NARRATIVE INTERFACE DESIGN: THE USE OF INTERFACE ELEMENTS TO ENHANCE THE NARRATIVE EXPERIENCE IN VIDEOGAMES

by

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ABSTRACT

This thesis examines the phenomenon of the player switching between story experience and game flow in the process of gameplay. It considers whether and how the design of the interface can reduce player oscillation between the enjoyment of story and the pleasurable flow of effective gameplay. The research argues that the awareness of oscillation can be reduced through the incorporation of narrative content and sensibility into the design of game interfaces; a number of narrativization design strategies are identified to support the argument.

Using the research method of case studies, this thesis studies several game examples that utilize the identified design strategies to achieve unique gaming experiences, reducing the awareness of oscillation between the narrative experience of story and the awareness of the interactive process of gameplay.

Keywords: narrative interface; videogames; interface design; game design

DEDICATION

This thesis is dedicated to my grandmother, a well-respected scholar who set a great example for me; to my parents, who give me unconditional love and support; to Zenia, who motivates me and cheers for me at times of doubt; to my mentors, who give me inspirations and guidance; to all of you who makes these wonderful videogames; to all of you who loves playing videogames.

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Never thought I would get more than just fun from videogames, I got a master's degree too!

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GLOSSARY

Flow	The mental state of operation in which the person is fully immersed in the activity, characterized by a feeling of complete involvement, energized focus, and a sense of success in the process.
Gameplay	A term used broadly to describe the overall gaming experience, including the physical and mental interaction with the interactive game system; often used to describe the mechanics of the game.
Genre	A term given to different types or classes of videogames; used to classify and group games based on qualities such as play style, point-of-view, game mechanics, and so on.
Interactor	A person who interacts with an interactive system.
Magic Circle	The space within which a game takes place. It is where the game and narrative can intersect, and creates a comprehensive game world that often can include elements of narrative such as storyworld.
Mise-en-scene	All of the elements presented to the audience; e.g. in a movie, it is everything in a scene; in theatre, it is everything on the stage; in a videogame, it is everything in the game world.
Narrativization	The imposition of a narrative or narrative-like elements on real experiences or events; presentation or interpretation in terms of a story or narrative.
Player	A person who interacts with a game.

Transparency An interface design outcome when the user is no longer aware of confronting a medium, but instead stands in an immediate relationship to the contents of that medium.

Videogame A game played on an electronic device with a video display; normally refers to a game played on a console. In the context of this thesis this term will be used to cover games played on a computer as well.

CHAPTER 1: INTRODUCTION

Similar to other powerful media such as movies and novels, videogames have the same ability to bring the audience to an immersive state, one that the audience becomes unaware of the medium and is in an immediate relationship to the content the medium is presenting (or representing). However there are various elements or factors associated with the form or the presentation of the medium that would break this immersion by making the audience aware of the process of perceiving. The uncomfortable seat in the theatre when you watch a movie or the barking dog in the park when you read a novel, are all elements that would stop you from becoming engrossed in the narrative content.

But the human mind is strong enough to handle some of these 'distractions'. Using Samuel Coleridge's (1905) terms, when perceiving a medium the audience would engage in an act of **willing suspension of disbelief**, which allows the audience to suspend any disbelief of the mediated illusion and believe in the narrative experience. Thus you no longer feel the uncomfortable seat nor do you hear the barking dog when you are really into the story.

Videogames are different from movies or novels because the audience perceives this medium through constant physical and mental interactions with the interactive system. Unlike movies and novels, where the author conveys the narrative content to the audience in a unidirectional way, videogames require

input from the player in order to respond accordingly. Thus the player of a videogame could never suspend his/her disbeliefs completely, as at one point or another (and most likely quite frequently) the player would have to focus on the interaction (instead of the narrative content) in order to make choices and interact with the system to continue further into the narrative content and become engrossed in the game again.

Jay Bolter and Richard Grusin (1999) discuss the concept of **remediation** and describe remediation as ***"the representation of one medium in another"***. Videogames can be considered as a remediation of traditional media such as movies for their multimedia nature capable of combining and presenting various elements such as sights and sound, as well as their potential ability to tell stories. Although not all games tell stories, many games do contain the same storytelling ability and can offer excellent narrative contents.

Remediation is also a process containing two dynamic sub processes – **immediacy** and **hypermediation**. Immediacy is the state of transparency, in which the **interactor**[1] becomes unaware of the medium and is in an immediate relationship to the content. Hypermediation on the other end of the spectrum, is the realization of the presence of the medium, thus the focus is on the process of mediation as well as the content.

[1]Murray (1997), "*Hamlet on the Holodeck*". Janet Murray introduces the term **interactor** to describe users who interact with interactive digital environments.

1.1 The Research Problem

As the gaming experience grows from the interaction between the player and the system, the player's consciousness is constantly shifting between the state of immediacy and the state of hypermediacy. This shift of consciousness can be a major interruption to the interactive experience. According to Jim Bizzocchi:

> ***There is a potential inconsistency between the experience of story and the process of interaction. Many interactive narratives ask the interactor to switch between an immersive state of immediacy and a hypermediated awareness of process.*** (Bizzocchi, 2003)

There are many design elements in a videogame that may contribute to the attempt to close the gap and allow for less-interruptive shifts between the two states. This research focuses on the interface design within videogames as one area to ease the disjuncture. My research question reads:

> **Whether and how the design of the interface can reduce user oscillation between the enjoyment of story and the pleasurable flow of effective gameplay.**

By studying related research and videogame examples through means case studies, this paper argues that the awareness of oscillation can be reduced, and narrative pleasure amplified, through the incorporation of narrative content and sensibility into the design of game interfaces.

In terms of the interface, immediacy can be referred to as ***"looking through the interface"*** and hypermediation can be referred to as ***"looking at the interface"*** (Manovich, 2001). Regardless of the genre of the game, designers are

destined to seek the perfect balance between immediacy and hypermediacy in order to bring out the richest experience for the players to enjoy.

For videogames, which require the interactor to constantly exercise choice (volition), the designers have to design both software and hardware interface solutions to help bridge the disjunction between the interactive environment and the interactor. This paper classifies game interfaces into four major categories: input, output, software, hardware. This classification serves as the foundation to analyze various game interfaces and derive design strategies to support the main arguments. Note that the notion of interface used in the context of this thesis is different from some formulations of HCI (Human-Computer Interaction). Interface here it is referred to Preece's (1994) definition which includes software and hardware inputs and outputs.

1.2 Research Context

This thesis looks at a research problem within the field that studies the relationship between narrative and games. After choosing to look at the interface aspect of the research problem, I looked at various researches done on the topic trying to generate my own findings to the problem. The following is a list of related research that shaped the background to this thesis:

- **Bizzocchi (2003):** the identification of design strategies to incorporate narrative onto the design of the appearance and the functionality of the mouse cursor.
- **Jenkins (2004):** the design and the construction of the interactive environment to embed narrative information.
- **Taylor (2002):** the use of various visual perspective (point-of-view)

and the narrative effects on gameplay.

- **Höysniemi (2006):** the use and design of the interfaces to incorporate physical interactions.
- **Rush (2006):** the videogame system's representation may contain narrative acts.

1.3 Research Methodology and Findings

Six design strategies are identified through means of modified closed readings on a number of videogame examples as the result of the research. These design strategies include **look of the interface**, **expressive indicators of the gameplay states – game metrics, behavioural mimicking, functional metaphor**, **perspectives**, and **bridging**. Each of the design strategies is supported by theories derived from traditional narrative and/or new media studies:

- Look of the Interface: **Expressive Use of Craft** (in cinema)
- Expressive Indicators of Gameplay States – Game Metrics: **Environmental Storytelling / Expressive Interface**
- Behavioural Mimicking: **Perceptual Interface**
- Functional Metaphor: **Metaphor**
- Perspective: **Perspectives and Agency**
- Bridging: **Ubiquitous Computing**

In the final sections of the thesis, several existing games in the market are examined as case studies to verify the use of the design strategies identified in the thesis.

1.4 Thesis Organization by Chapters

The following is a breakdown of the thesis arguments by chapters:

- **Chapter 1: Introduction:** Introduces the thesis, the research problem/question, the research methodology, and the research findings.
- **Chapter 2: Narrative Elements:** literature review on traditional narrative theories.
- **Chapter 3: New Media Elements:** literature review on new media theories.
- **Chapter 4: The Interface:** literature review, classification and definition of interface elements.
- **Chapter 5: Game Design Elements:** literature review on game theories.
- **Chapter 6: Games and Stories:** discussion on the relationships between games and stories.
- **Chapter 7: Narrative Interface:** identified possible solutions to the research problem lie in the relationship between the narrative and the interface.
- **Chapter 8: Strategies for Narrativized Interface Design:** research findings; the identifications and descriptions of the design strategies.
- **Chapter 9: Case Studies:** case studies of existing games verifying the use of the design strategies.
- **Chapter 10: Conclusion.**

Chapters two to six are mainly literature reviews of related topics. The purpose is to look at the theories in each field to build a foundation for the research which looks at a research problem that is a collective field of all of the areas of research listed. Chapter seven assumes possible solutions through narrativizing of the interface elements. It also looks at the different aspects,

examples, and theories supporting the possible effects of narrativization. Chapter eight identifies and describes the narrativization design strategies using theories, related researches, and examples. Chapter nine verified the existence of these strategies in five commercially and critically successful videogames. Chapter ten concludes the thesis.

CHAPTER 2: NARRATIVE ELEMENTS

2.1 Narrative

It is necessary to review fundamental narrative concepts first since this thesis explores the relationship between the narrative and the interface elements of videogames. Bordwell and Thompson (1994) give one definition of narrative as **a sequence of events happening in time and space connected by a cause-and-effect relationship**. This definition outlines the underlying structure of traditional linear narratives such as novels, movies, and comics, which according to Seymour Chatman (1992):

> ***A narrative...tells a story. In other words, it presents a unified sequence of events that add up to something, a plot with some kind of point... Traditional narratives also connect plot events by causation.*** (Chatman, 1992, p. 8)

We make sense of the world through associations to past experiences, and these experiences are stored in our minds in the form of narratives, or stories. We share our experiences as stories following the structure outlined by Bordwell & Thompson. As we narrate our experiences to our audience event by event, stories are constructed based on these events and the cause-and-effect relationships which connect these events. These stories consist of elements which can be extracted individually for analysis and research purposes.

Jim Bizzocchi (2006) outlines a number of key narrative elements that are commonly used and essential in new media and game studies. Taking his list as

a framework, the following elements are selected and elaborated for the purpose of this paper.

2.2 Storyworld

The storyworld, also known as the **setting**, is the virtual, conceptual world created by the narrative. It includes the time and space in which the story takes place. The storyworld puts every other element in the story in context with each other, as it connects characters, plot, and events to one another.

Chatman makes a good statement on storyworld (note as he refers to the term setting): ***"The task of a fiction is to create a world that is believable. By "believable", I don't mean 'realistic.' The fictive world need not duplicate the real world"*** (Chatman, 1992, p. 62). This statement is consistent with Coleridge's (1905) concept of willing suspension of disbelief; even if a storyworld is not 'real' because it does not exist in the real world, a well-constructed storyworld could make its audience believe it is psychologically coherent.

2.3 Character

Stories occur in storyworlds, but they are built around characters who are given the important role to carry out the events that form the stories. According to Chatman (1992) there are two types of character in narratives, **agents** and **characters**. An agent is mainly instrumental and has no personality; a character is an agent with depth and ***"our interest in characters stretches beyond their actions. For they possess traits, distinguishing qualities that give some kind of identity and personality"*** (Chatman, 1992, p. 60). Although Chatman states that

our interest in characters stretches beyond their actions, the actions indeed reveal the traits of these characters to the audience.

According to Chris Crawford (2003), character is revealed by their actions when confronting challenges:

> ***Narrative operates under the same constraint; conflict puts the protagonist under stress, forcing choices that reveal character.*** (Crawford, 2003, p. 55)

Frodo shows his tremendous courage by taking on the ultimate challenge he faces in *The Lord of the Rings*, and the reader may view him as someone who lacks courage if he chooses otherwise. Each character in the story shows their different traits and personalities by the actions they take: Sam's loyalty, Gollum's greediness and cruelty, Gandalf's wisdom, are all reflected in the choices they make and actions they take when they face challenges.

2.4 Emotion

Bordwell & Thompson (1994) outline a few ways to achieve certain emotions in cinema, and states that **expectations spur emotion**, thus manipulating expectations would result in various emotions:

- Delayed fulfilment of an expectation – suspense – may produce anxiety or sympathy.
- Gratified expectations may produce a feeling of satisfaction or relief.
- Cheated expectations and curiosity about past material may produce puzzlement or keener interest.

However as Bordwell & Thompson point out in their writing:

> ***There is no general recipe by which a novel or film can be concocted to produce the 'correct' emotional response. It is all a matter of context – that is of the particular system that is each artwork's overall form.*** (Bordwell & Thompson, 1994, p. 72)

Other than the individual artwork's overall form, individual audience may perceive the same content with different emotions, as narrative is affected by associations with past experiences. Nonetheless the methods suggested by Bordwell & Thompson as well as methods used by many authors of different media form still offer good guidelines as to how mood/emotion can be constructed in narratives.

Note that the emotion discussed above refers mainly to the emotion of the audience; what they emotionally feel when they watch a scene, read a chapter, or play a game. The emotions that the audience feels may not be the same as the emotions the protagonists in the story are expressing. I am sure the smiles on Hannibal Lecter's face in the *Hannibal* movies would only raise chills up the spine instead of making the audience feel calm and warm.

This is even more evident in videogames, where emotions also come from the interactions and the results of interactions. Bernard Perron (2005) suggests there are three types of emotion within videogames: **fiction emotion**, **artefact emotion**, and **gameplay emotion**. Fiction (or witness) emotion refers to the protagonists' emotion, what the protagonists are expressing in the story presented to the audience. Artefact emotion refers to the emotion generated by the audience perceiving the narrative presented, or simply the audience's emotion. Gameplay emotion refers to the emotion generated by the process of play.

Take Capcom's *Resident Evil* (Capcom, 2002) for example. Throughout the game, the protagonists, Gill and Chris, expressed a tremendous amount fear (fiction emotion) as they fight their ways through zombies and malicious monsters. As the audience, I also felt anxiety (artefact emotion) coming from the building of suspense from the plot. However, more than anything else, I enjoyed the pleasure of slaying zombies (gameplay emotion) with my shotgun and rocket launcher.

2.5 Narrative Arc and Micro-narrative

The narrative arc, or the underlying structure of traditional narratives, is the process of building up a story event by event to a climax, and then easing off into the ending. This concept can be traced back to the Greek philosopher Aristotle, thus a narrative arc is also known as the **Aristotelian arc**. A typical Aristotelian arc has four phases, as outlined by Bordwell & Thompson (1994):

- **Set-up:** The stage is set and the initial state of affairs established.
- **Complication:** Where the action changes direction, or when the principle obstacles are encountered that is preventing resolution.
- **Development:** The narrative builds on the established premises and goals, often by creating tension and suspense.
- **Resolution:** Turning point that intensifies the action and resolve the complication.

A full narrative would have all four phases of a narrative arc listed above; however segments or instances of a full narrative can be extracted out for different narrative purposes. Events like these may not always be complete enough to have all four phases, and may have as little as just one of the four

phases. Thus the term **micro-narrative** is sometimes used to describe these segments, or miniature versions of narratives. Classic examples of this can be seen in alien movies such as *Alien Versus Predator*. Just when the audience thinks it is all over, the body of the dead Predator breaks open and a new breed of Alien creeps out. It only shows the setup phase of a new narrative arc without any further narrative, but this micro-narrative has a rather interesting effect on the audience as it leads them to expect a sequel would be released in the future.

