrative in recent years and have grown into a significant portion of the overall entertainment industry. According to the Entertainment Software Association, sales of entertainment software in the U.S. reached $6.9 billion in 2002 - a 115 percent increase since 1995. This figure compares to about $10 billion in music sales (Nielsen Soundscan), $8.7 billion on retail DVDs and $9.3 billion on movies at the box office (DVD Entertainment Group).

The links between these different industry sectors are also growing, with computer games finding a place in the marketing of major entertainment franchises. Tie-ins between Hollywood movies (*The Matrix*, *Lord of the Rings*, *Star Wars*) and the console and computer games industry are becoming standard, with coordinated release dates and plot and character

crossovers. Actors, including major stars, are lending their voices, faces and bodies to game creation. Increasingly, other artists, such as writer Tom Clancy (Books: *Clear and Present Danger, Patriot Games, Red Storm Rising,* Game: *Ghost Recon*) and music group Def Jam (*Def Jam Vendetta* – PS2/Gamecube), have also started to become commonly associated with game titles.

Now that computer ownership has become mainstream rather than the domain of technophiles, the market for computer games has broadened. The demographics of game players are widening to include a larger cross-section of the population in terms of both age and interests. According to the Entertainment Software Association (theesa.com) 50% of all Americans six and older now play computer and video games. This includes veterans of game play, new players only recently attracted to games, and children who have never known a world without computer games. All of these players bring their divergent tastes, skills and expectations to the game environment. This shift in demographics gives developers an incentive to create games with broader appeal. First person shooters still do well with the traditional gaming market – young single males – but other genres are gaining momentum. The Sims, for example, a simulation game in which players nurture characters with the goal of making them happy and successful, has recently become the best-selling computer game in history.

The game industry markets many games with the assurance that they tell stories in which the player is an integral part. The box cover of *The Longest Journey* promises the player the chance to become a character with "the power to walk between worlds," with "a destiny… foretold in a hundred tales." "As the tides of chaos gain momentum the fate of everything lies

in the hands of one person." Similarly, in *Balder's Gate* the box teases: "[T]he stakes have become much higher. Will you resist the evil within you, and forge a legend of heroic proportions? Or will you embrace your monstrous inner nature, and carve a swath of destruction across the Realms?"

Most often, however, when computer games are discussed outside the gaming world, the focus is on their kinetic play, frenetic action and violence. Rarely are they analyzed for their narrative potential, a subject still confined mostly to academic debate (and taken as a given by most players in the gaming community). Some critics go as far as to question the quality of any narrative associated with computer games and their overall value as anything more than unsophisticated, juvenile diversions. In the end, they argue, the stories games may tell compare poorly to those found in more established media such as novels and films, and any claims of interactive narrative in games are more marketing hyperbole than fact.

Do computer games tell stories? Are they truly interactive narrative? If they do tell stories, why don't they seem to tell 'good' ones? Is it a limitation of the medium, or a failure of authorship? Or is it only a perceived failure? Answers to these questions have been surprising elusive. One reason might be the inherent difficulty in analyzing any new medium, especially one that departs as significantly from what has come before as the computer does. The printed word and film are well established, both as creative palettes for narrative expression and as subjects of detailed critical analysis. It is difficult, but essential, to refrain from automatically carrying forward these modalities to the analysis of computer games without first assessing their validity for that purpose.

Reviewers of computer games tend to include several standard criteria for evaluation: multimedia elements, game play, and story. Multimedia elements include graphics, sounds, musical score, and special effects. Game play refers to the visual (on-screen) and physical (input device) interfaces, as well as perspective and difficulty. Story refers to characters, plots, and other story elements. Overall scores take all these elements into account with varying emphasis depending on the reviewer's target market and personal biases.

Statement of Problem

In order to undertake an analysis of narrative in computer games, we need to begin by asking some basic questions. How is narrative created in a computer game, and how does it relate to game play? How does the player experience it, and what is the process that forms player experience? And finally - and most fundamentally - how do we define narrative in this new medium? Answering these questions will provide us with the framework from which to speculate about what makes good narrative in a game, an issue of interest both to critics and to developers working within the medium.

Surprisingly, the question of narrative in games has not yet been the subject of much investigation. This deficiency can be attributed in part to the difficulty in positioning the subject within a particular academic field. Until fairly recently, there was no logical home for computer game study and those who wished to pursue it could find themselves in one of several departments including literature or film studies, media studies, or computing science. The establishment of new university courses and programs, such as *The History of Computer Game Design* at Princeton, *Simulation and Gaming* at Indiana State, and a Masters of Arts program in Computer Games at Northumbria University in the UK, along with the publication

of more books and professional trade publications such as *Game Studies* (gamestudies.org), *Game Research* (game-research.com) and *Gamasutra* (gamasutra.com), is beginning to enable a much greater degree of information sharing.

The academic field of Game Studies, like the game industry itself, is now starting to attract more attention. Exploration of the issue of narrative in games, however, has centered on theoretical debate, and very little direct research has been done. It seems that a more quantitative examination is warranted – not just of the 'texts' (software), but also of the player's experience of them. By including user perceptions in our explorations of narrative's role in computer games, we may be able to define more useful, and accurate, parameters for its study.

Review of Literature

An examination of the literature on narrative in computer games should begin with Janet Murray's 1997 book *Hamlet on the Holodeck: The Future of Narrative in Cyberspace*. Though not the first work on this subject – Brenda Laurel's book *Computers as Theatre* (1991) approaches the subject from a dramatic rather than a literary perspective – Murray's treatment has provoked thought and discussion since its publication. Murray, who is currently at Georgia Tech's School of Literature, Communication and Culture, and was formerly director of the Program in Advanced Interactive Narrative Technology (PAINT) at MIT, was one of the first to approach the question of narrative in computer games from a perspective non-specialists could understand and relate to. Her ideas, with both supporters and critics, have arguably become the standard point of departure for the analysis and discussion of narrative in computer games.

The word Murray uses to describe narratives on computers (including those in computer games) is *cyberdrama*. She (along with others sharing her perspective) sees the computer as a promising tool for the creation of participatory narratives in which the viewer becomes empowered to interact with the fictional world. This viewer, likely enacting the role of a character within the story, is able to become deeply involved in the fiction and shape the experience as a whole by influencing the story's plot and characters. The experience would be much like that of reading a novel or watching a movie, but without the viewer being relegated to the sidelines. Although the details of the final experience would be left to the computer and the participant, the cyberdrama would still retain the inspiration and direction of a human author. The author, by creating and constraining content and computer programming, would ensure that the experience as a whole retained the consistency, coherence and depth we expect of other narrative forms.

The literature on cyberdrama from Murray and others (including Barbara Hayes-Roth (1998) and Andrew Stern (1998)) tends to focus on two elements necessary to its success: the creation of believable computer characters and the development of a storytelling computer A.I. (artificial intelligence). At their core, they argue, all narratives are built upon the interaction of characters, and strong and meaningful stories require equally strong characters. These characters must interact believably with each other, and with the participant, while acting within the constraints of the story as a whole. Even more fundamentally, though, cyberdrama requires computer AI: a story controller that enables the user to act freely within the fictional world and yet is able to direct the overall action. The game is programmed with the ability to

control the direction of the plot and non-player characters enough to ensure that there is a climax, a resolution, and a satisfying ending.