The term micro-narrative can also mean complete but small narrative arcs within a larger narrative. For example, the blockbuster movie series, *The Matrix* trilogy, when viewed as a whole, tells the story of the protagonists, the humans, fighting against machines for their freedom from the virtual reality imprisoning their minds. Each episode however has a complete narrative arc of its own, as they each tell a small, but complete segment of the bigger story. Each episode can then be broken down into even smaller narrative arcs, such as the story of Neo from being his old Anderson character to breaking away from the Matrix into the reality in the first episode; even every time he enters and exits the Matrix throughout the rest of the trilogy movies can be viewed as a micro-narrative, each with its own setup, complication, development, and resolution.

This definition treats micro-narrative as **a moment of narrative coherence**, as a series of micro-narratives can be strung together to form a full-length narrative, while such a full-length narrative can also be broken down into individual smaller but complete narratives.

2.6 Perspectives

Although Bizzocchi's (2006) framework of narrative parameters is complete and offers a solid foundation for incorporation and analysis of narrative theories in videogames, this thesis also looks at some other aspects of traditional narrative theories in search of a diverse perspective on videogame studies.

Speaking of perspectives, the term **perspective** in narrative refers to the point-of-view in which the audience perceives the story from. Bal (1988) and Abbott (2002) both talk about the concept of the **narrator** and **focalizer** in their books on narrative theories. A narrator is the one who narrates, or tells the story to the audience, and can either be someone in the plot, like an actor, or an external entity who has no physical presence in the plot, such as an off-screen voice. A focalizer is the character through whose eyes the audience sees the story. In most cases the audience's view of the story is limited to that of the focalizer's. If the focalizer is not in the story, it gives the audience an omniscient view of the plot and offers a more objective view than a focalizer who is in the plot. Although in many cases they are, the narrator and the focalizer may not necessarily have to be the same character.

The concepts of the narrator and the focalizer play a significant role in narratives, traditional or new alike, as they can have major impacts on how the story is perceived by the audience. The classic example of *Rashomon* by the master Japanese director Akira Kurosawa in 1950 demonstrates how the audience can be lead to perceive different stories from the same narrative by altering the narrator and focalizer throughout different stages of the movie.

Abbot (2002) also introduced the concept of **perspective distance**, which can be used to measure the emotional involvement the audience has for the characters. It can be described as the distance between the narrator and the characters, thus the closer the perspective distance the stronger the emotional attachment is of the audience for the characters.

CHAPTER 3: NEW MEDIA THEORIES

Before the research can focus on narrative's role in videogames, it is necessary to study the transition of media form and functionality from traditional media, such as fiction, theatre, and cinema, to new media, such as hypertext, interactive multimedia, or videogames. This process juxtaposes the narrative terms listed in the previous chapter under different context (traditional and new media); the results make it possible to study the possibilities, the successes and failures of storytelling in new media, and ultimately how these elements can be implemented into videogames.

3.1 J. Bolter & R. Grusin: Remediation

The literal meaning of the term **remediation** is the process in which new media forms establish themselves by borrowing from and refashioning other existing media (Bolter and Grusin, 1999). Simply put, remediation is the representation of one medium in another. Videogames are a remediation of cinema (and many other media forms), cinema is a remediation of photography, and photography is a remediation of painting. Remediation is a trait, or a characteristic, that comes with any new media form, and continues throughout the history of that medium.

Remediation is also an experience of media created when the interactor shifts consciousness between its two sub processes – immediacy and

hypermediacy. Immediacy helps produce a made-belief reality that reinforces the concept of willing suspension of disbelief by bringing the audience to an immediate distance with the mediated content; Janet Murray (1997) calls this the **active creation of disbelief**. Hypermediacy breaks this immersion by reminding the audience that this reality created by the remediation is in fact artificial.

According to Bolter and Grusin (1999), remediation has long existed in every new media ever since the Renaissance:

> ***Like other media since the Renaissance – in particular, perspective painting, photography, film, and television – new digital media oscillate between immediacy and hypermediacy, between transparency and opacity. Although each medium promises to reform its predecessors by offering a more immediate or authentic experience, the promise of reform inevitably leads us to become aware of the medium as a medium. Thus, immediacy leads to hypermediacy.*** (Bolter & Grusin, 1999, p. 16)

This oscillation between the two states occurs on an even more regular basis in interactive new media such as videogames, because the media often times would pause and wait for a responsive action, or choice, from the interactor before resuming. These pauses in interactive media make hypermediacy even more apparent and noticeable than other non-interactive media.

3.2 L. Manovich: Principles of New Media

Lev Manovich (2001), one of many respectful scholars on new media studies, provides good definitions and insights on new media in his publications. In his book *The Language of New Media,* he outlines five principles of new media, which offer a different perspective on new media than those of Bolter & Grusin, and Murray's.

3.2.1 Numerical Representation

> ***All new media objects, whether created from scratch on computers or converted from analog media sources, are composed of digital code; they are numerical representations.*** (Manovich, 2001, p. 27)

This quote defines the basic nature of new media – they all are representations of numbers, zeros and ones to be exact. These numerical representations are what is commonly understood as **digital**, and the process of converting analog data into numerical representations is known as **digitization**. The numerical nature of new media makes them formally describable and subject to algorithmic manipulation.

3.2.2 Modularity

Modularity refers to the discrete nature of new media elements. Media objects are made of small bits and pieces of discrete samples – sentences are made of words, motion pictures are made of individual frames, and the World Wide Web is made of billions of web pages and websites. This nature of modularity is not exclusive to digital new media as some of the examples above have shown; however in digital new media, modularity allows individual elements to be modified without affecting the greater, completed, media object which is a collection of these individual elements.

Not only does this modularity nature make new media easy to manipulate, it also allows variations of the media to be generated based on the same collection of elements. A good example of this is how software companies take out or insert various features of a software to publish different versions of the same program for audiences with different needs and budgets.

3.2.3 Automation

The first two principles – numerical representation and modularity, allow many operations and functions of new media objects to be performed automatically without the intentionality of the interactor. The final 'outcome' of a new media may be generated automatically by the system; all the interactor has to provide is the data. For example a webpage (or even a website) can be generated in seconds by a program such as Macromedia Dreamweaver, and all the web designer needs to provide are its data (contents) such as text and images.

In many role-playing games such as *Final Fantasy XI* (Square Enix, 2003) the players are given the agency to create characters. The players can customize their avatars in various ways such as appearance, class, and name. However the players do not need to actually build the avatar, as they simply choose from a collection of templates the game generates automatically.

3.2.4 Variability

Being numerical and modular, new media objects have the ability to be presented and represented in different forms and versions with the underlying content, or data, being more or less the same. The different versions of a software application mentioned in the modularity section above is just one of the many examples of how new media can be varied.

With the help of the automation principle, different versions of the exact media object can be generated instantly as well. For example, a digital photograph can be enhanced, brightened, cropped, or contrasted, into different

versions of the same photograph with the automated functions built into the image editing software.

Besides the form, or the represented interface of the new media objects, the scope of new media objects can be varied as well. Manovich talks about how new media elements are stored as ***"media databases"*** (Manovich, 2001, p. 37), and the interactor has the power to manipulate the data and decide the scope of the presentation of the new media; in other words the interactor can decide how much or how little data he wants to retrieve. Some quick examples of this are how subtitles can be shown or hidden from the viewer or how chapters can be jumped to and viewed independently in a DVD movie.

Variability also applies to the interactor's interactive experience with the new media. Since the same data can derive many different versions of the same media, the experience of creating and perceiving the media will be different as well.

3.2.5 Transcoding

The fifth principle, new media being **transcoding**, is a more abstract principle that requires us to think about computers as an equal identity as we humans. Manovich claims that ***"new media in general can be thought of as consisting of two distinct layers – the 'cultural layer' and the 'computer layer'"*** (Manovich, 2001, p. 46), and we human beings are in a generation in which a massive amount of our cultural artifacts are created, presented, and stored on computers.

As a result, not only do we have to design computers in a way to fit into our lifestyles (adjust the computer layer to work with the culture layer), our mindsets and behaviors are also affected by computers so we can coordinate with them (adjust the culture layer to work with the computer layer). In short, the two layers influence each other, and the result is ***"a new computer culture – a blend of human and computer meanings, of traditional ways in which human culture modeled the world and the computer's own means of representing it"*** (Manovich, 2001, p. 46).

3.3 J. Murray: Qualities of New Media

As one of the earliest scholars to write about new media, Janet Murray (1997) outlines and discusses the qualities – four properties and three aesthetic pleasures, of digital environments in her often-sited publication *Hamlet on the Holodeck*. These qualities are well defined and have been used to describe the various aspects of digital new media, and serve as good foundation for analysis and research on videogames.

Note that Murray views digital new media from a more aesthetic point-of-view, as she describes more abstract parameters of new media. Manovich's principles discussed earlier however, approaches new media from a more technical perspective, as more emphasis is drawn onto the form and structure of new media.

3.3.1 Properties of New Media

The four properties of digital new media Murray claims are: procedural, participatory, spatial, and encyclopedic. Digital environments are **procedural**, as they follow sets of rules and algorithms which act as the backbone and construct the digital environment. Murray writes that:

> ***Digital environments are appealing to us not just because they exhibit enormous amount of behaviours but because we can induce the behaviour. They are responsive to our input. The primary effective property of the computer is its codified rendering of responsive behaviours. This property enables us to find ourselves being members in an online community instead of a silent and passive audience.*** (Murray, 1997, p. 74)

This procedural property is evident in interactive new media such as videogames. Salen and Zimmerman (2004) break down games into three schemas and one of these schemas is in fact **rules**[2]. Rules are procedural guidelines to be obeyed by participants of any digital systems, and according to Salen and Zimmerman, rules in videogames provide shared, unambiguous, and explicit limitations to all players, and are fixed, binding, and repeatable.

Digital environments are **participatory**. Unlike traditional media in which the audience assumes a role of an observer who passively perceives the content as it is being presented by the media, digital environments require participation from the interactor in order to generates content accordingly.

The interactive nature of digital environments allows for dynamic and emergent experiences, as the audience is engaged with the overall experience through active participation.

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[2] Salen & Zimmerman (2004), *Rules of Play*. Salen & Zimmerman breaks down game design into three distinctive schemas: rules, play, and culture.

Digital environments are **spatial**. Digital media create virtual spaces that are navigable by the interactor; these spaces allow the interactor to see, explore, and interact. Murray (1997) states that the term **cyberspace** refers to digital environments that are spatial, and claims that unlike books or movies which only portray space, cyberspaces are literally navigable. The spatiality and freedom to navigate adds another layer of interactivity, making the digital environments more engaging.

For digital media, navigable and spatial cyberspaces are essential to their successes, as Murray (1997) writes, ***"The challenge for the future is to invent an increasingly graceful choreography of navigation to lure the user through ever more expressive narrative landscapes"*** (Murray 1997, p. 83). A well designed and constructed spatial storyworld is capable of conveying expressive narrative contents to its audience, offering more opportunities for immersion.

Digital environments are **encyclopedic**. Murray (1997) states that digital environments are encyclopedic, in that they embed an enormous amount of information and knowledge that are easy to access. For example the world-wide-web is a massive network of information; with a click of a few links one can access topics and information not only on the subject itself, but any related subjects or different perspectives or forms of the same subject. Murray (1997) sees this ability to store and access massive amount of information as a global library:

> ***Since every form of representation is migrating to digital form and all the world's computers are potentially accessible to one another, we can now conceive of a single comprehensive global library of paintings, films, books, newspapers, television programs and databases, a library that would be accessible from any point on the globe.*** (Murray 1997, p. 84)

Although in many digital environments the amount of information embedded may not be comparable to the world-wide-web, they can still contain vast amount of information in the form of data. The multimedia nature of digital environments also allows these data to be presented in various formats, ranging from text to sound to still images to videos.

According to Murray, the four properties listed above, when properly designed and executed can provide the following aesthetic pleasures, making the digital environments engaging to the interactor.

3.3.2 Pleasures of New Media

The three aesthetic pleasures of digital new media Murray claims are: immersion, agency, and transformation. The term **immersion** in Murray's arguments is used to describe the mental state of the interactor when completely engrossed in the content which the media is representing. It is the state described by both Coleridge (1905)'s concept of willing suspension of disbelief and Murray's (1997) rephrased version of **active creation of disbelief.**

This state is considered most engaging in any media, as the audience is mentally engaged with the narrative content completely. In Murray's words, ***"The experience of being transported to an elaborately simulated place is pleasurable***

in itself, regardless of the fantasy content. We refer to this experience as immersion" (Murray 1997, p.98).

Digital new media provide **agency**. As mentioned previously, the interactor controls the interactive system through means of various inputs. These inputs are also known as **agents**[3], which the interactor operates to issue commands. The player experiences the sense of agency when he/she is given enough 'power' to manipulate various agents to initiate interactions.

Agency, or this satisfying power, is another key element separating videogames from non-interactive media such as movies and novels; in fact as Murray writes:

> ***In games, therefore, we have a chance to enact our most basic relationship to the world—our desire to prevail over adversity, to survive our inevitable defeats, to shape our environment, to master complexity, and to make our lives fit together like the pieces of a jigsaw puzzle.*** (Murray 1997, p. 143)

Digital new media lead to **transformation**; this aesthetic pleasure of digital environments works two ways. The interactor has the ability to transform the digital environments through the various interactions with the system; for example in videogames the player may be given the ability to alter the terrains and change the virtual gamespace such as in *SimCity 2000* (Maxis, Electronic Arts, 1993).

In reverse, the digital environments also have the ability to transform the interactor in the real world, mentally or physically. For example as it will be

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[3] Brenda Laurel gives a good definition to the term **agent** in her book *Computers as Theatre* (Laurel, 1993). She said, ***"A computer-based 'agent' is defined as a bundle of functionality that performs some task for a person, either in real time or asynchronously"***.

discussed later on in the research, a player who plays physical interactive games extensively may improve their physical conditions thus being transformed physically.

3.4 E. Zimmerman: Interactivity

The interface exists on both ends of any interactive system that follows the standard 'input-process-output' model. The interactor issues commands (input) to the system via the interface and the processed responses are fed back (output) to the interactor also via the interface. This is a very simple description of an **interaction**.

Interaction occurs only when actions (and reactions) are being carried out and exchanged between the two parties. There is no interaction if the actions the interactor casts onto a system result in no reaction, and there is no interaction if the signals a system generates do not connect with the interactor's receptions. However one may argue that interactions occur everywhere, in some cases the interactor just does not realize they are happening. Katie Salen and Eric Zimmerman (2004) state that there are four modes of participation which they use to classify the level of interactivity for interactive environments.

3.4.1 Cognitive Participation

The first, or the lowest, level of interactivity is **cognitive participation**, in which the interactions occur inside the interactor's mind as he/she interprets the information. The interactor is only passively receiving signals without generating a response back to the system. In other words, the role the interactor plays in

creating an experience is minimal; the author writes the article, the reader reads and interprets the content. The experience is carved out for the audience to grab. Since these media requires a very low level of interaction, the number of interface elements needed to support the experience is correspondingly minimal (there is not much to do other than watching/touching/listening to the medium and then thinking about what you just saw/touched/heard).

3.4.2 Functional Participation

In most interactive systems the level of interaction required to drive the system is higher, as the interactor often times needs to operate the system using the interface in order to perform a task. You need to dial the number keys on the phone to make a phone call; you need to press the 'copy' button on a copier to photocopy a page; you need to double-click on the folder on your desktop to access the files in it...and so on. There is more to it than passively interpreting the information alone, thus it requires a few more interface elements in order for the interactor to initiate the interaction and receive responses. This is the second level of interactivity outlined by Salen & Zimmerman, called **functional participation**.

3.4.3 Explicit Participation

The third level of interactivity is **explicit participation**, which is participation with designed choices and procedures. This interaction is more complicated than functional participation, as it normally involves chain interactions that lead to other interactivity. The difference between explicit and

functional participation is that explicit participation factors in the overall experience of the interaction, where functional participation focuses on the utilitarian function of individual interactions. Dragging the pieces with your mouse in a computer chess game is functional participation, but to think about the opponent's moves and react accordingly, and to play the game of chess, is explicit participation.

Zimmerman (2000) lists some of the elements involved in explicit participation: "***choices, random events, dynamic simulations, and other procedures programmed into the interactive experience***".