Thus the goal of cyberdrama is essentially a computer-enhanced version of narrative as it already exists. The vision of Janet Murray is succinct and earnest: "I am asking if we can hope to capture in cyberdrama something as true to the human condition, and as beautifully expressed, as the life that Shakespeare captured on the Elizabethan stage" (Murray, 1997, p. 274). And from Barabara Hayes-Roth: "My artistic premise is that we should strive for an interactive story experience that achieves for the participant the same artistic goals achieved by the great works of fiction in the traditional media of books, films, and theater: Joy…, Rapture…, [and] Enlightenment..." (Hayes-Roth, 1998, p. 12).

As convinced as its supporters are, however, cyberdrama also has its critics. Some, based on concepts in Narratology (the study of narrative), argue that the term 'narrative' must, by definition, include a narrator (or implied narrator) and a narratee or narratees. "So a mere story is not sufficient to make something a narrative, as there must also be a narrative situation implying the presence of narrators and narratees" (Eskelinen, 2001, p. 3). Furthermore, they argue, the term cannot be applied to something enacted and constructed in real-time, but requires that a distinction be made between the time frames of the events described and their description. In fact, one of the primary functions of narrative is to construct one time frame from within another (Eskelinen, 2001).

Computer games must necessarily break from this temporal relationship during times when the participant acts. The narrator/narratee relationship becomes impossible as story time collapses into the present; interactivity cannot, therefore, coexist with narration (Poole, 2000;

Juul, 2001). From this perspective, games with undeniably narrative elements, such as the cut-scenes inserted between action sequences, simply jump between one form (the game) and another (video or textual sequences). The result is not a game narrative, but rather a lamination of the narrative text onto the kinetic action of the game.

Evidence of this critical problem can be seen in the failure of games to tell compelling stories that include the depth in characters and in plot that we expect from existing forms (Darley, 2000). Moreover, narrative often seems an unnecessary, perhaps even disruptive, addition to the pure action of the game, inhibiting player agency and forcing an artificial structure onto the game play (Poole 2000; Darley, 2000). Ultimately, these critics point out, computer games with strong game-play and weak or even non-existent narratives find popular success, while those with strong stories and weak game-play are unlikely to attract players.

Another school of thought, disagreeing with both cyberdramatists and their critics, see both arguments as based on a restrictive, and possible inappropriate, conception of narrative. New Media theorist Lev Manonvich points out that "[i]nstead of narration and description, we may be better off thinking about games in terms of *narrative actions* and *exploration*. Rather than being narrated to, the player herself has to perform actions to move narrative forward—talking to other characters she encounters in the game world, picking up objects, fighting enemies, and so on" (Manovich, 2001, p. 247). Narrative, as we normally conceive of it, is dematerialized in favor of the navigable database and algorithms of interaction.

"Narrative actions" and "exploration" imply a different category of narrative expression based on criteria more appropriate to the new medium of the computer game. "Those who deny narrativity to games on the ground that the point is to play, not to hear stories nor to produce a

trace readable as narrative adhere to a narrow interpretation of the word ‘is,’ an interpretation that reduces the possible modes of participation of a text in a narrative representation to the traditional modes of literary narrativity” (Ryan, 2001, p. 13).

Perhaps computer games as narrative forms are virtual until they are enacted. "What justifies us in calling movies and drama narrative is the shape of the mental representation formed in the mind of the spectator; if this spectator were to translate his mental image into language, he would produce an act of narration - a diegetically presented narrative. A dramatic narrative is thus a virtual, or potential diegetic one" (Ryan, 2001, p. 13).

Another important criticism of the cyberdrama concept is that it depends on our ability to program A.I. sufficiently powerful to create well-formed narrative during the course of game play – a goal which many believe may simply be unattainable. (Bringsjord, 2001) Without A.I. of this caliber, they wonder, how can we assume a consistent story will result when the unconstrained player cannot be expected to act with any consistency or predictability? The tension and conflict resulting from character and plot development as conceived by the author require specific actions that the player may or may not be prepared to deliver.

If, for example, an author intends an experience to be a tragedy along the lines of Hamlet, but mid-way through the action the player decides it should be a romance, is it possible for the programming to accommodate such a change and still produce a cyberdrama of the quality and depth of the Shakespearean play? Given that no author in a traditional medium is asked to create in such detail while managing unpredictable elements, it may be unrealistic to expect just that of future game technology.

Does a computer game have to be cyberdrama in order to deliver compelling narrative? When we assume Hamlet is the goal, are we not confining ourselves to preconceived notions of what is commendable and valuable? The concern over the potential capacity for computer AI to guide game characters and developments becomes a non-issue when we abandon the requirements for both well-formed plots and complete player freedom. The question should be how games deliver narrative rather than whether they meet an inapplicable standard of it.

The task then remains to put forward a definition of 'narrative' that fits the medium, keeping in mind that concepts such as narrative structure, the role of the participant, and the authority of the author – as well as the relationships between them - will need to be redefined.

In terms of these relationships, computer games - despite the fact that they are often played alone by a single player – bear more resemblance to other forms participatory entertainment (role playing games, for example) than they do to more passive media such as books or films.

Central, then, to defining (and evaluating) narrative in computer games is an understanding of the player experience. Observing how a person navigates through a game, processing information and acting on it, should be the first step in developing a model for analysis. Where the current literature fails is in providing a sufficient observation-based explanation of the process of narrative creation within the framework of a game.

Methodology

To that end, I choose three representative games, played them, and recorded the process. The games chosen were: *The Longest Journey* by Fun Com, written and produced by Ragnar Tørnquest and released in 1999 (2000 in North America); *Riven* developed by Cyan, produced

by Rand Miller, designed and directed by Robyn Miller and Richard Vander Wende, and released in 1997; and *Baldur's Gate II: Shadows of Amn* developed by Bioware, executive producers Ray Muzyka and Greg Zeschuk, and released in 2000.

I chose the games based on reviews (scores and reviewer opinions) on three gaming web sites: The Adrenaline Vault (avault.com), Games Domain (gamesdomain.com), and GameSpot (gamespot.com). I selected games representing a range of playing styles, giving preference to those reviewed as having strong stories. They also reflect more recent technology (c. 2000) and had a demonstrable popularity, as measured by commercial success.

The Longest Journey was winner of GameSpot's 'Best Story' and 'Best Adventure Game of Year' categories in the site's "Best and Worst of 2000" awards; it was also a nominee in the 'Best Graphics' category and for 'Game of the Year'. It received overall game ratings of 9.3/10 from GameSpot and 4.5/5 from Adrenaline Vault. Other computer games with similar styles of game play include *Grim Fandango* (1998) and *Escape from Monkey Island* (2000).

Reviewers of the game said: "The story is the best I've experienced, the plot is deep and original, and the characters complex and real" (Daigle, 2000, p. 4). The "…graphics, sound, music and gameplay all mesh in near-perfect unison to create one of the single most immersive and addictive adventure offerings, ever" (Stewart, 2000, p. 5). "The Longest Journey is one of the best adventure games in years… it tells a great fairy tale filled with characters that you'll remember long after the game is over" (Dulin, 2000, p. 1).