3.4.4 Cultural Participation

The highest level of interactivity is **cultural participation**, in which the interactivity extends beyond the physical (sometimes virtual) boundaries of the interactive system. In videogames, the most seen example of cultural participation is the creation of fan websites and online communities, which are artifacts dedicated to particular games or series. The activities involved extend far beyond the original interactions designed into the games, and often times spur cultural phenomenon such as fan art, cosplay (players dressing up as characters in the game) and novels or short stories.

Other examples of such cultural participation include the creation of **MODs** (short for **modifications**), as dedicated players may take the extra time and effort to create spin-off versions of the game. The successful example of *Counter-Strike* was created by two fans of *Half-Life* (Valve Software, Sierra

Entertainment, 1998), and later became one of the most popular online first-person shooters game.

3.4.5 Levels of Interactivity and Narrativization

This thesis looks for ways to narrativize videogame interface elements in order to reduce the impact of oscillation on the narrative pleasure. In terms of Zimmerman's four levels of interactivity, the narrativization design strategies aim at incorporating cognitive participation in the form of narrative experience into functional participation in the form of physical interactivity to generate explicit participations that involve interactions with high narrative associations.

CHAPTER 4: THE INTERFACE

The interface is the channel through which the interactor and the interactive system exchange signals. The interactor issues commands via the interface and the system generates responsive feedbacks also via the interface. It is what bridges the human and the computer and translate the distinctive languages used by the two parties. Brenda Laurel (1999) states that ***"an interface is a contact surface. It reflects the physical properties of the interactors, the functions to be performed, and the balance of power and control"*** (Laurel, 1999, p. xii).

The term "**the interface**" is used and referred to differently in other research fields such as HCI, as suggested by the notion that the interface is everywhere (Schmalstieg *et al.*, 2002). Some examples of such different uses include the term **human-machine interface (HMI)** used to describe the interface on mechanical systems or vehicles, or the term **graphical user interface (GUI)** used to describe the articulated graphical outputs on the screen in computing science and HCI.

This thesis treats the interface as the channels through which the player and the videogame system exchange utilitarian activities. The thesis focuses on the aspects of the interface which interactions are executed upon in videogames.

Salen and Zimmerman state that ***"to play a game is to experience the game: to see, touch, hear, smell, and taste the game; to move the body during***

play, to feel emotions about the unfolding outcome, to communicate with other players, to alter normal patterns of thinking" (Salen & Zimmerman, 2004, p. 314) . Thus in the context of videogames, the interface is the scores you see, the buttons you click, the rumble you feel from the game pad, and even the voices you hear from other players in an online game.

The different aspects of gaming interfaces can be grouped into four main categories – two types: **input** and **output**, and two forms: **hardware** and **software**. This grouping does not aim to tag every interface element with a family name; rather it is a generalized classification helping the research to analyze the different interface elements according to their nature.

A well-designed game interface should harmonize interface elements from all of the four categories, and the elements working together should bring the player an enjoyable interactive experience.

4.1 Interface Type: Input

Input refers to the process of decision making by the interactor; ***"input is concerned with recording and entering data into the computer system and issuing instructions to the computer"*** (Preece et al. 1994, p. 212), and when combined with appropriate software, ***"transforms information from the user into data that a computer application can process"*** (Preece et al. 1994, p. 235).

Most input devices are in the form of hardware interface solutions such as the keyboard, the mouse, and the joystick; input options, or choices, are in the form of software interface solutions such as menus, drop-downs, buttons, and so

on. Regardless of its form, hardware or software, input is what converts the interactor's volition of mental and physical process into commands understandable by the interactive system. According to Preece et al. (1994), an interface device should be one that:

- ***Matches the physiological and psychological characteristics of users, their training and their expertise.***
- ***Is appropriate for the tasks that are to be performed.***
- ***Is suitable for the intended work and environment.*** (Preece et al. 1994, p. 212)

4.2 Interface Type: Output

Output refers to the responsive signals given out by the interactive system as a feedback to the input the interactor initiates; they are ***"devices that convert information coming from an electronic, internal representation in a computer system into some form perceptible by a human"*** (Preece et al. 1994, p. 238). The outputs are in forms of human senses, sight, sound, touch, smell, taste, ranging from a single sense to a combination of multiple senses.

Contrastingly yet similarly, regardless of its form, output is what converts the responsive signals of the interactive environments into understandable forms (our senses) for the interactor. Output also has an impact on the relationship between game and narrative as it gives the players an update of the current game state according to how the players is performing.

4.3 Interface Form: Software

Software refers to the software interface designs the interactor interacts with in the system. Unlike hardware interfaces, software interfaces exists only in

the virtual, digital world and do not have physical presence in the real world. Software interface solutions are just as important as hardware solutions in that they often are visual representations of the player's choices or options they can have in the game. Software interface tends to change over the course of interaction, so it is dynamic compared to the static hardware interface.

Some examples of software interface elements include menus, cursors, buttons, and scrollbars.

4.4 Interface Form: Hardware

Hardware refers to the hardware interface equipment the interactor interacts with in the physical world. Hardware interface solutions have a very strong impact on the relationship between game and narrative because they are interactor's physical channels to the virtual environments. Hardware interface are often times static; that is, their forms do not change over the course of interaction.

Some examples of hardware interface elements include joysticks, keyboards, monitors, and speakers. There are also some interesting examples of interface devices that combine software and hardware interface elements, such as a touch-screen device. Using the definitions of hardware and software interface elements in this thesis, interface elements such as buttons on a touch-screen are considered a software interface element, while the touch-screen itself is considered a hardware interface element.

4.5 Cultural Interface

Other than looking at the term the interface from the perspective of human-computer interaction, Manovich (2000) offers a different viewpoint and looks at the interface from a cultural perspective.

As discussed earlier in the principles of new media, Manovich identifies that the current generation of new media consists of both the computer layer and the human layer, thus the interface existing in between must be able to channel both layers. As a result, the term the interface has evolved into something beyond our original perception of the definition – the set of tools that we use to operate the machines.

Adapting the trends established by our traditions and lifestyles, the interface has absorbed strengths of many other disciplines and has remediated itself into a new form of interface – a cultural interface. As Manovich states, ***"these interfaces try to negotiate between metaphors and ways of controlling a computer developed in HCI, and the conventions of more traditional cultural forms"*** (Manovich, 2000, p. 93).

Being a medium which remediates many other media, the interfaces of videogames not only are based on interfaces we are familiar with from our past cultural experiences such as cinema and printed text, but they also have the potential to evolve and incorporate any trends our culture may be experiencing. This has in part led to the identification of many topics and areas of research that are subsets of the original HCI field, including experience design, perceptual user interface, ubiquitous computing, and so on.

CHAPTER 5: GAME DESIGN ELEMENTS

In order to conduct research on any aspect of videogaming, a good understanding of videogame design is required. Since this thesis does not focus on the technical aspect of videogames, only minimal efforts are allocated to the discussions and research on technical details such as coding, programming, or technological analysis.

The focus of this paper is on the design aesthetics of videogames with an emphasis on game interfaces; therefore it looks at game design elements such as design principles, characteristics, and aesthetics. Terms and concepts unique to this aspect of game design introduced by both scholars and game design participants in the field are discussed in this section to establish a common vocabulary to support further studies and analysis of game examples.

5.1 Video (Digital) Games

Videogames sit relatively high up in the new media family for their higher level of interactivity; in fact videogames consist of all four levels of interactivity suggested by Salen and Zimmerman (2004) – cognitive, functional, explicit, and cultural participation.

Costikyan (1994) states that ***"traditional artforms play to a passive audience. Games require active participation"***; this outlines the fundamental difference separating games from the other traditional media. In fact, games not

only require active participation, games ***"depend on decision making"***[4]. Should I jump over the hole or fall into it? Should I answer 'Yes' or 'No' to the Wizard's question? Should I spend my five-hundred Rubies on this Golden Armour or on that pair of Sky Boots? These decisions not only require mental and physical interactions to make, they also have a direct impact on the game state and the experience that follows.

The interface must support this decision-making nature of videogames by providing sufficient information to help the interactor make the decisions. Although the interface does not necessarily have to show the interactor the exact consequences of the decisions immediately, it typically informs the player that a decision is required and what the options are.

The interactions in videogames also must have a purpose, or what Salen and Zimmerman (2004) call **meaningful play**. A videogame can be said to be the result of players actively engaged in meaningful play within a well-constructed digital environment that includes the four properties and offers the three pleasures suggested by Janet Murray (1997).

A major difference separating videogames from traditional games such as board games or card games is the fact that videogames are driven by automated computing processes. The computer is able to take inputs from the player, process the data with algorithms that set up the rules of the game, and generate corresponding outputs. In traditional games this process is carried out manually

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[4] Costikyan, G. (1994). *I Have No Words, I Must Design*. Costikyan argues that games are not like stories as games are non-linear and requires the player to make decisions which lead to consequences.

by participants in the game; for example in a monopoly game someone (a person) is assigned as the bank and has to be responsible for collecting, exchanging, and issuing money through manual labour. In a same monopoly game played on the computer, all these calculations and actions are processed and executed by the computer system automatically.

Being an automated system is just one of four traits of videogames outlined by Salen & Zimmerman (2004), along with **immediate interactivity**, **manipulation of information**, and **networked communication**[5]. These traits when combined with the properties and pleasures of digital interactive environments outlined by Murray (1997) provides the players engaging and immersive gaming experience.

5.2 Gameplay

Gameplay is a term that is broadly used by game designers, researchers, and players. Andrew Rollings and Ernest Adams (2004), game designers and researchers, attempted to define the term by extending a simple definition of Sid Meier (the designer of *Civilization*): ***"a series of interesting choices"***. Rollings and Adams elaborated on the statement by replacing terms which fit better into the context of videogames; they define the term gameplay as:

> ***One or more causally linked series of challenges in a simulated environment.*** (Rollings & Adams, 2004, p. 201)

[5] Salen & Zimmerman (2004, pp. 91). Salen & Zimmerman state that these traits exist in majority of games as well, but they are more robustly embodied in digital videogames.

Interestingly, this definition of gameplay is close to the definition of narrative by Bordwell & Thompson (1996) discussed earlier: **a sequence of events happening in time and space connected by a cause-and-effect relationship**.

These two definitions highlight the similarities between games and narrative. Both are in time and space (computational time and space for games). The differences, events and challenges, represent the nature of the two domains. The definitions show these two domains are bridgeable; the thesis looks for practical strategies for bridging these two domains.

The key difference between the two definitions is that challenges in videogames are interactive and the outcomes are dynamic, and narrative events are relatively static and will most likely have similar or the same subsequent events. This similarity shows that there are connections between games and stories, since gameplay is essential to games just as narrative is essential to stories.

However just as one cannot isolate a single element such as the plot, the character, or the setting of a novel and say 'this is the narrative', one cannot isolate a single element such as graphics, music, or the interface and say 'that is the gameplay'. Rollings and Adams states that:

> ***...there is no single aspect of any game that we can point to and identify as the gameplay...It is a combination of many elements...The gameplay emerges from the interaction among these elements...*** (Rollings & Adams, 2004, p. 237)

Gameplay can be considered as the overall gaming experience, including all mental interpretation of the narrative content and the physical interaction with the game system. It is the experience created when the player and the **magic circle** are blended into one.

5.3 The Magic Circle

Salen & Zimmerman (2004) uses the term, the **magic circle**, to describe the game space:

> ***The magic circle of a game is the space within which a game takes place. Whereas more informal forms of play do not have a distinct boundary, the formalized nature of games make the magic circle explicit.*** (Salen & Zimmerman, 2004, p. 99)

It is a well constructed term which can be used to describe the 'magical' power videogames possess that enable them to attract players to engage in the act of playing. If the magic circle is powerful enough, it even becomes addictive for some players who play for extensive periods of time.

The magic circle is created when the player is engaged in the act of playing, and vanishes when the player stops playing. The magic circle is where the game and narrative can intersect, and creates a comprehensive game world that often can include elements of narrative such as storyworld.

5.4 Play

The term **play** is sometimes being confused with the term **gameplay** defined earlier, as they do share similarities. Play can be defined as the sheer act of playing, while gameplay is a broader term involving more elements,

including play. Play is defined as a cultural behaviour by Dutch scholar Johan Huizinga (1985) as ***"a voluntary activity or occupation executed within certain fixed limits of time and place, according to rules freely accepted but absolutely binding, having its aim in itself and accompanied by a feeling of tension, joy, and the consciousness that it is different from ordinary life"*** (Huizinga, 1985, p. 28). This definition applies to all sorts of play, from playing a game of chess in the park to an online role-playing game with twenty other players from around the world on a computer, we as human beings carry out in our daily lives.

In videogames, play is referred to the same voluntary activity executed in the interaction with the game system; simply put, it is the interaction between the player and the game. It is also the second schema outlined by Salen and Zimmerman (2004) in game design[6]. Play is all about the experience, and as discussed earlier the play in videogames should have a meaning or a purpose, or what Salen & Zimmerman (2004) call **meaningful play;** they claim that ***"the goal of successful game design is the creation of meaningful play"***.

There are two ways to describe play in videogames being meaningful. The first is how game actions result in game outcomes to create meaning; the second is evaluative, as ***"it helps us critically evaluate the relationships between actions and outcomes, and decide whether they are meaningful enough within the designed system of the game"*** (Salen & Zimmerman, 2004, p. 30). In short, a play is meaningful if it conveys semiotic, psychological meanings to the player, or if it contributes to the proper functioning of the overall game system.

[6] Salen and Zimmerman (2004) outlines three schemas in game design: rules, play, and culture.

5.5 Flow

As discussed earlier the player achieves the state of immersion when the player forgets the process of playing and is in an immediate relationship to the narrative content. Psychologist Mihaly Csikszentmihalyi (1990) calls this phenomenon **flow**, and sometimes people would do things just for the sake of doing them, in order to reach the state of flow. It is the mental state of operation in which the person is fully immersed in the activity, characterized by a feeling of complete involvement, energized focus, and a sense of success in the process. Csikszentmihalyi declares eight characteristics of flow experience, which upon further review are also related to videogame design:

1. **Optimized challenges**
2. **Allows for concentration**
3. **Clear goals**
4. **Immediate feedback**
5. **Effortless enjoyment**
6. **Sense of control**
7. **Disappearance of self**
8. **Altered sense of time**

Brenda Laurel echoes this concept and states that

> ***The most engaging interactive narrative relies upon flow; that is, uninterrupted participation in the unfolding action. Poor interaction design can interrupt flow and degrade the experience.*** (Laurel, 1990)

In interactive experiences, the state of flow requires an appropriate level challenge in order to persist. As Csikszentmihalyi (1990) suggests, if the challenge is too easy (or becomes too easy), the sense of enjoyment the participant experiences at first may decrease or disappear as the participant

masters the current level of difficulty. A new challenge (or a more difficult version of the same challenge) must be introduced in order to keep the sense of flow from fading. However a dilemma here is that a new challenge that is too difficult may discourage the participant, which would detract from the sense of flow. Thus game designers need to pay attention to the constant shift between challenge and flow in order to find and maintain the perfect balance.

This thesis argues that game designers should also preserve flow through the incorporation of narrative within the interface. This incorporation conjoins attention to winning / losing with the pleasure of story.

5.6 Genre

Genre is a term used in many media to classify the different types of works and artifacts in the media. In traditional media like movies and novels, genres are differentiated mainly by the nature of the story – comedy, horror, science fiction, and so on. Genres can also be differentiated by the styles of the craft, such as film noir and expressionist cinema.

Genre is not only a good method to group the different works, it is also what the audience uses to base their expectations for the works. As Nick Lacey (2000) states, ***"Once a text has been identified as belonging to a particular genre, then the reader has certain expectations about what will happen and what rules apply in this particular narrative world"***. Thus for videogames, players can expect to encounter a high degree of violence and gore when they pick up games in the horror action adventure genre, and they can certainly be sure there

would not be much violence and gore when they pick up games in the puzzle genre.

In videogames, genres are mostly classified by the nature of their gameplay: role-playing, action, simulation, shooters, and so on. Sometimes the perspectives or point-of-views the games use are also used in the definition of the genres, for example first-person shooters games. Different journalists or reviewers (such as **Gamespot**, http://www.gamespot.com/) may have a different set of criteria for the classification of the genres, the underlying merits however are more or less similar to one another.

The following is a list of genres of videogames studied in this research with a brief explanation, as well as some well-known games under each genre:

- **Action Games:** Games which emphasize the use of the reflexes of the players.
  Examples: *Street Fighter* series, *Tekken* series.

- **Role-playing Games (RPGs):** Games which players assume the role of a single or a group of characters and the emphasis is on character and story development.
  Examples: *Final Fantasy* series, *Ultima* series.

- **Racing Simulations:** Games which simulates real world driving or racing experiences.
  Examples: *Gran Turismo* series, *Need For Speed* series.

- **Physical Interactive Games:** Games which require physical interactions that reflects real world behaviours.
  Examples: *EyeToy* series, *Dance Dance Revolution* series.

- **Action Adventure Games:** Games in which the emphasis is on the players' experience in relation to the environment of the game.
  Examples: *Resident Evil* series, *Prince of Persia* series.

- **Platform Games:** Games which the gamespace appears to be 2D and are normally a series of platforms.

Examples: *Super Mario Brothers* series.

- **First-person Shooters:** Games which take the first-person point-of-view and involve mainly shooting or attacking the enemies heads-on.
  Examples: *Half-life* series, *Doom* series.

- **Strategy Games:** Games with a heavy emphasis on distribution of units and resources.
  Examples: *WarCraft* series, *Age of Empires* series.

- **Massive Multi-player Online Games:** Games which allow thousands of players to play and interact with one another in an online environment.
  Examples: *Ultima Online*, *the World of WarCraft.*

5.7 Point-of-View (POV)

The point-of-view (POV) determines the position which the interactor is 'inserted' into the storyworld. The three most-often used POV optical perspectives in videogames are **first-person**, **third-person,** and **god-view**. Although there are many other sub-categories such as **third-person trailing** (cameras following the character as they move about the stage) and **isometric** (a fake 3D POV with a fixed 45 degrees, top-down perspective), they can be considered as variations of the three main perspectives. The following are definitions for the three most-often used POVs:

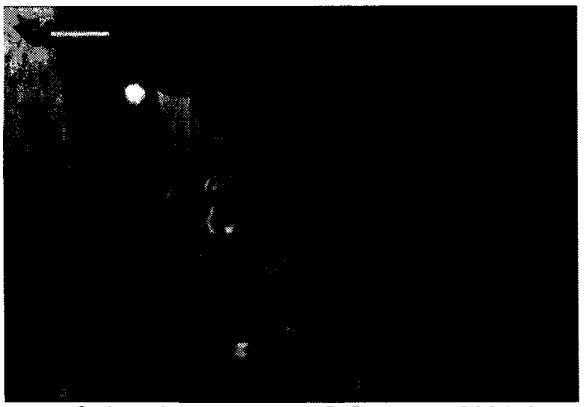
- **First-person POV:** In a first-person POV (**Figure 5.1**), the interactor is inserted directly onto one single character; thus seeing and only seeing what the character would see through the character's eyes.

Figure 5.1: First-person point-of-view from *Killer 7*

Screen capture, *Killer 7* (© Capcom, 2005, by permission).

- **Third-person POV:** In a third-person POV (**Figure 5.2**), the interactor is often inserted as an object on the stage with a fixed perspective of the scene. Shows more of the relationship between the character and the environment and less direct identification with the character.

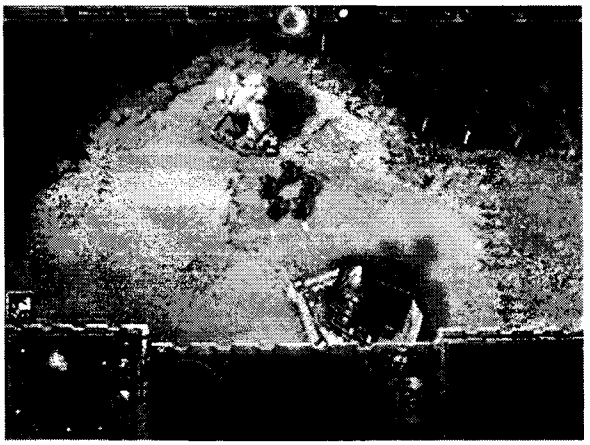
Figure 5.2: Third-person point-of-view from *Onimusha: Warlords.*



Screen capture, *Onimusha: Warlords* (© Capcom, 2001, by permission).

- **God-view POV:** In a god-view POV (**Figure 5.3**), the interactor is presumably watching the storyworld from the sky as if watching from God's point of view. Even more association with the environment and less direction identification with any single character.

Figure 5.3: God view or top-down POV from *Warcraft III: The Frozen Throne.*



Screen capture, *Warcraft III: The Frozen Throne* (© Blizzard, 2003, by permission).

5.7.1 Fixed and Free Camera

As a result of improved technology, many of today's videogames offer the players the freedom to move the POV, or the 'camera', during gameplay. In some games this option may be limited, offering them to move the camera freely within a confined range. For example in *WarCraft III: Reign of Chaos* (WC3) the player is given the option to zoom in from the default god-view POV, focusing on individual units and revealing more details.

Other than aesthetic purposes like in *WC3*, the design decision of whether using fixed or free camera may depend on the designers' assessment of the players' desire or need of pleasure versus performance. Further discussion on this topic can be found in later chapters.

There is also a relationship between the use of fixed or free camera and the narrative experience. Take for example Capcom's *Resident Evil 4* (Capcom, 2004). This action adventure game uses the third-person trailing as the default POV, and offers the option for the players to move the camera on a rather

restrained course during gameplay. The players can rotate the camera using the right analog stick on a pivot for about forty degrees sideways, and about thirty degrees up and down; the camera resumes default position once the player releases the analog stick. The designers choose not provide the players with complete freedom on the camera movement since it could ruin the narrative pleasure by exposing contents unintentionally.

CHAPTER 6: GAMES AND STORIES

In the debate between ludologists and narratologists, the narratologists came under fire because they saw games as a storytelling medium. Ludologist Adams Ernest (1999)[7] argues one of the biggest problems of adding interactivity to narratives is that the freedom provided by interactivity breaks the narrative flow. This argument echoes Bolter and Grusin's (1999) concept of remediation – a process that requires the interactor to shift consciousness between the state of immediacy and the state of hypermediation.

Although there might be other factors pulling the interactor away from the immersive state of immediacy during an interactive experience, in many cases the interactor is forced to do so because of the demand of the interface. The interactor spends valuable time and effort trying to figure out how to work the interface so he/she can progress further into the narrative, or sometimes even just to start playing. In interactive narratives the interface channels the interaction, and the interaction drives the narrative.

Many scholars and researchers of videogames try to identify the similarities and differences between games and stories. Assuming a middle ground in the discussion, Henry Jenkins (2004) states a few general hypotheses outlining the relationships between games and stories:

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[7] Ernest, A. (1999). *Three Problems for Interactive Storytellers.* Ernest lists three problems of interactive storytelling: 1. the problem of amnesia. 2. the problem of internal consistency. 3. the problem of narrative flow.

1. **Not all games tell stories.**

2. **Many games do have narrative aspirations.**

3. **Narrative analysis need not be prescriptive.**

4. **The experience of playing games can never be simply reduced to the experience of a story.**

5. **If some games tell stories, they are unlikely to tell them in the same ways that other media tell stories.**

These hypotheses should be less controversial since they do not presume the point of view of either the narratologists or the ludologists, but rather aim to describe the possible relationships between games and stories.

6.1 Ludology versus Narratology

The relationship of games and narrative is problematic at several levels. At the highest level, the ludologists and the narratologists contest the fundamental relationship between game and story; narratologists argue games are similar to other forms of media that tell stories, while ludologists argue the focus should be on the mechanics of gameplay. This thesis assumes a middle ground in this debate: that a game experience does not necessarily involve story, but that in some games story adds to the player experience. It addresses one of the theoretical difficulties inherent in this assumption. The classical story experience is enhanced through a surrender to the narrative, or the willing suspension of disbelief.

Bolter and Grusin (1999) label this experience immediacy, where the user 'looks through' the interface and becomes engrossed in the storyworld. However,

they see gameplay as a different model, one of hypermediation, where the user 'looks at' the interface in order to exercise conscious control over navigation and decision-making. The problem is a potential disconnect between the immersive surrender to story experience and the hypermediated immersion in game play and decision making (Csikszentmihalyi's (1994) state of **flow**). Bolter and Grusin (1999) argue that a user can remediate this experience, and oscillate between narrative pleasure and the pleasure of control and action. Lev Manovich (2001) maintains that this ability to oscillate between ***"looking through the screen"*** and ***"looking at the screen"*** is inherent in the language and practice of new media experience, and that contemporary users are adept at this switch.

6.2 Games Are Not Stories

Although games and stories do share some structural similarities such as the definition of gameplay and narrative discussed earlier, they do have fundamental differences which are the source of all troubles for designers who try to come up with the perfect rendition of an interactive narrative. The following is a short list of some of these fundamental differences between games and stories.

6.2.1 Interactive versus Non-interactive

The most obvious difference between a traditional narratives found in books and cinema and electronic videogames is that games are interactive and

traditional narratives are not[8]. That being said, storytelling methods in each medium should be somewhat different, if not completely different.

Novels and movies and other types of non-interactive narratives tell story by presenting the story to the audience in a direct, unidirectional way. The reader may choose to close the book or shut his/her eyes and stop the story from reaching the reader, but the reader is always in a relatively passive situation which narrative contents are being fed to the reader by the medium. In other words, the media are the storytellers. In games however, the players are the ones telling the story. As Adams (1999) states, ***"there's this conflict that arises between the player's desire to do as he chooses, and your desire to impose a plot and characterization on him."***

Like many other ludologists, Adams (1999) believes interactivity and narrative are two opposites: ***"interactivity is almost the opposite of narrative; narrative flows under the direction of the author, while interactivity depends on the player for motive power".*** He argues games would have to sacrifice some of the best things about stories for the sake of interactivity.

6.2.2 Linear versus Multi-linear

Traditional stories are linear; even if there are choices or different paths in a story, the decisions are already made when the audience perceives the story. Costykian (1994) states that: ***"Stories are inherently linear. However much***

[8] Note that in terms of Zimmerman's (2000) levels of interactivity discussed earlier, traditional narratives are still considered interactive. However the non-interactive claim here refers to the lack of Zimmerman's third level of interactivity, explicit interactivity. Clearly traditional media forms such as books support interactivity at level one (cognitive), level two (functional), and level four (cultural) participation.

characters may agonize over the decisions they make, they make them the same way every time we reread the story, and the outcome is always the same". Consider the following micro-narrative of a possession in the story of a basketball game:

"John takes the inbound pass, dribbles past two defenders in mid-court and sees both Mike and James are open on either wings of the court. Knowing Mike is the better shooter, one defender rushes to him, leaving the lane open. John sees this opportunity, drives right to the basket and scores."

In this story the protagonist may have had many choices such as passing to different players or try to score himself, but when the story is told the decisions are already made, making the story linear.

If the same plot is put into a videogame, the audience becomes the playmaker and decides what decision the protagonist would take. Depending on how the game is designed, the result of every decision may have a different result. The player may let John shoot from the outside, pass to Mike, pass to James, or drive to the lane like what happened in the story. Every different decision the player decides to choose may create a different story, making the game multi-linear.

6.3 Games Can Tell Stories

As much as ludologists claim games and stories are two different identities, they cannot deny the fact that games, as a whole or in part, have the ability to tell stories like Jenkins (2004) suggests. Costikyan (1994) also reinforces this claim

and outlines a number of methods and factors of how games can be strengthened by narrative associations such as colour, simulation, role-playing, and so on[9].

J. Rush (2006) of the Department of Film and Media Arts at the Temple University looks at the relationship between the player's control and the system's representation. Although he argues that the embedded contents in a videogame, such as the pre-planned puzzles or restricted point-of-view, makes videogames not free of narration or narrative agency, he does agree that the some of the videogame's representation (he calls it ergodic[represented][10], which is the responsive feedback of the videogame system) contains narrative content. He says that ***all ergodic[represented] acts have meaning; they all represent a shaping of the game world. For instance, when I roll the mouse, the screen rotates around the fixed axis of my position creating the illusion is that I am looking without moving***. Some of the other game components Rush talks about that may conduct narrative acts include the visual perspective, the image, and the sound.

Not only do game elements have the ability to tell stories, stories can also help producing games that are more interesting, as they allow for more narrative association on top of the pleasure from interacting with the system. The following is a short list of a few key elements in videogames that have the ability to tell stories or can have high degrees of narrative association.

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[9] Costykian (1994) outlines the following as **The Other Things That Strengthen Games:** diplomacy, colour, simulation, variety of encounter, position identification, role-playing, socializing, and narrative tension.

[10] Rush (2006) uses the term ergodic[directed] to refer to the player's controls (input) and the term ergodic[represented] to refer to the game's presentations (output). The term ergoic was originally used by Aspen Arseth to describe a ***"type of discourse whose signs emerge as a path produced by a non-trivial element of work"*** (Arseth 1999).

- **Back Story:** Back stories act just like any story written in a novel; they are normally textually or verbally narrated descriptions of the storyworld and backgrounds of the characters. This element of the game exists mainly in the users' manual, the introductory cinematics, or cut scenes.

- **Graphics:** Graphics in games, animated or still alike, tell stories the same way paintings or animations do. They are the visual representation of the storyworld and the events happening around the characters.

- **Sound (Music):** Sounds acts the same way they do in other media – they create auditory association to the visual representations of the graphics. Music sets the mood of the story.

- **Interface:** The user interface in games is the channel through which the players immerse their consciousness into the storyworld; it is also the channel through which the interactive system convey feedback to the players. The following chapters and the core of the thesis discuss how the interface can be designed to incorporate narrative elements.

CHAPTER 7: NARRATIVE INTERFACE

As discussed earlier, Bolter and Grusin (1999) argue that during an interactive experience the interactor switches back and forth between the states of immediacy and hypermediacy. This shift of consciousness forces the interactor to break away from the immersive state of the narrative content in order to interact with the system and make choices or responses that would trigger consequent narrative contents. In videogames this process can be described as the player constantly exercises volition in order to progress further into the game and immerse back into the storyworld.

A well-designed game should have interface elements that are efficient and effective enough to allow players to make accurate decisions, as well as a storyworld powerful enough to allow player immersion in between explicit choices. Better yet, the interface elements should merge with the storyworld seamlessly, allowing the players to exercise volition without breaking Coleridge's (1905) willing suspension of disbelief.

But to achieve this level of perfection is not easy, due to the contrasting nature of the two states – the active exercise of choice (hypermediacy) and the immersion into storyworld (immediacy). If designers are having a difficult time achieving this goal, they should at least design an interface that minimizes the disruption of the decision-making process and reduce the awareness of oscillation.

Even if some disjuncture is inevitable in videogames due to their interactive nature, there are ways to narrow this gap and maintain the flow of the videogame experience. The method explored in this thesis is to identify strategies that reduce the awareness of oscillation and therefore maintain the integrity of the flow experience.

In his research, Jim Bizzocchi (2003) addresses a single interface form – the cursor, and argues that design strategies can be applied onto the interface elements to help suture any disjuncture. Two such strategies are identified in Bizzocchi's research. The first is the inclusion of narrative sensibilities throughout the entire work; the second strategy is to map the functionality of the cursor to a particular narrative goal.

Bizzocchi concludes that by incorporating narrative into the design of one interface form, the cursor, allows the players to interpret narrative information such as theme, emotion, and character during the interactions. This observation is crucial as it shows that it is possible to extend the narrative of story onto the interaction of gameplay, thus allowing a reduction in the awareness of oscillation.

Using Bizzocchi's research as a starting point, more design strategies can be identified to narrow the gap between the narrative of story and the interaction of gameplay. These two strategies are discussed in further details in the next chapter.