Riven is the sequel to *Myst* (released in 1994), which is the second best selling PC game of all time (eclipsed as top seller in 2003 by *The Sims* (2000)). *Riven* includes the same game play as Myst, but with improved graphics and a more detailed story. It was given a 7.8/10 rating by

GameSpot and 4.5/5 by Adrenaline Vault. Other games with similar game play are *Myst* (1994), *The Crystal Key* (2000), and *Myst III: Exile* (2001).

Reviewers of *Riven* said: "This game is somewhere between a simulated world and a novelesque study of culture and legend. A full-featured mythology was researched and developed for this title, and it allows you to carve away your own perceptual position" (Thomas, 1998, p. 1). "Riven's markedly improved graphics and sound further enhance the ambiance and make Riven even more immersive than its predecessor [Myst]"(Sengstack, 1997, p. 2). "Riven is all about: exploring a new world full of unique beings, organic machines, and family intrigue… [I]t's a leisurely paced, all-encompassing, mentally challenging experience"(Sengstack, 1997, p. 2).

Baldur's Gate II: Shadows of Amn is the sequel to the original *Baldur's Gate* released in 1998. The new version features improved game play and more detailed character and story development. It was a nominee for Best Story and for Game of the Year in GameSpot's "Best and Worst of 2000" awards. It was given an overall rating of 9.2/10 on GameSpot and 5/5 on Adrenaline Vault. Games with a similar visual perspective and game play include *Diablo* (1997) and *Icewind Dale* (2000)

Baldur's Gate has, according to reviewers, "…superb – and I rarely use the word 'superb' – story scripting, freedom to play various roles including evil alignments, deep NPC [non-player characters] interactions… result[ing] in rich, well-paced, thoughtful quests and addictive gameplay" (Zierler, 2000, p. 5). "Plenty of character options make it possible to create just about any type of protagonist imaginable, and yet the game adapts to the choices that the player makes" (Plumb, 2000, p. 3). "The game has a great story, good dialogue, highly

sophisticated combat, meaningful decision-making, memorable characters, and plenty of replay value" (Kasavin, 2000, p. 2).

I played each game from beginning to end, taking notes throughout. I attempted to reproduce a realistic player experience, including using saved games, walkthroughs, and detailed step-by-step puzzle solutions when necessary. After having played the game through, I replayed them from key save points in order to examine other possible variations of critical decisions (e.g. to examine different possible endings).

During play I recorded where my focus was: on operating the game, learning the rules, understanding the interface, performing my character's actions, or following the story. I considered all materials, including introductory video clips and reference material in the form of text-based manuals or online help, to be part of the game play experience.

I recorded the details that made up each story (objects in the environment, my actions, other character's actions, etc.) as well as my perceptions of game play. I noted the times when a story was being told to me, and when it seemed I was creating it through my actions or imagination. I gave special attention to the times when I felt I was drawn into the narrative, when my attention was held, and when it strayed. I recorded any details that seemed to explain these experiences. I also noted my impressions and memories right after playing, a week later, and again several months later.

After collecting these observations, I compared my experiences of the three games, noting the commonalities as well as the differences. To analyze the results I adapted Gary Fine's cognitive frame analysis, originally used to study role-playing games. The computer game

environment is similar to that of role-playing games (social gatherings where the player enacts a character within an imagined world moderated by the dungeon master or game manager).

In his book *Shared Fantasy* (1983) Gary Fine uses social theory to describe games as interactions within a bounded set of social conventions. Fine – currently at Northwestern University – has written, contributed to, and edited a number of books on social psychology and social theory. He adapts the concept of frame analysis, as outlined by Erving Goffman, to describe how different perception frames, or concepts of self, are experienced by the player during the course of game play. Fine discusses the relationship between player identities, as well as the stability of the frames, as based on the level of engrossment, and I found his model well suited as a framework for describing perceptions of game play.

Perception frames describe the player's perspectives on a game during play. As such they are subjective and variable, adapting to shifting contexts and to changes within the player. Frames are a way for the player to sort and organize information about the current circumstances, providing cues about how to act or respond. Just as people may see themselves differently, and act accordingly, in response to a variety of situations in day-to-day life, players can adjust to accommodate a number of different roles during game play, either switching between perspectives or existing in them simultaneously.

There are three frame-sets that describe the player experience: the *person/world frame*, the *player/game frame*, and the *player-character/fiction frame*. These categories correspond to the three frames that Fine observed and describes in role-playing games.

The *world frame* includes the real world as the person perceives it, including an understanding of objects and interactions in the world. The *person frame* is a subset of the world frame and includes all of the details of how a person sees their place within the world.

The player/game frame-set is a subset of the person and world frames. The *game frame* constitutes all the things that a person sees as part of a particular computer game including the rules and processes necessary for the play of the game. The *player frame* is a subset of the person frame, including all the elements of being a player and describing the person's self-perception as an agent interacting within rules of the game.

Imagine someone playing Tetris or Solitaire. He is both a person in the world and a player in a game. In the *person/world frame*, he is aware of his needs (hunger), desires (escape from work), responsibilities (get back to work), as well as his physical location and surroundings (other people nearby, sound of the printer). In the *player/game frame*, however, he is focused on - and responding to – on-screen information that will allow him to compete against, solve, or complete the game. He is aware of the game's rules: that only certain actions are permissible and that of those only a few will result in desired outcomes. While he is playing he concurrently retains an awareness of himself within both contexts, adjusting his behavior as his focus shifts between these perspectives.

Many computer games, unlike Tetris, present a more complex context for play. The *player-character* and *fiction frames* describe what a person perceives as a virtual world created within a game. The fiction frame refers to the fictional world of the game, and the player-character is the enacted alter ego of the player within that fictional world (though not completely so, since a portion of that character is provided by the fiction itself). Diagram 1 is

my illustration of the model of frame-sets and the relationship between them as they occur in computer games.

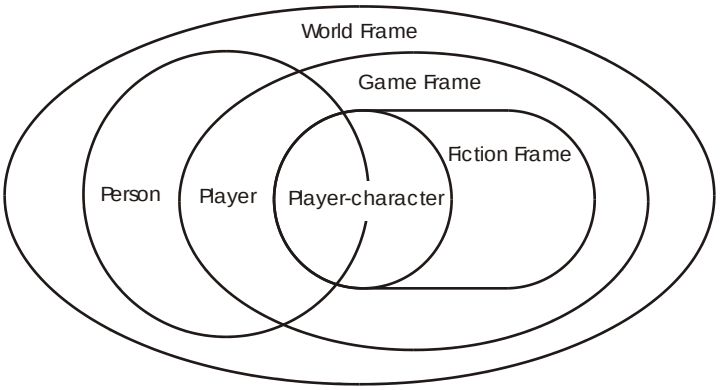


Diagram 1: Frames of perception during game play

A sequence of play in Baldur's Gate, for example, engages the player on each of these levels. In the person/world frame it requires a physical response: click space bar to stop action, move mouse to make selections, observe changes on the screen, click on space bar to restart action. In the player/game frame, it requires a game-level understanding: choose the icon of the adventurer with the best combat points and highest remaining hit points (a function of the remaining life of the character), select the icon with crossed swords to put the game into combat (instead of talk) mode, choose the representation of the creature to attack. Finally, there is the player-character/fiction frame: Gachtor rushes in, with magical battle flail in hand, to face the dragon threatening to devour them all. This is certainly the same dragon that has killed so many of the townsfolk.