7.1 Closing the Gap – Transparent Immediacy

Both of the strategies identified in Bizzocchi's (2003) research aim at achieving **immediate transparency** (or simply **transparency**), which is an interface design outcome this thesis considers as one of the keys to experiential gaming and the reduction of oscillation.

According to Bolter and Grusin (1999), the medium is considered transparent when ***"the user is no longer aware of confronting a medium, but instead stands in an immediate relationship to the contents of that medium"*** [11]. Thus, a transparent interface is one that could erase itself from the process of interaction, bringing the interactor to an immediate relationship with the narrative content.

Bolter and Grusin (1999) also suggested three strategies to achieve transparency on other more traditional media: **Linear Perspective**, **Erasure**, and **Automaticity**. Even though the example they used for discussion was painting, the merit of the strategies can be applied to other new digital media including videogames.

- **Linear Perspective:** A technique first used in paintings to create the illusion of depth. If executed properly, the surface of the painting dissolved and presented to the viewer the scene beyond.

- **Erasure:** The ability of the interface to erase itself from the process of perception. The original use of the term was seeking materials that would hide evidence of craft, such brush strokes.

[11] Butler, Jay David and Richard Grusin. "Remediation." Configurations, 4.3 (1999) page 24

- **Automaticity:** The ability to automate the technique of linear perspective. The photographic lens and contemporary 3D programs are examples of technologies that automate the production of images with linear perspective.

With today's computer technology, linear perspective and automaticity can be achieved without too much work from the designers. 3D programs can generate photorealistic images that follow the rules of linear perspective, and according to Manovich (2001), new media, including computers, automate media production processes.

Erasure is more problematic because one can never hide all of the evidence of remediation – the presence of the media form, from the audience. A photograph of scenery hanging on the wall may fool one to believe it is really the scenery outside, but as soon as one recognizes the frame around the photograph the immersion breaks and it is back to the reality – there is no scenery but a photograph.

If designers are having difficulties hiding the interface's presence, possible solutions may be found in various strategies of **narrativization**. According to the Oxford English dictionary, narrativization means ***the imposition of a narrative or narrative-like elements on real experiences or events; presentation or interpretation in terms of a story or narrative***[12]

By narrativizing the interface elements, it allows the interface to blend better with the rest of the narrative the storyworld is trying to construct. This would make the presence of the interface less felt and apparent, thus supporting

[12] Oxford English dictionary. http://dictionary.oed.com/. Accessed April 20, 2007

a more transparent immediacy. At the same time, a narrativized interface supports the gameplay flow phenomenon by reducing the oscillation between two user states – the experience of story and player attention to gameplay.

The heart of the thesis is to identify the various design strategies the designer can use to narrativize the interface elements. Theories supporting these design strategies, as well as applications of the strategies in existing videogames in the market are also discussed further in detail in the next chapter.

7.2 Narrativization and Learning Curves

There is a relationship between the amount of narrativization of the interface and the slope of the learning curves of the interface. In most cases, a more narrativized interface would make the interface easier to learn and master. This argument is supported by Ben Schneiderman's (1983) theory of **direct-manipulation**.

Schneiderman used the term direct-manipulation to describe interfaces that can ***"generate a glowing enthusiasm among users that is in marked contrast with the more common reaction of grudging acceptance or outright hostility"***. This concept, when applied to interface design in games can be considered as to apply ***"continuous representation of the object of interest"***[13] onto the interaction behaviours. According to Schneiderman, direct-manipulation interfaces follow

[13] Shneiderman (1983) suggested three principles for "Direct Manipulation" interfaces: 1. Continuous representation of the object of interest. 2. Physical actions or labeled button presses instead of complex syntax. 3. Rapid incremental reversible operations whose impact on the object of interest is immediately visible.

principles of a syntactic/semantic model, and have the following advantages compared to a non direct-manipulation interface:

- ***Novices can learn basic functionality quickly, usually through a demonstration by a more experienced user.***
- ***Experts can work extremely rapidly to carry out a wide range of tasks, even defining new functions and features.***
- ***Knowledgeable intermittent users can retain operational concepts.***
- ***Error messages are rarely needed.***
- ***Users can immediately see if their actions are furthering their goals, and if not, they can simply change the direction of their activity.***
- ***Users experience less anxiety because the system is comprehensible and because actions are so easily reversible.***
- ***Users gain confidence and mastery because they initiate an action, feel in control, and can predict system responses.*** (Schneiderman, 1983, pp. 64-65)

In short, the narrativized interface elements can at the same time lead the interactors to become more engrossed into the storyworld and to more easily master the mechanics of gameplay.

Going back to Bolter and Grusin's (1999) argument on immediacy, hypermediation, and remediation, interfaces that utilize narrativization design strategies tend to erase itself more from the process of interaction, thus making them more transparent. As soon as the interface establishes transparency, it becomes part of the interactor's basic instinct thus allowing faster reaction and less thinking (of the interface) involved in the interaction. A good example of such an interface establishing transparency is the computer mouse. It has become so

much of a basic instinct of computer users today that no one thinks about it any more – we just use it.

7.3 Narrativization and Cognitive Science

Hutchins *et al.* (1986) developed a framework which can be used to evaluate the 'directness' of interfaces; this framework involves two 'gulfs', or gaps, between the system and the interactor. The **gulf of execution** is the distance between the interactor's goals and the interactions required to achieve the goals through the interactive system. The **gulf of evaluation** is the distance between the feedback of the interactive system and the interactor's goals.

In videogames, the gulf of execution is the gap between the player's inputs and the game system, and the gulf of evaluation is the gap between the system's output and the player's perception.

Preece *et al.* (1994) consider the research of Hutchins *et al.* (1986) and summarize that the gulfs can be bridged with the following methods:

- ***Change the way they currently think and carry out the task towards the way the system requires it to be done.***
- ***Design the input characteristics to match the users' psychological capabilities.***
- ***Change the users' interpretation of the system image and evaluating it with respect to their goals.***
- ***Change the output characteristics of the system.*** (Preece *et al.*, 1994, pp. 276)

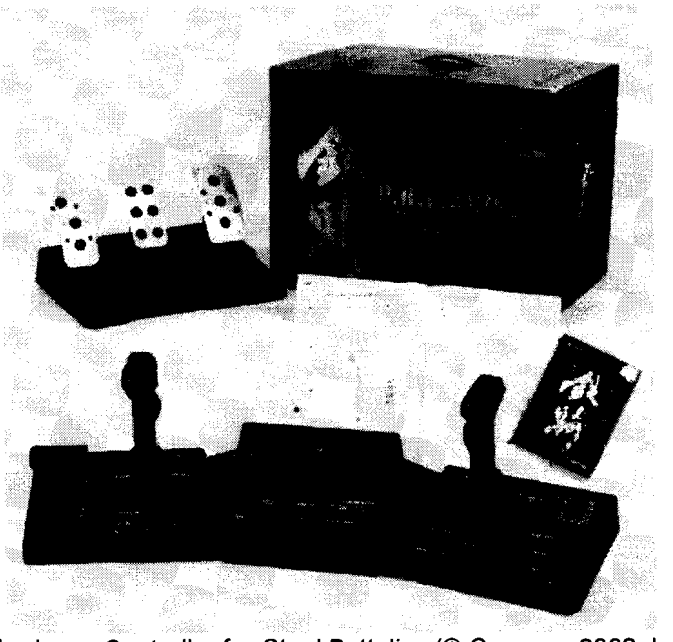
The narrativization design strategies follow similar principles to achieve the desired results which offers the player richer, more enjoyable interactive

experiences without having to invest significant time to learn and struggle with the system. This helps reduce oscillation, as it allows the player's consciousness to oscillate less between the interaction and the interface.

7.4 Over-Narrativization

Although in most cases applying the narrativization design strategies onto the interface would result in smaller learning curves and making the game easier to play, in some game examples a highly narrativized interface actually makes the game more difficult to play. For example *Steel Battalion* (Capcom, 2002) for the Xbox console system. In *Steel Battalion* the player controls a battle-mech known as the Vertical Tank, and the development team took the idea of applying narrativization onto the design of the hardware interface to the extreme by creating a control device which resembles the cockpit of the Vertical Tank (**Figure 7.1**).

Figure 7.1: The hardware controller developed solely for the *Steel Battalion*



Photograph, Hardware Controller for *Steel Battalion* (© Capcom, 2002, by permission).

The controller has a total of over forty buttons, including two full-size joysticks and a foot panel consisting of three pedals. Although most buttons are used to control mission-related actions such as movement and firing weapons, the controller is created in such great details to have dedicated buttons even for actions as small as controlling the windshield wipe. For most players just figuring how to use the controller can be quite a learning experience itself, as according to Gamespot[14], an online game resources centre, the average learning time for this game is more than two hours.

For many who have played and enjoyed the game, *Steel Battalion* indeed brings them a unique and highly narrativized gaming experience. Not only do

[14] Gamespot Online Review of Steel Battalion, http://www.gamespot.com/xbox/action/steelbattaliononline/review.html?mode=gsreview. Accessd: Jan. 11, 2007.

they have to learn how to play the game, they have to learn to play as if they are really inside the cockpit controlling the powerful and complicated Vertical Tank. However, the difficult learning curve as a result of narrativizing the interface to the extreme would also keep many players away. To some this pursuit of realism may even be a little excessive, but as Gamespot's reviewer Jeff Gerstmann writes:

> ***And while there's a ton of buttons and options, so many of them are secondary and redundant that the game really could have been done on a regular Xbox controller--yet that would not only take away the game's most unique aspect, but also put an even greater focus on the deficiencies found in the gameplay.***[15](Gerstmann, 2002)

7.5 Pleasure versus Performance

The need to apply narrativization design strategies onto interface design is arguable, as some players actually prefer un-narrativized or even de-narrativized interface that would allow them to perform better. For instance, as Jeff Gerstmann (2000) suggests in his review for *Steel Battalion*, the use of dedicated buttons to control functions that appear redundant may cause the players to struggle on their performance in the game. Although it may not be as much 'fun' from the aesthetic perspective as playing the game in a cockpit-like environment the controllers promise, the players have greater chances of performing better.

However, there are no standards for how much or how little designers should narrativize the interface elements. The perfect balance lies on a continuum based on the different players' desire to pursue narrative pleasure or performance in videogames. Going back to the example of *Steel Battalion*, even

[15] Gerstmann, J. (2002). *Steel Battalion for Xbox Review.* Gamespot. http://www.gamespot.com/xbox/action/steelbattalion/review.html. Accessed: Jan. 11, 2007.

though Gerstmann suggests players are better off playing the game using the standard Xbox controller, there are players who treat struggling with the interface as the fun part of the game. This may be because of individual differences as well as experience and cultural differences.

That being said, a well-designed interface should utilize narrativization design strategies just enough to both incorporate narrative associations and simplify the gameplay learning curve without jeopardizing the player's desire to perform well in the game, thus offering the player the best platform to maintain a balance between narrative pleasure and performance.

CHAPTER 8: STRATEGIES FOR NARRATIVIZED INTERFACE DESIGN

As stated earlier, the goal of this thesis is to identify narrativization design strategies that would help reduce the awareness of oscillation in today's videogames. After the literature reviews and the study of related researches, I started to see variations or preliminary versions of the design strategies I propose in this chapter.

In this chapter I will list and describe the design strategies identified in the research, as well as any theories applied and examples that utilized the strategies.

8.1 Strategy One: Look of the Interface

Narrativize the look of the interface is an obvious and often used design strategy for the integration of gameplay and narrative experience. Designers can achieve this by making the interface elements look and feel as if they are part of the storyworld. They can also apply this strategy onto the objects in the game, such as buildings, landscapes, and characters. If the story is about a knight's adventure in the medieval times, one would give the knight the proper gear (for instance, plate armour, a horse, and maybe a shield and a lance) so he 'looks' like he is from that particular storyworld.

This strategy was not always applicable back in the early days of videogames, as computing power was not powerful enough to process images as efficiently as today. Narrative in these early games existed mainly on the back cover of the box and maybe as a scroll-down during the introduction. The visual representations in these pioneers, such as *Pong* (Atari, 1972), were merely just a few moving blocks on the screen.

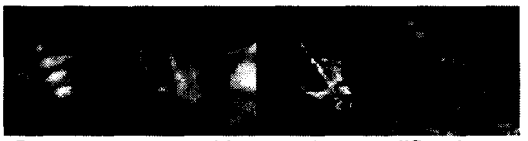
As technology advanced and more games were being produced, designers and players alike were no longer content with manipulating blocks on the screen and trying to convince themselves these moving blocks are the objects the designers claimed they were. We started to see more pixels used on the objects, and the objects began to more closely resemble the things they were representing. Later we saw realistic pictures (some games used photographs), animated or sequenced pictures, pre-rendered animations in cut scenes, and finally real-time animations in today's latest games.

Being a key element of the game, the interface was also given some attention in terms of blending narrative elements into the design of the interface. What most designers would do is create interface elements that have the same look and feel of the rest of the storyworld. As Bizzocchi (2003) suggests, the plot, the theme, the characterization, and the mood of the narrative can be so the entire experience maintains a consistent look and feel.

In the example shown below, the designer replaced the mouse cursor with icons reflecting the faction the player is currently playing on. In *Warcraft III: Reign of Chaos* (Blizzard Entertainment, 2002) the interactor gets to choose

between four factions, or races, to play as the Human, the Orc, the Undead, or the Night Elf, and the designers used icons representing the hands of each race as the mouse cursor (**Figure 8.1**). Not only does this modification of the cursor form serves the purpose of reinforcing the current faction the players are playing with, the faction-unique cursors brings a more unified feel to the interface element so they do not appear 'out of context' with the rest of the storyworld.

Figure 8.1: Mouse cursors representing different factions in *Warcraft III: Reign of Chaos*



Screen capture with cropping modifications,
Warcraft III: Reign of Chaos
(Blizzard, 2002, by permission).

Henry Jenkins (2004) discusses how the storyworld, or the **game space** as he refers to, can be a great mechanism to construct narrative in videogames. He refers this as **environmental storytelling** and argues spatial stories create the preconditions for an immersive narrative experience in at least one of four ways:

1. ***Spatial stories can evoke pre-existing narrative associations.***

2. ***Spatial stories can provide a staging ground where narrative events are enacted.***

3. ***Spatial stories may embed narrative information within their mise-en-scene.***

4. ***Spatial stories provide resources for emergent narratives.***

Theme-based narrativization design strategy is able to convey narrative expressions through the four ways suggested by Jenkins, as it helps construct a highly narrativized gamespace with the use of themed images and graphics.

Some may argue the mere usage of themed images and graphics on interface elements does very little in adding to the immersive experience of the overall gaming. This may be true to some extent – pretty pictures alone do not make a good game; but these themed images and graphics are a step towards the creation of a unified and consistent narrative storyworld.

8.1.1 The Expressive Use of Craft

In Bizzocchi's (2003) research he identifies that the effects of the theme-based narrativization design strategy are similar to those of expressive use of craft to convey emotion in cinema. Expressionist cinema, a unique genre of cinema, even takes extreme measures in their craft; by exaggerating the set, the costumes, characters' makeup, the camera angles, and lighting, the craft conveys a strong sense of emotion.

For example in the famous German expressionist film *The Cabinet of Dr. Caligari*, the exaggerated use of set design expresses an intense emotion which echoes with the main theme of the story by reinforcing the feel of distortion and awkwardness.

Bordwell & Thompson (1994) states that expressionism is a style which ***"reacted against realism and turned toward extreme distortion to express an inner emotional reality rather than surface appearances".*** Also echoing Salen &

Zimmerman's (2004) arguments, theme-based narrativization helps create and complete the magic circle by establishing an emotional reality through expressive use of appearances.

Bizzocchi argues that expressionist cinematic technique is an extreme subset of a broader phenomenon: the expressive use of film craft. Bizzocchi (2003) states that ***"unlike the expressionists, not all filmmakers exaggerate craft in order to reflect these narrative concerns. However, most accomplished filmmakers <u>use</u> craft in order to do so"***. The expressive use of cinema's subsidiary modes of representation and meaning can include set design, lighting, sound effects, makeup, costume, etc.

The same can be said for videogames, as the graphics and the visual representation of videogames may not appear to be 'exaggerated' the same way as the craft in expressionist cinema, but their underlying theory and the effects achieved are comparable.

In addition to these visual representations, sound can also contribute to a more robust narrative environment. When taken together, these visual and auditory elements can create an overall **narrative texture**, which sets a tone for gameplay experience. Besides giving an aesthetic identity to the overall user experience, narrative texture has the ability to amplify and emphasize individual narrative elements such as emotion, character, storyworld, and genre, thus colouring the experience of the gameplay.

8.1.2 Emotion and The Look of the Interface

Thompson (1993) recapitulates the concepts and theories on cinema and filmmaking of the legendary filmmaker Sergei Eisenstein and other famous filmmakers in his publication *The Cinema of Eisenstein* (Thompson 1993); in this publication Thompson summarizes the theories behind how images convey emotions in cinema. Thompson states that:

> ***Eisenstein maintains that the artist must feel the theme that he or she wishes to impart. Once this image is traced to its sources in concrete experience, the artist will device and arrange objective representations that will induce the spectator to form such an image. The spectator is drawn into a creative act that is guided by the author but that also offers a degree of participation and discovery.*** (Thompson 1993, p. 174)

According to Thompson, the Hegelian literary critic Vissarion Belinsky asserted the idea of **the artistic image**. Thompson says of Belinsky ***"claimed that the artwork does not simply embody an idea, as science could, but also possesses a quality of emotion, or 'pathos'*** *(pafos)"* (Thompson 1993, p. 176).

This thesis argues for a similar use of expressive narrative craft in the service of game design. When applied to the interface, it extends the effects of the artistic image from the narrative content onto the interactive process by adding artistic images onto the appearances of interface elements such as the cursor, menus and buttons.

8.2 Strategy Two: Expressive Indicators of Gameplay States – Game Metrics

Other than embedding narrative information or implications into active utilitarian interface elements such as cursors and menus, narrative information can also be embedded within the interface which is presented to the players. The first narrativization design strategy discussed earlier provides a quick solution as narrative aesthetics can be conveyed via the themed appearances of the objects inside the storyworld. However this may only work for narrative information that requires a lower level of active player-interpretation, such as the theme of the game. Metric, or informative narrative contents on the other hand, require more interpretation by the players, thus a different and more thoughtful approach is needed.

Some game metrics can also be seen as representations of narrative concepts such as the player, the avatar, and the storyworld. This design of narrative into the heart of the gameplay can also be expressed in the interface in such a way as to solidify the relationship between the design of the game and the experience of narrative. The interface should make the connection between gameplay mechanics and the storyworld (narrative) as transparent and immediate as possible to the player. Two keys to evaluate this strategy are: is the representation clear, and is it narratively inflected.

Metric information refers to any descriptive information that provides the player an insight to the current game state. The following are a few types of descriptive metric information seen frequently in most videogames:

- **The player's status:** the current status of the player in relation to the game's progress: how many enemies killed, how far the player has progressed in the game, how many resources is at the player's exposal, and so on.

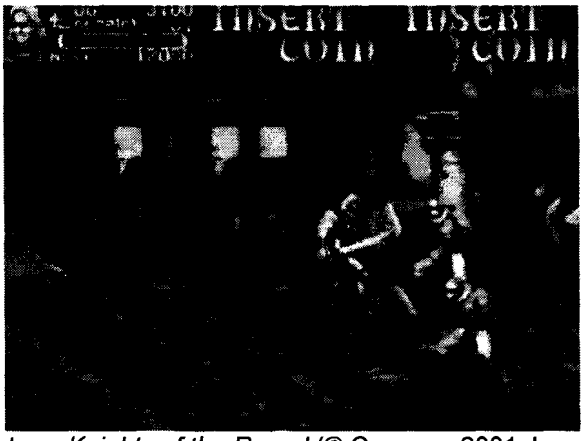
- **The avatar's status:** the current status of the avatars in the game: life (health), condition, special abilities, levels, and so on.

- **The storyworld's status:** the current status of the storyworld, or the game world: the areas explored (or unexplored), the quests solved (or unsolved), the number of stages left (or passed), and so on.

A key trait of descriptive metric information is the fact that it reflects the changes of the game states. The emergent and dynamic nature of videogames requires information to be presented to the player constantly (and often times instantly) in order for the player to respond accordingly.

Many designers would take the most direct approach to implement descriptive metric information into the game design – text. The use of words and numbers provides a simple yet effective way to convey information in an efficient manner. Many designers would also use graphical meters or bars in addition to text to provide a clearer visual representation, as can be seen in many platform or action adventure games such as *Knights of the Round* (Capcom, 1991) in **Figure 8.2**.

Figure 8.2: Bars and meters are used in addition to text to display descriptive metric information in *Knights of the Round.*



Screen capture, *Knights of the Round* (© Capcom, 2001, by permission).

The **expressive indicators of gameplay states** design strategy however, can be applied onto the interface to provide more narrative association with descriptive metric information through the ways they are presented and inserted into the storyworld.

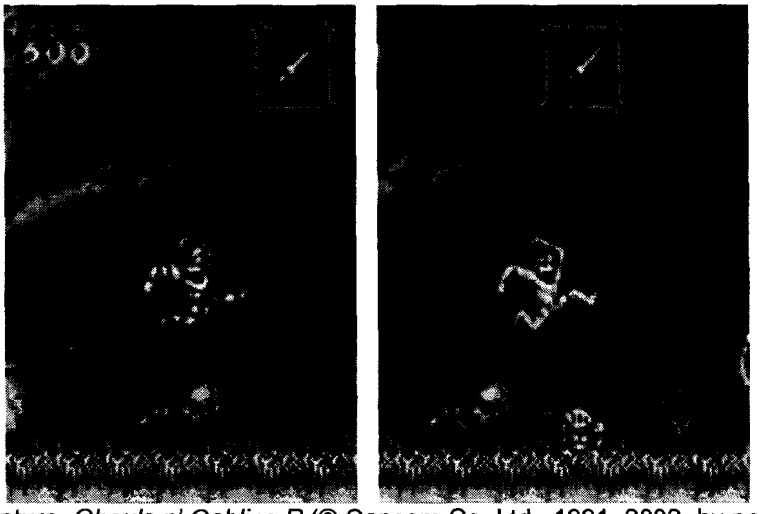
This narrativization design strategy derives mainly from the third way of **environmental storytelling** suggested by Jenkins (2004) – narrative information can be embedded within the mise-en-scene of the storyworld. While some of the examples used in his argument are not videogames (he uses amusement parks as an example), he argues that videogames are also creating space in the virtual world thus the same theories apply.

In *Knights of the Round* (**Figure 8.2**), the red meter on the top left corner of the game space represents the current 'life' the avatar has remaining. By applying the expressive indicators of gameplay states strategy, the same descriptive information is represented differently in *Ghouls n' Goblins R* (Capcom,

1991, 2002). In this game, instead of showing quantified statistic to represent 'life', the designers use the appearance of the avatar to imply the avatar's current life status.

When at full health, the avatar is shown wearing full plate armour (left half of **Figure 8.3**). When hit once by an enemy the avatar loses the armour and would be running around with nothing on but his underpants (right half of **Figure 8.3**). Any more damage to the avatar at this stage would result in death.

Figure 8.3: In *Ghouls n' Goblins R* the designers use the mise-en-scene of the game space to convey descriptive information such as the 'life' of the avatar



Screen capture, *Ghouls n' Goblins R* (© Capcom Co. Ltd., 1991, 2002, by permission).

As discussed, this approach conveys the same descriptive metric information (in this case the current 'life' condition of the avatar) as using graphical meters or text, yet it adds a narrative touch and offers the player additional narrative pleasure when interpreting the information. The naked avatar informs the player that the avatar is vulnerable and will die if any more damage is

taken, and the presentation adds a sense of irony (it appears ironic and funny to me seeing the avatar running around the graveyard fighting ghouls and zombies in his underpants).

This design strategy can be either manifest in screen space or the embedding of narrative and gameplay in real world space in combination with the bridging design strategy discussed in later sections.

8.2.1 Embedded Narratives

According to Jenkins (2004), the need and effects of embedding narrative information within the mise-en-scene of the game space can be seen in other media such as melodrama, which makes use of costume and set designs to project internal states. On top of the narrative conveyed to the audience through normal means such as dialogs and the audience's active construction of story from the plot, the narrativized mise-en-scene serves the purpose of emphasizing, as well as reminding and reinforcing, subtle narrative information. Similar effects can also be seen in the expressionist cinema example in the first narrativization design strategy discussed in the previous section.

Jenkins (2004) argues that the need to make use of the game space to convey narrative information is even more essential for an interactive medium such as videogames. The constant shift of consciousness between the two states may cause the player to overlook narrative contents during the interaction. Thus designers ***"can not assume the player will necessarily locate or recognize the significance of any given element"***, and "***narrative information must be***

redundantly presented across a range of spaces and artifacts" (Jenkins, 2004) so the players get a chance to retrieve important narrative information.

Yet the way to do this must be thoroughly thought of and smartly executed, otherwise the result may annoy the player and reduce the narrative pleasure. In the avatar's 'life' example discussed earlier, the appearance of the avatar in *Ghouls n' Goblins R* also serves as a reminder to the player of what the avatar's current life status is. In the midst of intense mental and physical activities, the player gets another opportunity to acquire crucial information on the current game state while maintaining the flow of narrative pleasure.

There are many other applications of the expressive indicators of the gameplay state design strategy, and embedding narrative information within the storyworld can take various forms. Some of the most often-used and seen examples in videogames include passive artifacts (such as buildings and landscapes), responsive objects (such as non-player-characters you can speak with to trigger conversations), and active events (such as in-game animations acting as micro-narratives).

Regardless of the form it takes, this design strategy has the ability to insert interface elements into the heart of the storyworld. Instead of being a dull part of a static interface such as a life bar on the top of the screen, expressive metrics interface elements take a more expressive role and are able to convey more narrative through their presentation and unity with the storyworld.

8.2.2 Expressive Interfaces

The expressive indicators of gameplay states design strategy has been used on many HCI applications prior to the boom of videogames. Since the introduction of the graphical user interface, usability is no longer the sole purpose of the interface, thus interface elements were also designed to convey meanings through their appearances and presentations.

Expressive interface elements have been used on computer systems to display the current status of the system through ways that convey emotion. For example, the recycle bin on computer desktops running Windows XP would appear to be an empty basket if there are no files in it. When there are files in the recycle bin, the icon would expand a little and show discarded papers inside. Other examples of dynamic, expressive interface include the loading icon of an hourglass, or warning sounds the system makes when the user issues commands the system does not recognize.

The importance of these dynamic expressive interface elements, as the authors of HCI states, is that ***"they provide reassuring feedback to the user that can be both informative and fun"*** (Preece et, al, 1994, p. 143).

8.2.3 Different Forms of Expressive Indications

Expressive indications of gameplay states can use non-visual forms. The following are some commonly-seen forms of expressive indications in videogames:

- **Sound Effects:** auditory representation of indications; for example the crowd may cheer when the player scores a goal.
- **Vibrations:** touchable representation of indications; for example the gamepad may rumble when the avatar fires a weapon or gets hit by the enemy.
- **Change of Functions:** functional representation of indications; for example parts of the interface may become disabled or available after a change of game status such as being hit by the enemy.

These different forms of expressive indications serve the purpose of connecting the expressions to the proper senses of the players. For instance, the rumbling of the gamepad as an expression of the avatar being hit by the enemy connects this information to the corresponding sense, **touch**, of the player, allowing a more direct association between the interaction and the essence of the narrative.

8.3 Strategy Three: Behavioural Mimicking

One of the reasons videogames are such a popular form of entertainment is because they are capable of blending reality with virtual reality through means of interaction. As discussed earlier, similar to traditional media such as movies and novels, games have the ability to bring the audience to a state which disbelief is suspended through series of mental and physical interactions with the storyworld.

But however real the storyworld may appear, the inputs, or the physical involvements of the players, are always transformed and altered from their original forms in order to synchronize, or 'work' with the mechanisms of the game. This often is a limitation of either the software or the hardware components of the game system, which requires the commands issued by the player to be translated into the system's language before the commands can be executed. Thus throwing the football becomes pressing the 'X' button on the gamepad and reeling in the fish you hooked becomes a series of mindless tapping on the 'O' button.

The design strategy, **behavioural mimicking**, tackles this problem by merging the physical involvement of real world with the game mechanisms. In other words, the physical behaviours of the player's interactions mimic that of real life actions. A unique game genre, **physical interactive games**, is assigned to games that utilize this interface design strategy.

In her research, *Design and Evaluation of Physically Interactive Games*, Johanna Höysniemi (2006) states that interactions utilizing the mapping of real life actions has two distinctive features: **control realism** and **feedback realism**. Control realism ***"refers to how accurately game control simulates the equivalent behaviors in real life"*** and feedback realism refers to ***"how realistic the feedback is that the game provides on the player's actions"*** (Höysniemi, 2006, p. 68). A well-designed interface utilizing this design strategy should have high degree of realism on both the control and the feedback of the interaction.

A good example of an application of this design strategy is the *Soccer Craze* mini game in *EyeToy: Play* (Sony Computer Entertainment Europe, Sony Computer Entertainment America, 2003). In *Soccer Craze* the player assumes the role of a soccer player whose goal is to keep the soccer ball bouncing and not fall to the ground (or off the screen); score is given according to the time duration which the player manages to keep the ball alive and the number of bounces the player manages to achieve during that time. The interaction allows the player to perform real life actions that one would take to bounce a real soccer ball using their head.

Soccer Craze provides a high degree of both control realism and feedback realism, as both the action required from the player and the graphical feedback of the game matches accurately to that of a real life event – in this case, bouncing a soccer ball.

8.3.1 Perceptual User Interface

The key to the behavioral mimicking design strategy is the use of **perceptual user interfaces** (PUI). PUI is a term given to interfaces that integrates human behaviors into the interactions. It has become a popular field of human-computer interaction (HCI) and interface design, and is being implemented into many interactive systems besides just videogames. Turk and Robertson say of the PUI:

> ***They seek to make the user interface more natural and compelling by taking advantage of the ways in which people naturally interact with each other and with the world.*** (Turk & Robertson, 2000)

In other words the interactive system would interpret the commands issued by the interactor in their original, natural form of human behaviors, instead of the interactor adjusting their behaviors to issue commands understandable by the interactive system. The most common styles of PUI include the use of gesture, speech, text, vision, and synthetic sounds.

Behavioural mimicking interface has become a rising trend in today's videogames as we can see more interface devices and games are designed to incorporate behavioural mimicking physical interactions. In fact, Nintendo's third-generation videogame console, the *Nintendo Wii* (Nintendo, 2006), emphasizes the use of this design strategy by developing the default controllers to support a large number of physical interactive games, including *Wii Sports* (Nintendo, 2006), a collection of sport simulation mini games that comes with the console. There are more reasons and factors contributing to this phenomenon than the

narrative attraction these interface devices bring by mimicking real world behaviours:

8.3.2 Utilizing Skills Practiced In-game in the Real World

Höysniemi (2006) points out that through performing behavioural mimicking inputs, the player may be able to utilize the skills practiced in the virtual space in the real world. Höysniemi states if a player plays fighting games which require extensive use of punching and kicking, the player's physical condition and cardiovascular fitness may improve as a result. This claim has been proven in the medical field of laparoscopic surgeries, as the research by researchers at the Beth Israel Medical Center (Rosser et, al, 2007) shows that surgeons who play videogames on a regular basis perform better on laparoscopic surgery simulations[16].

This argument is also supported by both Jesper Juul's (2003) definition of games, which states games can be optionally assigned real-life consequences, and Janet Murray's (1999) transformation pleasure of digital environments, which states that interactive digital environments may have the potential to transform the interactor mentally or physically in the real world.