These three frame-sets are based on the player's perception and are by no means static or mutually exclusive. The player exists in all three at once. How the person ultimately recalls the game experience, however, will tend to be the result of the player's engrossment within a

particular frame and will normally result in memories sorted and distilled from play divided into the separate frames.

Analyzing my results using modified perspective frames provided me with a context for game narrative in which I was able to answer my questions: What is narrative in computer games; How is it created; How does the player experience it; and How does it relate to game play.

Findings

Game Description of The Longest Journey

April Ryan (player character) is a young woman who has recently moved to the large futuristic city of Newport to study art at a local college. April seems normal enough, except for the dreams and visions she has, which lead her on a quest to the pastoral world of Arcadia. On her adventures she learns that Arcadia is the chaotic, magical counterpart to the world she has been living in: the scientific, orderly Stark. As a 'shifter' – someone with the unusual ability to travel between the two worlds – April begins to unravel the mystery that threatens both Stark and Arcadia. In the end, she triumphs over the forces of greed and evil and restores the balance between the worlds.

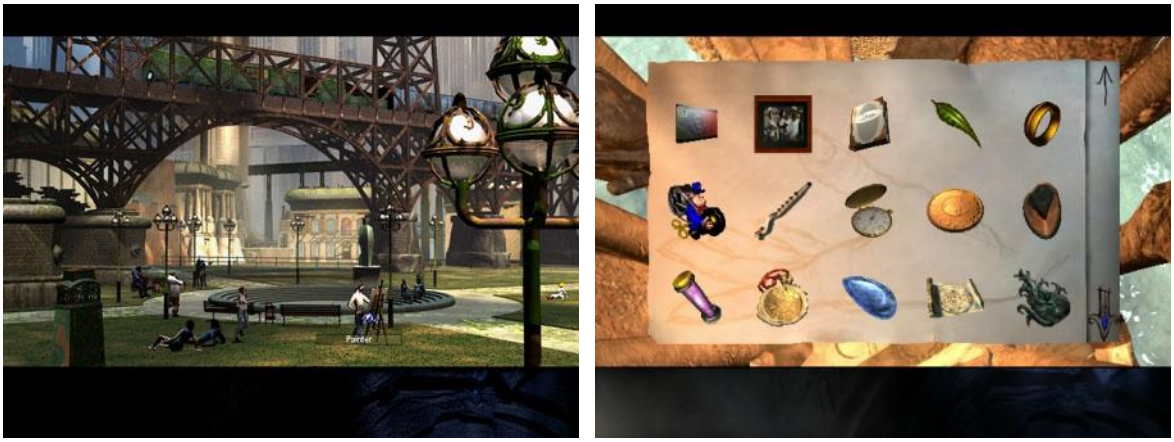
The Longest Journey has pre-rendered and fixed backgrounds that the player (through a moving representation of April) can navigate by using the mouse to point to desired locations. Mouseovers provide navigation information. A red eye indicates that a description of an area is available (with a right click), while a red arrow indicates that April can travel in that direction to a new area. Moving to a new area brings up another pre-rendered background of the next

location. The mouse is used for the majority of game play: the left button to move and select and the right button to access a menu of other actions including *look*, *talk*, and *use object*.

The Longest Journey – Left image is from April's dream that functions as a tutorial to start the game; Right image shows an example of dialog in the game.

Dialogues with other characters are created through menus of multiple-choice options appearing on screen as text and duplicated as audio. An inventory of items can be collected and stored in April's bottomless pocket. Objects can be used with each other, but combinations are limited to a few prescribed by the game as part of puzzles or small quests that advance the gameplay.

The many dialogues between April and the characters she encounters provide the bulk of plot development. Some additional information and character development are also supplied through the comments April makes when the player attempts to do something (for example, have April 'look' at an object). The story also unfolds through April's actions, (directed by the player), as she moves from place to place solving puzzles to move to new locations. Finally, there are also several rendered 3D cut-scenes between the main 'chapter' sections.

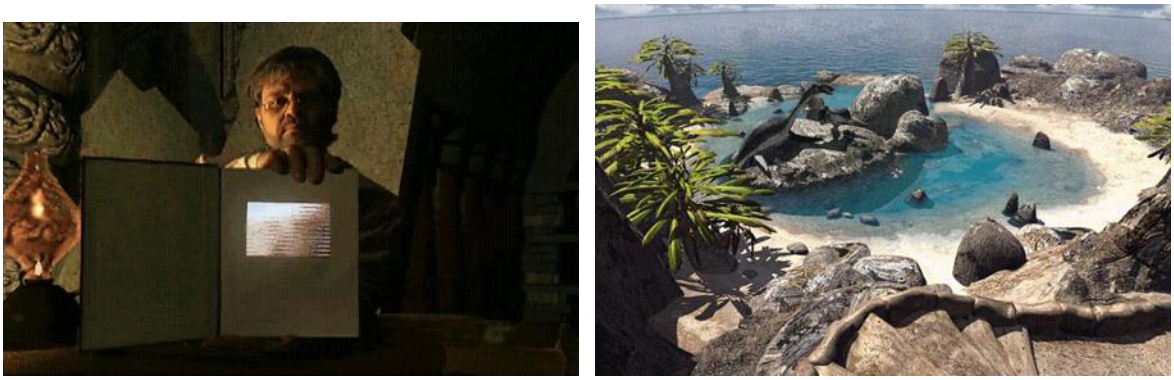


The Longest Journey – Left image shows a park in Stark; Right image shows a selection of collected objects.

Game Description of Riven

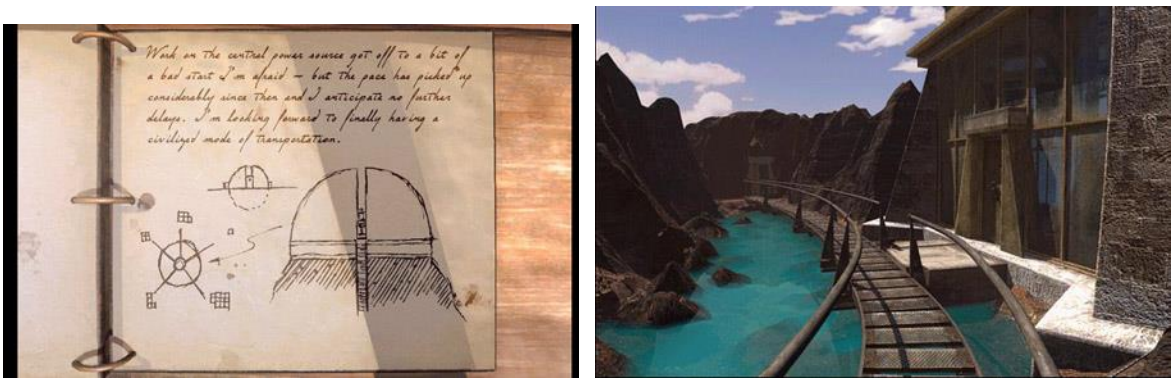
Riven is a created world, unstable like its creator, Gehn, and doomed to self-destruct. Gehn seeks an escape through the linking-books that allow people to move from land to land. To that end, he takes hostage the wife (Catherine) of his son, Atreus, who has the power to send a linking-book to rescue her and the inhabitants of Riven. Atreus, rather than taking the risk himself, sends 'you' (the unnamed player) to Riven to find Catherine and trap Gehn in a false linking-book.

You travel there and slowly learn how to move between the islands and operate the machinery Gehn has built. By finding and using Gehn's lab journal, and through the assistance of some of the locals friendly to Catherine, you are able to find Gehn and trick him into the using the book. You then free Catherine, who rescues the other inhabitants and escapes with Atreus (who appears just before the islands self-destruct) through a linking-book into another place. You are freed by falling into the open of the void where the fabric of Riven breaks apart.



Riven – Left image: Atreus gives instructions as the game starts. Right image: Strange creatures rest on some rocks before swimming away in one of Riven's animated sequences.

The perspective in Riven is first person. Views are life-like and presented in a slide-show style in which movement (forward or turning) will flip to the next motionless view. The interface uses simple point-and-click mouse control for movement and object manipulation (push buttons, pull levers, turn valves, and so on). The cursor changes shape to indicate which type of action is possible. Only a few items (the false linking-book and some diaries and notes) are available to add to the player's inventory. Nothing can be done with these items except to read them or, in special circumstances, give them away.



Riven – Left image: Gehn's laboratory notebook provides clues to the operation of machinery on the islands. Right image: Walkway outside Gehn's lab.

There are two primary sources of detail in Riven: video and text. In the beginning, Atreus explains, presented in video form, what has happened and what you need to do. Near the end of the game, there are more video segments featuring Gehn and Catherine. The plot as revealed through text is framed as journals and letters by Atreus, Gehn and Catherine. These text sources provide most of the detail about what is happening in Riven. The bulk of the story's action (and length), however, is the chronicle of the player's movement around and between the islands in an attempt to solve the variety of puzzles and access locked or hidden places.

Game Description of Baldur's Gate

Interested in extracting the hidden supernatural powers of Gachtor (the player-character chooses the name of the main character) and his half sister Imoen, an outcast elf named Irenicus and his undead sister, Bohdi, imprison them to extract their immortality. They escape, but Imoen is taken prisoner for engaging in illegal magical activities. Gachtor leads a quest to find and free her, taking a handful of fellow adventures on a number of quests through the city of Athkatla and surrounding area.

The search for Irenicus and Imoen leads to a wizard's enclave on an island where, through the betrayal of one of the adventures, Irenicus and Bodhi are able takes what they want from Gachtor and Imoen and then leave them for dead. The quest turns into a search for Irenicus and his sister to recover those powers before Gachtor and Imoen die. Adventures through undersea and underground worlds finally end in the city of the elves where a great battle ensues over the Tree of Life resulting in the eventual defeat of Irenicus. Though successful, Gachtor is killed and must face one final trial in the place between life and death to vanquish Irenicus once and for all.

Baldur's Gate uses an isometric (bird's eye) view of the ground and characters. The ground - including trees, buildings, and rocky areas - is pre-rendered and scrolls underneath the characters when they attempt to move off the edges of the screen.

Baldur's Gate – Left image: Outdoor scene featuring some magic effects; Right image: An underground encounter with a dragon.

The interface is accessed through the mouse and keyboard with icons and visual clues to control multiple characters - including the main character - within the adventure party. There are a wide variety of possible actions for each of these characters including talk, sleep, fight, cast spells, pick up objects, drink, and identify an item. Character actions are accessed through menus or combinations of icons and mouse clicks. A large variety of objects can be picked up, carried and used, and it is possible to freeze the action to provide an opportunity to give orders to the avatars for combat, moving inventory, and examining objects.

Baldur's Gate – Left image: Object inventory for a character; Right image: Map used to travel between areas.

The story in Baldur's Gate begins with the user manual, which contains background information about the city and the world around it as well as information about some of the characters that may be encountered. Cut-scenes, rendered in the same perspective as the game play, take the form of dream sequences occurring when the main character stops to sleep. Narrated sections, accompanied by scrolling text, separate the five chapters of the story.

Much of the story comes from dialogue with the numerous creatures and characters encountered, with more information contained in the books, notes and journals available to be found. Additional details are provided through written object descriptions, and some character development occurs through a few spontaneous (game-initiated) monologues and dialogues. Finally, much of the story is created by the many actions and choices on the part of the player.

Analysis

To understand the development of narrative in these games, I have chosen to analyze them primarily in terms of my relative engrossment in the three perception frames. Each game was different in that regard, and all varied considerably throughout the course of play.

On the most basic level, the interface, as the bridge between the computer and player, plays a fundamental role in how the frames are experienced. Interacting with a virtual world through an input device and a graphic interface means an inevitable gap between will and action. No current (or foreseeable) game interface can even approach the absolute transparency of a real-world mode and range of input possibilities. The player's engrossment in the fiction frame is, however, effected by its relative transparency. Any difficulty in operating the game interface, on either a physical or game level (if, for example, the icon structure is too complicated or the required mouse control is too difficult) can divert the player's attention away from the fiction frame.

Riven's interface was simple from the very beginning of play. The use of the mouse pointer was intuitive and there were only a few symbols and very basic game-play to understand. The much greater complexity of Baldur's Gate's interface was initially much less transparent because of the large number of icons and menu screens used to control multiple characters. There are, for example, 130 symbols representing possible character states such as 'diseased', 'fatigued', 'poisoned' and 'blinded'.

Once I learned the interface better, however, the extra complexity in Baldur's Gate became in many ways more transparent because it allowed a more natural range of possible actions. Within a few hours of playing Riven, on the other hand, the interface's simplicity became somewhat frustrating because it inhibited my ability to act as I wanted.

Even after Baldur's Gate's icons and actions became manageable (and therefore more transparent) during leisurely paced play, they could rapidly become overwhelming when the rate of play increased. For example, during large battles in Baldur's Gate, the volume of

information and number of responses required proved unmanageable in real-time. I had to pause the game frequently in order to sort through the actions characters were taking, what was happening to them, and how I needed to respond. Interpreting the icons and understanding the required sequence of commands took my full attention.

The interface was an important bridge between the game and world frame requirements on me as a player and my ability to successfully focus on the action (or the perception of action) within the virtual world. The level of engrossment within the fiction frame, and therefore the relative strength of the frame was, however, more critically based on my perception of agency.

The term 'agency' refers to the ability of the player-character (agent) to act within the game environment. The degree of agency in a game – or in any given moment of a game – can be expressed in terms of granularity and range.