8.3.3 Attracting Non-gamers

Similar to the effects of metaphors, behavioural mimicking helps the player become accustomed to the interaction by suggesting past experiences similar to

[16] The research by Rosser et, al (Rosser et, al 2007) shows that surgeons who play videogames for at least three hours a week are 27% faster and makes 37% less errors, in laparoscopic surgery simulations, than surgeons who do not play videogames as often.

those interactions; this claim is also supported by Schneiderman's (1987) theory of direct-manipulation discussed earlier. Studies have been done on physical interactive games (Johnson et, al, 2002) and shows that games involving physical interactions may attract new players who otherwise would not be interested in playing games.

In the most recent marketing campaign done by Nintendo for their new generation gaming console – the *Nintendo Wii*, which emphasize the use of behavioural mimicking physical interactions on the gameplay, Nintendo has used player groups that do not appear to be regular gamers. Instead of using teenagers or young adults who seem to be the stereotype of 'gamers' in the advertisements, the *Nintendo Wii* marketing campaign involves player groups such as seniors and females.

8.3.4 Promote Personalized Playing Styles

The famous and popular arcade game *Dance Dance Revolution* (*DDR*, Konami, 1998), a physical interactive game which incorporates dancing moves with the gameplay by allowing the players to tap the inputs with their feet as if they are dancing, is known for its intuitive and fun interactivity. Even after nearly ten years since its release the hardware interface components have only been through minimal modifications, preserving the original two sets of four-button foot panel (for multi-player mode), the big screen, and two support bars for holding and maintaining balance.

As the game becomes popular and attracts all types of players and fans, the player population starts to split into many different groups, each with their own unique styles and approaches towards playing the game. These smaller groups can be classified into two major groups as Höysniemi (2006) points out: **perfect attacking** and **freestyling**. Perfect attackers aim at 'beating the game' and achieve the highest scores possible, while freestylers aim at enjoying the flow of the game from an expressive perspective.

Also derived from the freedom to use real life behaviours in *DDR* are personalized playing styles. Since there is no restrictions or 'right ways' on how the player can play the game, it is more than likely that players would eventually develop their own routines and create their own combination of moves that suit their playing styles, whether perfect attacking or freestyling. I have personally seen two young girls playing the game in an arcade in Vancouver, each performing a different set of their own routines for the same song at the same time.

8.4 Strategy Four: Functional Metaphor

Although the behaviour mimicking narrativization design strategy discussed earlier is a good way to incorporate narrative associations with the physical interaction forms, there are times when certain behaviours in the real world cannot be mimicked and transformed into interactions. **Functional metaphor**, the narrativization design strategy that applies metaphors onto the functionality of the interface elements, is then needed for those behaviours.

Also derived from Bizzocchi's (2003) research is the strategy to apply or reflect narrative elements on to the operative functions of the interface elements. The example used in Bizzocchi's research was the cursor in the interactive narrative piece, *Ceremony of Innocence* (Real World Media, 1997). The piece is a series of interactive puzzles presented as postcards exchanged between the two protagonists; the story is revealed postcard by postcard as the interactor solves the puzzle one at a time. In some of the puzzles the mouse cursor is transformed not just graphically, but also functionally to reflect the narrative theme.

Bizzocchi's research analyzes the puzzles and finds that in quite a few of the postcards the movements of the cursor are spatially or temporally restricted; for example the Pierrot card.

In this puzzle the cursor is transformed into the comic character Pierrot at centre stage. Instead of granting the interactor full control over the cursor as in most interactive pieces or videogames, in this puzzle the cursor has very limited

movements as the interactor can only move the cursor (transformed into the character Pierrot in this case) forward towards screen right, but not backwards towards screen left and trace his steps.

Certain interface design decisions in *Ceremony of Innocence* alter the functionality of the cursor in order to reflect a crucial narrative element – the character of the protagonists. The majority of the 'restricted' postcards are sent by the male protagonist, Griffin, whose constrained and tight personality can be easily identified in his writings on the postcards. On the other hand, the postcards that the female protagonist, Sabine, sends are mostly 'free' in terms of cursor movements and functionality, which reflects her free, unrestrained personality.

The relationship established between the functions of the interface and the character traits of the protagonists adds to the narrative gratification of the interactive experience. Not only are the traits of the characters revealed through narrated contents such as text and vocal narration, the players are also able to interpret these traits through interacting with the game mechanism. Instead of being told what the characters are like, the players get to experience it firsthand - Just how tight and constrained is Griffin? How about him not letting you move your cursor freely on his postcards!

Upon further research and analysis, it is apparent that narrativizing the functions of the interface elements has the potential of achieving more effects than relating to narrative concepts alone. The different applications of functional

metaphor design strategy can be grouped into two types, one that involves a behaviour that is difficult to mimic, or a trait which goes beyond behaviours.

8.4.1 Metaphors

The mapping of narrative elements onto the functions of the interface elements is similar to metaphors in spoken language. Metaphors are a way to describe things using others as a reference; metaphors work very well in communications because they act as **cognitive hooks**. According to Tom Erickson:

> ***A metaphor is an invisible web of terms and associations which underlies the way we speak and think about a concept... Metaphors function as natural models, allowing us to take our knowledge of familiar, concrete objects and experiences and use it to give structure to more abstract concepts.*** (Erickson, 1990, p. 66)

The concept of metaphor can be applied onto interface design, especially onto the functions of the interface elements. A good example of such metaphoric application is the **desktop metaphor** seen in today's graphical user interface (GUI) systems. The desktop metaphor borrows the essence of the objects one would use in the office in the real world (such as files, folders, trashcan, and so on) and map computer commands used in text-based operating systems to these objects. For instance, the **delete** command is transformed into the **recycle bin** object, which metaphorically represents the same meaning of "throwing away unwanted trash".

The desktop metaphor not only maps the visual representation of the objects, the functional control of the interface is also a metaphor. In a text-based command system, all commands are executed via typing the commands out in

the command prompt; for example the actions required to delete a file would be typing out the command '**delete thisdoc.doc**', and hitting the enter key to execute. The desktop metaphor transforms the deleting action by allowing users to **drag** the unwanted files (represented as icons) into the recycle bin, suggesting the actual trashing action one would take in the real world.

Applying Erickson's argument above, this dragging action allows the interactor to take a more familiar experience, throwing trash into the trashcan, and give structure to a more abstract concept, deleting files on a computer.

8.4.2 Functional Metaphor and Character

As discussed above, the functional metaphor narrativization design strategy can be a great method to express the **character** of the protagonists in computer games. In the *Ceremony of Innocence* example used earlier, the characteristics of the protagonists are suggested through the altered functionality of the cursor.

However this suggestion of character is rather recessive due to the fact that the altering of functionality is not consistent throughout the series of postcards (not all postcards contain a cursor with altered functionalities), and most importantly, the interactor assumes more of an observer's role in the exchange of postcards between the two protagonists. In other words the interactor is experiencing the traits of the character authored by the designer.

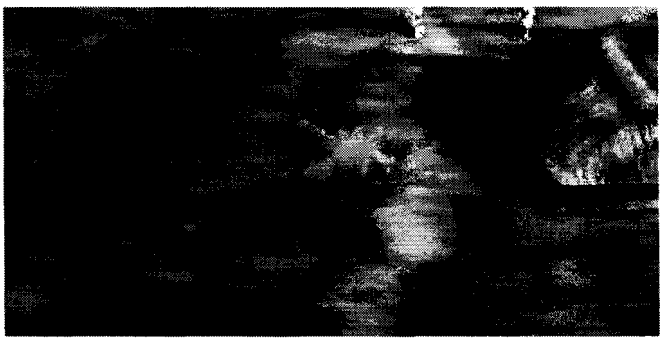
The implication of character by functional metaphors can be more direct for the interactor as an active participant of the story through the same concept of

altering the functionality of the interface. This can be seen in the way player navigates and moves about in the game *Black and White* (Lionhead Studios, 2001).

In *Black and White* the player assumes the role of a god whose goal is to gain the faith of the people and gets worshiped, thus granting the player even greater power. The player wins the faith of the people by performing godlike "miracles" such as creating rain and giving food and supplies to the villagers.

The interface of the game does utilize the theme-based narrativization design strategy but not to a great extent; the most significant usage of the strategy is the use of a disembodied hand as the mouse cursor (**Figure 8.4**). The hand is a representation of the god character the player assumes, and the accompanying shadow of the hand reinforces the notion that this hand is part of the storyworld and not the interface.

Figure 8.4: The cursor in *Black and White* is in the form the hand of a god – the player.



Screen capture, *Black and White* (© Lionhead, 2001, by permission).

The designers mapped the functional metaphor strategy skilfully onto the navigation in the game. In many other games of the same genre, players would click on a location in the storyworld which they want to move to, and a sequence

of the avatar moving to that location would follow, thus completing the 'move' command. However in *Black and White* the players instead of clicking, would be using the hand cursor and perform a dragging action, pulling the destination towards the player.

Not only does the dragging action of the mouse serves as a metaphor of dragging the landscape, the notion of dragging the landscape towards the player instead of the player going to the destination reinforces the character which the player assumes in the game – a god. This direct implication of character allows a deeper connection between the player and the narrative content through interaction, as the player is able to perform the same godlike action of moving the earth through a functional metaphor of the interface.

As discussed earlier, one of the fundamental characteristics differentiating games from other traditional media is interactivity, a trait which allows the audience to actively acquire narrative information instead of being spoon-fed. Game designers who so eagerly wish to offer a rich narrative experience to their audience can apply functional metaphors onto interactive interface elements to take advantage of videogames' interactive nature and present narrative information through means of interaction.

8.4.3 Functional Metaphor versus Behavioural Mimicking

Because both the functional metaphor and the behavioural mimicking narrativization design strategy focus on the various forms of physical interactions,

sometimes it is not easy to identify which of the two strategies was used on some interface designs.

As stated previously, the paper defines behavioural mimicking as physical interactions that reproduce real world behaviours. On the other hand, although functional metaphors do not mimic real world behaviours, they are derived from and reflect real world behaviours.

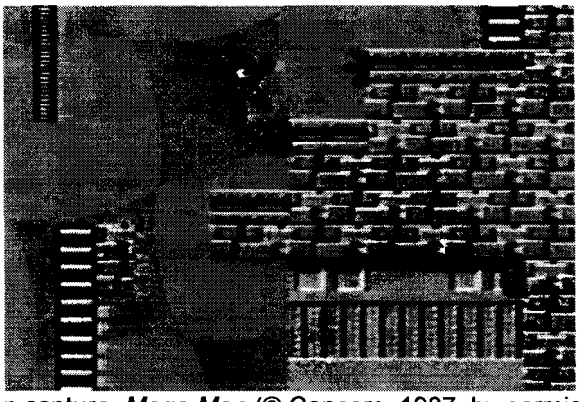
There are no hard boundaries between the two narrativization design strategies. For borderline examples which both strategies seemed to be applied, the final classification is clearly a judgement call, often with good arguments you can make either way.

8.5 Strategy Five: Perspective

As described in earlier chapters, point-of-view (POV) defines the perspective in which the audience perceives the story from; in videogames, the POV defines the optical perspective in which the player would envision the storyworld. It is through this channel players can immerse into the storyworld visually.

Prior to the availability of abundant computing powers of today, POVs in many video games were limited to the default two-dimensional, third-person omniscient view of the gamespace, such as the one used in many platform games like *Mega Man.* (**Figure 8.5**, Capcom, 1985) on the Nintendo Entertainment System (NES) console. Although this POV may seem to be a product of limited technology, there is certainly nothing wrong with this particular POV, as it is still being used frequently in many of today's games. It offers a complete and objective perspective of the storyworld to the player, serving the purpose of allowing the players to see and deal with only what they need to see.

Figure 8.5: The 2D omniscient POV used in many platform games such as *Mega Man.*



Screen capture, *Mega Man* (© Capcom, 1987, by permission).

8.5.1 POVs, Perspectives and Immersion

As videogames become a much more popular and powerful medium and as the supporting technology advances, game designers start to borrow crafts and techniques proven successful in other powerful media such as movies. Thus we start to see the use of different POVs in videogames, and in many of today's games the players are free to choose between various POVs and some can even move the viewing angle in real time. This use of various POVs in games not only gives the players more opportunities to enjoy the fascinating and beautiful storyworlds the designers constructed, it also offers the players more immersive pleasures from different perspectives.

Laurie N. Taylor (2002) identifies two types of immersion associated directly with the use of POVs and their resulting perspectives:

- ***Diegetic immersion, which corresponds to immersion in the game***
- ***Intra-diegetic or situated immersion, which corresponds to immersion within the created virtual space of the game situated through both a character's perspective and an embodied point-of-view.*** (Taylor, 2002, p. vii, viii)

Taylor's two types of immersion can be considered as the rephrased equivalent of Bolter and Grusin's (1999) two states of remediation. Diegetic immersion is the immersion of the narrative content, or immediacy; intra-diegetic immersion is the immersion of the interactive process, or hypermediacy.

Diegetic immersion and immediacy are a result of a consistent storyworld, one that does not 'break' by inconsistency caused by the various elements of the game, including the interface. In order to maintain this consistency of the

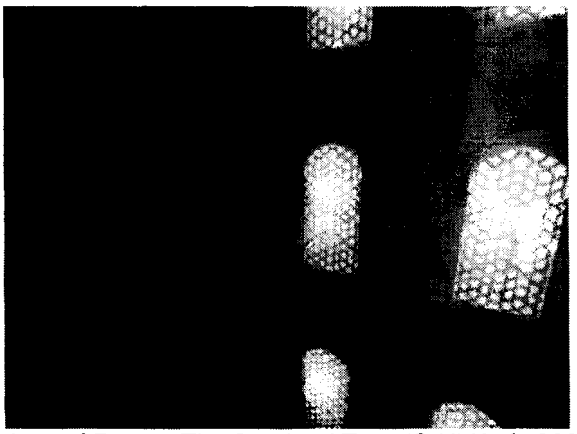
storyworld viewed visually by the players, most games would maintain a single POV during particular stages of gameplay.

8.5.2 Change of POVs

The interactive nature of videogames however, requires the players to exercise volition and resume the state of hypermediacy at the different stages of the gameplay. To accommodate this, some games would offer a different POV, allowing intra-diegetic immersion to take place and enabling the player to interact with the game from the POV that serves the purpose the best. In fact, sometimes the change of POV is necessary in order to maintain the flow of the game, as the default POV may not be sufficient for the interaction required in particular stages of the game. Rouse (1999) supports this phenomenon and states that ***"certain game designs will cease to function when viewed from any viewpoint other than the one they were designed to use."*** (Rouse, 1999, p. 12)

In the example below, the designers of *Prince of Persia: the Sands of Time* (Ubisoft, 2003) changes the POV from the default third-person trailing to a god view POV (**Figure 8.6**) when the avatar encounters certain series of platforms.

Figure 8.6: The POV changes from default third-person trailing to a god view POV to accommodate the interactions.



Screen capture, *Prince of Persia: The Sands of Time* (© UbiSoft, 2003, by permission).

It is apparent that from the default POV it would be almost impossible for the player to interact with the storyworld in the desired manner, and failure to do so would frustrate the player and break flow. By changing the POV to accommodate the interaction required, the designers shift the immersion from diegetic to intra-diegetic which helps the players to maintain a flow for the game.

Other times designers would change the POV for purely narrative purposes; this can be seen most often in cut-scenes. During most cut-scenes interactivity would be taken away from the players, allowing designers to apply their cinematic touches and create movie-like sequences which mostly are used to narrate a segment of the narrative. Just like in movies, designers would choose the POV that tells the story the best, and in many cases the POV used in cut-scenes would be different than the POV used during gameplay.

8.5.3 POV and Identifying with Characters

POVs in videogames also have the ability that allows the player to identify with the character(s) in the game. This ability works similar to that of film, as

filmmakers often times use distinctive shots to establish or emphasize character. A behind-the-shoulder shot accentuates the character whose shoulder the camera is placed behind, resulting in stronger identification with the particular character. A third-person omniscient shot assumes a more objective POV and gives the audience a more complete view of the scene, resulting in less identification with particular characters.