The range of agency refers to the number of different aspects of the player character under the player's control. Riven for example, offers a limited range of options: moving around, manipulating selected objects in specific ways (pulling, pushing, twisting), and reading books. Baldur's Gate allows a much greater range of agency including, among others, the ability to move, fight, talk, sleep, examine objects, read books, cast spells, and heal other characters.

In Baldur's Gate, although the characters were fairly simply rendered, I felt a sense of control and ownership because I was able to customize their appearance, clothing, and voices. By contrast, I felt much less ownership of the beautifully rendered (and more complexly written) April character over whose appearance, voice, and temperament I had essentially no control.

Granularity is a measure of how fine the player's control is over the range of aspects of the player-character actions, and how much of the control is shared - or assumed by - the game/computer. Riven has a low granularity of movement, with movements being forced into discreet leaps from one position to another without the possibility of moving to a position (or viewpoints) in between. Baldur's Gate has a higher granularity of movement, as the player-character can be chose a position essentially anywhere within the current area. Even in Baldur's Gate, however, control over movement is somewhat limited since the player only determines the destination of a particular move while the computer controls the actual movements and selects the path.

The different ways in which dialogue is presented and executed in the games illustrates the influence of granularity on game play. The Longest Journey provides the player with control over the sequence in which April asks questions and makes comments, but rarely provides options for tone or content. Baldur's Gate provides a higher degree of granularity by structuring dialogue sequences with flexibility and a range of responses from meek to aggressive or good to evil. Although conversations in both games are technically similar, my sense of agency was much stronger in Baldur's Gate because I had a genuine choice of how to respond and a sense of ownership and responsibility in shaping the player-character's interactions.

Because low granularity and range often caused a frustrating sense of limited – or even lack – of agency, it might seem obvious that higher levels of both would be desirable. If granularity and range could approach life-like levels, the result would, or course, be a sense of life-like agency. Even if it were possible, however, such verisimilitude, while undoubtedly

producing excellent computer simulations of real life, would be unlikely to lead to satisfying experiences in game play.

In Baldur's gate, as interesting as the quest to save Nalia's family at de'Arnise Hold was, I would not have wanted to experience every step, meal, and eye movement on the way there. Even having to walk back and forth in The Longest Journey to find quest items and dialogue triggers quickly became frustrating as I clicked the mouse pointer on each spot and watched April amble toward it. To shorten the wait, I often ended up double clicking to have her run, even though the context rarely called for it and it was visually jarring.

Part of what makes fictional presentations and condensed experiences enjoyable – often more so than real ones – is that they can compress time and space, allowing us to experience what is interesting or exciting without dwelling on the mundane. Most computer games do just that, but such a framework necessitates inconsistent levels of agency, something that can be critically disruptive to the player's engrossment in the fiction frame.

A player, having learned the rules of a game, expects those rules to remain constant. Any change can jar the player's focus back to the world frame. Similarly, a player-character expects the rules within the fiction to be consistent. Since virtual worlds are made – for the most part – to resemble the real world, players naturally expect a high degree of consistency between the workings of the fictional space and of the world. They expect their abilities and physical limitations once established to be consistent, with a reasonable explanation for any changes. When a player-character's agency changes without explanation, the player's attention is drawn away from the fiction frame and into the game and world frames.

In The Longest Journey, for example, my engrossment with the fiction frame suffered when it proved impossible at one point to go to a subway station that I (through April) had previously visited. This limitation did not make sense within the logic of the world (one of the stations, in fact, was in an area where April lived). Without any explanation for it, there was no way to interpret this limitation as anything other than an arbitrary requirement of the game, and so it drew me into the perspective of the game frame.

If granularity and range are not necessarily desirable at life-like levels, but at lower and inconsistent levels are detrimental to a player's sense of agency, how is a satisfying gaming experience – one in which the player is engrossed in the fiction frame – even possible?

What made it possible in these games was the context in which the agency was enacted, which maintained my engrossment in the fiction frame despite limited granularity, range and consistency.

Because the fiction frame acts as a pseudo world frame, appropriate evocative world-based triggers (the sound of wind in the background, a heartbeat, birds singing, etc.) encourages engrossment with the fiction frame rather than with the game frame. And because the game's context - from the music, sound effects and graphics to dialogue, character development and plot – draws on the world frame, simple, repetitive player inputs can be made to seem like a wide range of actions. The result is a perception by the player that there is far more variation and choice than actually exists. For example, in The Longest Journey, a single player action sequence (click left mouse button on first object, move pointer over second object, click left mouse button) is used to construct the illusion of a wide range of possibilities from mixing a

potion, fixing a broken watch or patching a deflated rubber duck, to catching a worm in a flour sack with a piece of sticky candy snuck from a jar.

In general, The Longest Journey has a relatively simple interface, with attention paid to blending it into the logic of the story world. For example, the player can "look" at items (point and click an icon of an eye) to get a description of them. This description is rendered in April's voice and often reveals colourful aspects of her character along with additional information related (or even tangential) to the object being viewed.

The Longest Journey – Eye icon (middle of screen, just above the bottom) is used to 'examine' objects without actually interacting with them.

With the logic behind actions and reactions carried over from the world frame (with variations and exceptions according to genre and the individual game), the player expects cause and effect to be preserved within certain parameters. Without reading any instruction manuals, the player immediately knows what to do with, for example, a key. It can be inserted into a lock and twisted. The lock will then either open or not. A key is usually associated with something valuable, and always associated with one or more active agents (to operate and

possess the key). Since it may lead to something of value, it may be desirable to find or have, not only to the player-character, but possibly also to other characters.

In order to maintain player engrossment with the fiction frame, the context should support agency rather than merely simulating it. Actions should seem meaningful to game play, and any information gathered should seem relevant. In The Longest Journey, dialogue sequences with other characters were easy to use and therefore quite transparent during the first part of the game, blending smoothly into the plot. My perception of them began to change however, when I discovered that the content of these dialogues was of little direct use to me. It became clear that the game simply required me to select a certain segment in order to activate a new area; failure to do so meant that I would need to go back through previous conversations to find the one segment that I had missed. Whether or not I had already figured out a piece of information (which often happened through clues, foreshadowing, and previous conversations), I still had to ask about it whenever possible or the game would not progress. I began to perceive dialogue as a potential trigger for game events rather than as part of the plot or character development, and to feel that rapidly selecting every possible option to make sure none were missed was the best way to advance. In other words, every time dialogue was an option, I would approach it from the player/game frame rather than from the fiction frame. My actions were either meaningless or only meaningful in a game sense. What was said did not have an impact beyond that moment, and nothing could be chosen (or not chosen) that would change the ultimate result.

In Baldur's Gate, on the other hand, it is possible to initiate a dialogue with just about any visible character, and the resulting responses range from "They appear too busy to talk" to

critical quest information. Understanding and applying information imbedded in these dialogues was often key to progression, and many quests and could be triggered and executed at different times and in a variety of ways, leaving the game mechanics far more transparent and allowing the player's focus to remain with the player-character and the fiction frame.

Similarly, in a schoolroom in Riven, the player discovers an educational toy for learning the D'ni's counting system. The player is able to play with the toy and learn, gaining information to use in later puzzles. Here also, the context supported and enhanced my sense of agency.

Riven – Left image: The school room in the village on Riven; Right image: This is a simple game. Click on the handle and it spins a wheel stopping at a random character (seen in the base). The little man is then lowered a certain number of notches (corresponding to the symbol). Click again and the other side is lowered until finally one player is snapped by the fish mouth on the base. This is not only a clever children's game, it also very useful to learn D'ni numbers.

More directly, the game's context can compensate for limits to agency by providing explanations for them. Technology, time, and space constraints (as well as the making of a coherent story) preclude unlimited agency. The player-character in any game will soon run into inaccessible areas, but buildings can have corridors, rooms can have walls, doors can be

locked, and forest paths can be blocked (as in Baldur's Gate) with rocks and fallen trees. Limitations can also be explained through the 'will' of the player-character. April, for example, gives reasons why she does not want to go to certain places or do certain things, making comments such as "I don't want to do that right now," or "That doesn't look safe."

A well-constructed context can maintain player engrossment in the fiction even during total suspensions of agency. Even occasional complete loss of control was not disruptive when a clear rationale was presented or implied.

In Baldur's Gate, for example, there are a few cut-scenes that occur as dream sequences while the characters are asleep, and in Riven player control is frozen during transports between the islands. The key in these cases was that my player-character was logically unable to act, and inaction was therefore consistent with the rules of the fiction frame.

Riven – View from the transport tram between the islands. Like a cross between a cable car and a roller coaster it gives you nothing to do once set in motion except to enjoy the ride.

In the absence of a logical explanation, my perspective shifted into the game frame and I was all too aware of these agency suspensions as game functions. During the (fortunately infrequent) periods when the computer would seize control of my character to force an event, I

felt demoted and passive until control was returned. Riven, for example, freezes play during video sequences and animations (meaning that controls are frozen every time a door is opened or some mechanism is in operation), and some of The Longest Journey's dialogue and action sequences, once initiated, can last for many minutes without the any chance for the player to influence them.

Worse, at the end of the first chapter of Baldur's Gate, after the escape from the labs of Irenicus, Imoen (who has to this point been under my control in all battle sequences) suddenly attacks Irenicus and is imprisoned. Although the main plot requires this event, it caused an inevitable suspension of my engagement with the fiction frame and reduced my sense of agency for the remainder of the game.

To maintain engrossment with the fiction frame, the context should not only support agency but also seem to be affected by it. The sense of having an impact on the virtual world – that the context of play is sensitive to player-character actions within it – is the essence of agency. Actions in the world frame have consequences, and actions in the fiction frame must as well. Both micro-impact and macro-impact are essential.

Continued engrossment requires a perceivable impact of actions of the environment. Micro-impact means that items taken should not reappear and broken items should not mend themselves (without an adequate explanation). When a player-character returns to talk to the same character more than once, the character's response should reflect that.

The Longest Journey attempts to create a sense of micro-impact by having characters respond differently the second time April approaches them. Unfortunately (and understandably) the third time is generally the same as the second and reflects neither new

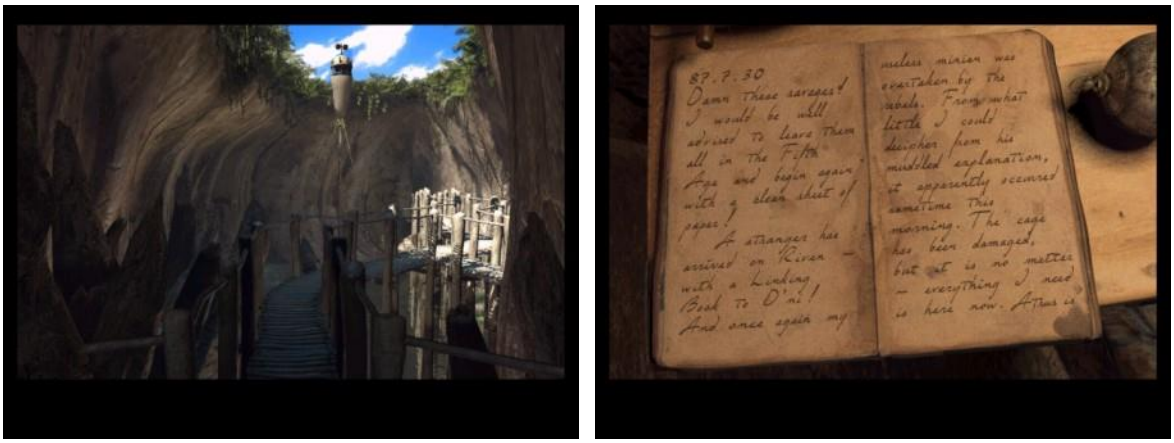
information nor building annoyance on the part of the other character. Because The Longest Journey's dialogues are obvious game triggers, however, the player-character has no choice but to approach each character until repetition occurs. Needless to say, my focus in such cases was almost entirely on the game frame during these sequences. Occasionally, the problem would be solved when April provided her own explanation such as "Hate to say it, but I don't have time to talk to Charlie right now."

The worst failure of micro-impact in The Longest Journey occurred during a confrontation between April and a hideous, angry mutant outside a lab high above the city. I couldn't at first figure out how to make April escape, so for a while I simply kept making her run away every time the mutant charged. At one point, however, the mutant caught up with her and the result was ridiculous. April and the mutant, powerless to effect each other, simply overlapped periodically until I was able to solve the puzzle.

Left: The Longest Journey – A strange dance between two characters that cannot interact. After April stops running around the area and is 'caught' by the creature it becomes clear that it is an attack that can't actually change the situation and could go on forever. Right: Baldur's Gate – It is possible to wander around the house, even to examine and take objects, without the owner responding. In dialogue he is completely unaware of what has taken place.

Less dramatically, in Baldur's Gate there were times when characters seemed unaware of my presence (and the presence of the five other adventurers in the party) even if we were suddenly invading their home. For example, one of my contacts in the slums of Athkatla was a prominent, and obviously wealthy, man. When we entered his house I seemed to go unnoticed as I wandered around his house (he only stood dumbly in the same spot) until the time when I finally decided to engage him in conversation.

In all the games, though, there were places in which micro-impact was successfully demonstrated. In Riven, for example, as I approached the village a native appeared in a small tower and cranked the wheel that sounded an alarm. When I first saw the village itself I could see the last few inhabitants scrambling to the safety of their houses. Later, when I managed to find Gehn's private journal, its pages contained the entry: "A stranger has arrived on Riven with a Linking Book to D'ni!" and went on to describe some of the events that took place when I first arrived in Riven.



Riven – Left: Watch tower of Riven village. When the player-character reaches this point a man appears in the tower and sounds an alarm. Right: Gehn's personal journal has an entry that shows that he is aware of the player-character's arrival on the islands.

Macro-impact is similar to micro-impact but involves the perception that the player-character can change the state of the wider world through action (or inaction) and influence outcomes of events. In Baldur's Gate, when I killed the trolls at D'Arness Keep, I found upon returning later to the area that things had been restored to working state. The inhabitants were back in the keep, gravestones indicated that the dead had been buried, and there were issues to deal with on the farms.

Baldur's Gate – Left image: Outdoor scene showing the hanging bodies of the D'Arness defenders of the occupied Keep; Right image: Upon the player-character's return after the Keep's liberation, a graveyard now stands outside the gates.

Baldur's Gate provided a few such examples of macro-impact especially related to the small quests early in the game. One limitation of all of the games, however, was their failure to provide any real sense that the final outcomes of the main storylines could be changed. The only way to see the games to the end was to reproduce the pre-determined events. The sense of macro-impact therefore waned as the game progressed and the focus switched the mail plot.

When context and agency were well balanced, providing adequate granularity and range along with a sense of the player-character's micro- and macro-impact on the virtual world, I

found myself almost completely engrossed in the fiction frame. When elements were missing or poorly balanced, the game and world frames became most prominent.

Perhaps my least favorite moment occurred in The Longest Journey, when I was stuck in limbo on a balcony with nothing to do and no idea how to leave. There was another character standing next to me. I had just finished a conversation with him, but the available dialogue sequence didn't allow me to ask him how to leave. Whenever I approached him to talk, the dialogue would unfold like this:

Hello, Mr. Westhouse
Back again so soon, Miss Ryan?
I should get going.
Alright.

The Longest Journey – On a small balcony with no place to go. All logic breaks down when it is impossible to leave and yet the person standing right beside you doesn't notice.

Then he'd drink from his flask and nothing would have changed. If I approached him again, we'd have the same conversation with no indication that we'd just been talking or that I had been standing next to him all this time. Eventually, I went online and found out the answer

(I had to repair a watch with a pushpin) and was able to leave, but the experience left me frustrated and, from then on, much less able to become engrossed in the story.

On the other end of the spectrum was my favorite quest in Baldur's Gate; my favorite experience, in fact, with any of the games. During the course of adventuring, I came across some slave traders in one of the inns that I had frequented many times before. It was by accident, and mostly out of curiosity, that I pursued the idea of gambling on animal fights. The background knowledge that I had already gained about these slave traders suddenly came together with other mysteries that I had yet to solve. It turned the familiar old inn, which I thought I had explored completely, into a place of sudden and surprising possibilities.

Baldur's Gate – Left image: A mysterious conversation about spending money on some kind of entertainment leads to further exploration. Right image: The battle pits where slaves are used to fight animals for gambling purposes.

The satisfying 'coming-together' of this particular side story was primarily due to the sense that it was spontaneous and open-ended and yet part of a wider interconnection of events in the fictional world. In other words, I felt a strong sense of agency (and both micro- and macro-impact) balanced well with the details of the story environment.

Narrative in computer games, I would argue, encompasses everything taking place on the fiction frame. It is a chronicle of player-character actions as they take place within a world created and described by the game and interpreted through a single perspective.

The game frame becomes more transparent, allowing more focus on the fiction frame, when the player is able to act freely and consistently within the game environment. Narrative in computer games thus becomes the creation of both the developer and the player, a balance of action and detail. For this medium, then, narrative is agency in context.

Discussion / Conclusion

As tempting as it is to imagine famous works of art brought from the pages of a book – or even from the stage or screen – to be enacted as computer games, that concept is fundamentally flawed when we consider the definition of computer game narrative to be agency in context. The essence of computer game narrative is agency, and at the core of agency is choice. Choice precludes the type of narrative experience possible in a book or play, enabling instead a new type of narrative to flourish based on players' experiences in the fiction frame.

The role of the game developer in creating a game narrative is, therefore, not to author a story but to create compelling spaces and situations that can be successful catalysts to meaningful play. These spaces should be structured to influence participant behavior rather than dictating it, and to enable a series of seemingly serendipitous moments of insight and accomplishment rather than attempting to force a rigidly structured whole. They should provide enough detail to evoke the world frame, while maintaining enough simplicity to avoid

inhibiting agency and drawing attention to the game frame. Such spaces, successfully created, encourage player events with a high potential to combine into overarching, emergent patterns. The key is a framework that enables the player to co-create engaging, emotionally charged, and personally meaningful experiences.

Successful narrative games are agency rich, but unlimited agency is impossible given current (and foreseeable) technology. Developers, however, do not need to provide players with more powerful interfaces; they need only create the illusion of variety and possibility. Players' sense of agency can be enhanced without new technologies through the exploitation of the relationship between the fiction and world frames. Clever designs leverage player psychology to their advantage, turning limited numbers of in-game actions into interactions with a rich and varied virtual world. To do so, developers need to cultivate a good understanding of players' cognitive processes, especially in terms of how they interpret information and react in various situations. They should pay attention to the inherent physical responses and behaviors that are generally beyond conscious awareness. Since the fiction frame is generated through reference to the world frame, developers need to understand people not just as players but also as they act in the real world. They also need to anticipate the wide array of (and variation in) skills people bring to the playing experience. This includes not only direct knowledge about games and game play, but also indirect knowledge from other areas of their lives.

Since the world frame cannot be duplicated as a game environment, good game design works within the limitations of technology by structuring game play so that those limitations are forced to the background. Game elements that bring the player's attention to the game

frame should be minimized through stylistic and point-of-view consistency in the game presentation and the elimination – or, when necessary, contextualisation - of computer-initiated interruptions to play. The player-character should be able to navigate the game space without having to switch to player mode, and actions and consequences should appear to be dictated by the requirements of the fictional space and not by game logic.

In other words, strong narrative within computer games is a function of how well a game expands and enhances the player's perception of agency through the course of play, and of how well the fiction frame creates the experience of a cohesive virtual world within which the player can act as a character.

Further Considerations

This analysis, I hope, has been a step toward understanding – and improving – the function of narrative in computer games. It does, however, have some important limitations which further work should address. Because my study was limited to three games and conducted using first-person single-player data, it leaves some questions unanswered such as: How consistent are fictions frames from one player to another? How do less overtly narrative game genres such as sporting, fighting, and simulation games create fiction frames, and are there types of games in which the concept of a fiction frame is truly irrelevant? Do players in social situations during multi-player games create a fiction frame (or fiction frames), and how does the narrative dimension of a game influence the social context of group play?

There seems also to be something to gain – especially from a developer's perspective – from further study of player behavior in terms of thought processes, typical responses, and demographic variations. How, for instance, do age, gender, and education level influence

player responses to agency and context, and how can games allow for a wider variety of preferences, response patterns, and skill levels?

One question does not need, I feel, to continue to be debated: whether computer games can contain narrative. Let us instead work on understanding the process, function, and potential of narrative as it does undeniably exist in computer games to the enjoyment – and benefit – of their many players.

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Footnotes

[1] References on the impact of virtual interactions:

Life on the Screen by Sherry Turkle

The Second Self: Computers and the Human Spirit by Sherry Turkle

The Virtual Community: Homesteading on the Electronic Frontier by Howard Rheingold (Paperback)

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The World Wide Web and Contemporary Cultural Theory : Magic, Metaphor, Power by Andrew Herman (Editor), Thomas Swiss (Editor) (Paperback)

Interface Culture : How New Technology Transforms the Way We Create and Communicate by Steven Johnson (Paperback)