In a first-person shooters game such as *Half-Life* (Sierra, 1998), the first-person POV used shows the storyworld only through the eyes of the avatar, Gordon Freeman, during the majority of the gameplay (with the exceptions of during cut scenes). The only part of the avatar the player is able to see is the weapon the avatar is holding (sometimes the hand of the avatar would be revealed as he is holding weapons like the crowbar). This limited POV has a strong impact on identifying with the main character; there is no one else the player can identify with – the player IS Gordon Freeman, seeing through his eyes while blasting his way through aliens as they dash towards the player head-on.

8.5.4 POV, Perspective Distance, and Agency

"Perspective distance" in traditional narrative theory is a term used to measure the emotional involvement of the audience with the characters, based on how close the narrative is situated to individual characters. If the term **distance** is taken literally we can examine the perceived optical distance between the camera and the avatar(s), and then use the term to indicate the desired emotional involvement of the players with specific characters in videogames.

Going back to the *Half-Life* example, the perspective distance between the player and the avatar in the first-person POV is very close, thus strengthening the emotional involvement with the particular character. As the perspective distance increases and the camera moves farther away from the avatars, more of the storyworld is shown with less focus on individual avatars, thus the attachment towards those avatars decreases.

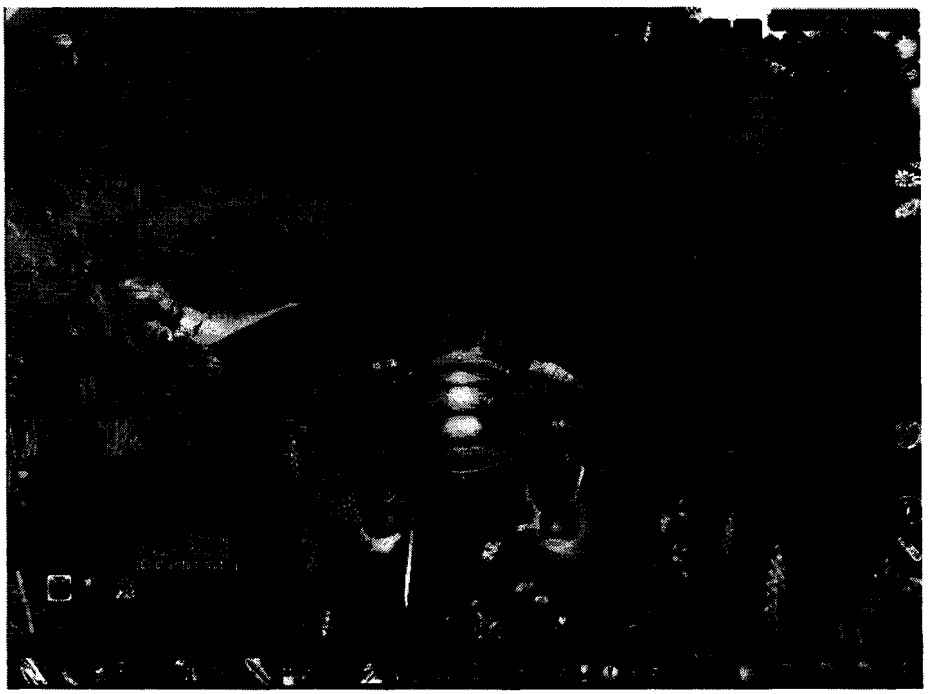
For a strategy games such as *Warcraft III: Reign of Chaos* (*WC3*, **Figure 5.3**) which uses a god view POV, the visual emphasis is much more on the larger storyworld than individual avatars. The greater perspective distance offers less identification with individual characters, resulting in less emotional involvement to them on a single basis.

The perspective distance also has a direct relationship to the sense of agency the players experience in the game. If the default POV in *WC3* is a first-person or a third-person trailing, the player would not have the sense of agency of a commander of the battle (which is the role the player assumes in the game) due to the narrow perspective supported by these POVs.

This is also evident from another game published by Blizzard Entertainment using the same storyworld and following the same storyline. In the popular massive-multiplayer online role-playing game (MMORPG) *the World of Warcraft* (*WoW*, Blizzard, 2004), instead of commanding the entire army of a particular faction as they would in *WC3*, the players assume the role of single members of the selectable races and factions. The default POV used in this game is third-person trailing with the camera focused on the player-avatar

(**Figure 8.7**), and the player can only see more or less what the player-avatar would see in the storyworld.

Figure 8.7: The default third-person trailing POV in *the World of Warcraft*.



Screen capture, *The World of Warcraft* (© Blizzard, 2004, by permission).

Although *WoW* allows for more agency in terms of control over the character development of the single character, the agency of the overall development of the greater storyworld is taken away as the players have no direct control over other characters or units in the game. The use of the different POVs and the perspective distances of the POVs both support the agency the designers wish to grant the players – the god view POV of *WC3* with greater perspective distance offers more agency of the larger storyworld and more number of units controlled; the third-person trailing POV of *WoW* with shorter

perspective distance offers more agency of the individual character and more controls over the single avatar. In short, the scope for agency is parallel to the perspective distance of the visual representation.

8.6 Strategy Six: Bridging

Although the thesis focuses on design strategies to bridge the gap between the immersive state of transparency and the hypermediated awareness of the interaction process, all of the strategies so far suggest methods to immerse the interactor into the storyworld. However there are a handful of game examples that try to bridge the gap from the opposite direction; instead of bringing the interactor into the storyworld, these games transform themselves to be a part of the reality. On some level, the real world becomes the part of the interface of the storyworld.

Up until now this thesis has used many terms to describe the various 'worlds' created by the media associated with videogames and the videogames themselves. The following is a quick summary of definitions for each term in the context of videogames to prevent any confusion:

- **Game World:** the **virtual** world created by videogame systems; exists only within the digital space; also called **gamespace**.
- **Real World:** the **physical** world which the players live in physically.
- **Storyworld:** the **psychological** realm created as a result of the interactions between the player and the videogame; exists as an experience.

The other narrativization design strategies suggested in this thesis look for ways to construct a psychological reality through the incorporation of the physical world into the virtual world. The bridging strategy on the opposite looks for ways to construct a psychological reality through means of incorporating the virtual world into the physical world. These games are sensitive to not only the player's

interaction with the system, but also reflect (senses and utilizes) environmental contexts. In terms of the 'worlds', the other design strategies create the storyworld by bringing the real world into the game world; the bridging strategy creates the storyworld by bringing the game world into the real world.

Due to the uncommon approach of merging the game world into the real world, many reviewers do not consider most of the examples utilizing this bridging strategy as videogames. In fact, a unique genre was given to these games which attempt to fuse the in-game and out-of-game experience – **mixed reality games**. Some good examples of this genre of games include *Geocaching* and *Majestic* (Electronic Arts, 2001).

The theory behind this bridging narrativization design strategy is similar to the concepts behind **ubiquitous computing**.

8.6.1 Ubiquitous Computing

Ubiquitous computing is a field of computing which focuses on implementing computers into the environment of the users rather than having computers as distinctive devices. The term was first suggested by Mark Weiser (1991), and he states that ubiquitous computing would be ***"invisibly enhancing the world that already exists"*** (Weiser, 1991, p. 61). The goal of ubiquitous computing is to merge the experience of operating information-processing devices (i.e., computers) with the experience of everyday activities. The result of this would be interactions that are more natural and more casual, and most importantly the computer's presence would be hidden from the users' eyes.

Ubiquitous computing can be said as the opposite of virtual reality, which the majority of videogames are based on. Game designers thrive to create storyworlds that are as believable as they can get so they can immerse the players into these virtual wonderlands for an unforgettable interactive experience. On a completely opposite path, ubiquitous computing tries to modify and redesign computers so they become part of the real world, the world which the interactors are physically in. **Embodied virtuality** is a term used by the ubiquitous computing field to describe the process of drawing computers out of the metal boxes that the programs and data are stored in. It is a process of turning virtual reality into physical reality.

The intention to merge the process of computing with everyday activities shares the same merit with the behavioural mimicking design strategy discussed earlier. Both aim to design the interactive system in a way that they would 'understand' commands that resemble more of the behaviours in the real world.

8.6.2 Examples of Bridging

On top of more natural and more casual interactions pursued by ubiquitous computing, videogames that utilize the bridging design strategy are also aiming for a gaming experience which extends beyond a rather limited virtual storyworld. A good example of such a game which utilizes the bridging strategy are the electronic pets.

In 1997, Aki Maita developed a digital toy which goes by the name *Tamagotchi* (Bandai, 1997); it is a small, egg-shaped device that housed a small

computer and a screen. The concept behind *Tamagotchi* is that the player would treat it as a real pet and you would carry out simple actions such as feed and play; the *Tamagotchi* would then grow (not in physical size, but the metaphor of growing), evolve, or even die depending on how 'well' the player takes care of it. So not only will the interactor play with *Tamagotchi* as a game, it becomes part of their life, as you will have to feed it and play with it as if you are taking care of a real pet. The portability of *Tamagotchi* further blurs the line of the storyworld and the real world, as the interactor can bring the storyworld with them anywhere they go in the real world.

However being portable is just one of the methods of bringing the storyworld into the real world, and today's technology is capable of turning any media portable, including videogames. Thus it will take more than just being portable for this design strategy to be considered an effective narrativization design strategies compared to others in terms of the level of narrative association it can offer the players.

8.6.3 Bridging and Storyworld

BokTai: The Sun Is In Your Hand (*Boktai*, Konami, 2003) is a videogame published on the Nintendo Gameboy Advance (GBA) console. This game is very much like other stereotype RPG games which the player would assume the role of the main character and go through a series of dungeons, fight bosses, level up the characters and weapons, and follow a rather interesting storyline. What makes *Boktai* special is a unique device built onto the game cartridge, and the

device is a light-sensitive sensor (the **solar sensor**) which will be used to measure the amount of sunlight exposed to the cartridge.

In *Boktai*, the main character Django is set out to find and defeat vampires, and to do so the character must attack the enemies using a gun that shoots sunlight – the only effective weapon against vampires. However in order to recharge the gun, the game system requires the cartridge to be exposed to real sunlight that we see in the real world; when there is strong sunlight, the gun charges quickly, and vice versa. Thus if the player wants to perform better in the game, he should play the game under strong sunlight. If sunlight were insufficient, the player would have limited power against the enemies thus would have to change the play strategy from fighting the enemies heads-on to hiding and avoiding direct contacts.

Another unique feature of *Boktai* is the synchronization of the time in the game to the time in the real world. When the player starts the game for the first time, the game asks for the current time in the real world and sets the clock in the game accordingly. Game contents would then change according to the time; for example, birds would chirp in the morning and the game world would dim at evening, even the positions of the sun would be simulated accordingly.

Other game contents such as the environment would also be affected by factors in the real world; for example puddles in the game would dry up as a result of being exposed to the sunlight constantly.

This demonstrates how the bridging narrativization strategy works in generating the game world based on the real world, as the amount of sunlight in

the game depends closely to the amount of sunlight in reality. As a result, the player would have a stronger association to the game world, and instead of pre-generated by the system, the setting of the storyworld now depends on the conditions of the real world. The storyworld would no longer change only according to the rules of the game world, but would also be affected by the rules and factors of the real world.

CHAPTER 9: CASE STUDIES

The narrativization interface design strategies discussed in this thesis have the ability to significantly affect game experience just as with any other major design elements such as graphics or gameplay. It is apparent how graphics can affect the game experience with their obvious impact on the visual presentation in a game; gameplay itself also affects the experience due to its direct impact on the interactions between the interactor and the interactive experience. The narrativized interface however, may not be as noticeable as the other design elements, yet it can also play an important role in terms of constructing the gaming experience. This is because the interactor tends to 'ignore' the narrative interface when they are working in harmony with the rest of the game (this is consistent with Coleridge's suspension of disbelief); however if the interface design is not designed well, the negative effects can emerge and interrupt the immersive experience.

Every game analysis includes a short table outlining basic information about the game to provide a quick overview, including the relevant narrativization strategies.

This section revisits the strategies identified in the thesis. It does so in the context of five commercially and critically (according to Gamespot, http://www.gamespot.com/) successful videogames. Close examination of these

game interfaces reveals evidence of all of the identified narrativization design strategies.

9.1 Case Study: Okami

9.1.1 About the Game

The game *Okami* uses the following narrativization design strategies: look of the interface and functional metaphor.

Table 9.1: Game information table for *Okami.*

Game Title	Okami	
Console	Playstation 2	
Publisher	**Developer**	Clover Studio
	Publisher	Capcom
	Release Year	2006
Genre	Action Adventure	
Interface Devices	**Software Input**	'Paint' your commands
	Software Output	Calligraphy graphics
	Hardware Input	Analog stick
	Hardware Output	Rumble gamepad
Point-of-view	-Third-person trailing (default) -Free camera angles (optional)	
Gamespot Rating	9.0 / 10	
Narrativization Strategies	-Look of the Interface -Functional Metaphor	

The first thing the player would notice playing *Okami* (Clover Studio, Capcom, 2006) would be its visual representations. Incorporating stunning Chinese/Japanese calligraphy style art throughout the game, the designers create an attractive and immersive storyworld. In fact, the entire game experience reminds the player of watching a series of animated calligraphy paintings, as the visual representation is so well done artistically that at any point during the game experience the screen looks like a painting (as shown in **Figure 9.1**).

Figure 9.1: Screenshot of the rendered calligraphy landscape in *Okami*.

Screen capture, *Okami* (© Capcom, 2006, by permission).

The players assume the role of Okami Amaterasu. According to Japanese fable, Amaterasu was a resurrected god of nature who takes the form of a white wolf. In ancient Japan where peace was disrupted by a resurrected evil

form, Amaterasu is set to restore peace by defeating evil and cleanse all foulness the evil has left behind.

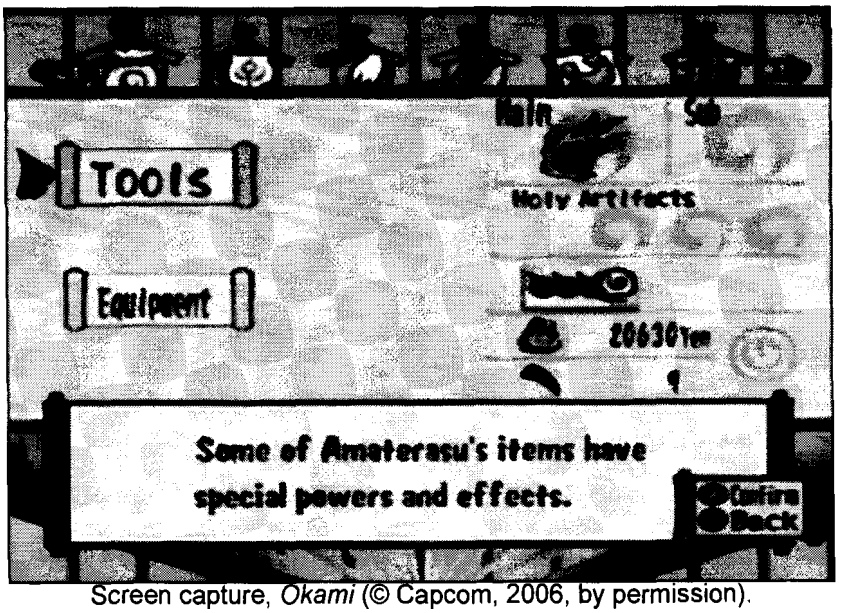
Similar to many other games with the same theme in the genre, *Okami* requires the player to defeat enemies in different locations, level up and acquire new items, skills and abilities, solves puzzles, and so on.

9.1.2 Look of the Interface

The story of *Okami* is derived from an ancient fable, and the visual representation reinforces the theme by maintaining a traditional, ancient artistic look and feel throughout the game. This is achieved by incorporating Chinese/Japanese calligraphy art styles into the graphics and interface elements as can be seen in **Figure 9.1**.

In the original Japanese version of the game, all of the text is represented in calligraphy fonts, including numbers and symbols. Even though the text were translated from Japanese Kanji characters into English in the English version released in North America, the designers kept the same calligraphic feel on the letters and numbers to maintain an overall flow of theme. The menu system (**Figure 9.2**) uses icons and symbols such as scrolls, fan, and hanging scrolls to represent menu items; all this aims at maintaining an overall look and feel of the storyworld on the interface elements.

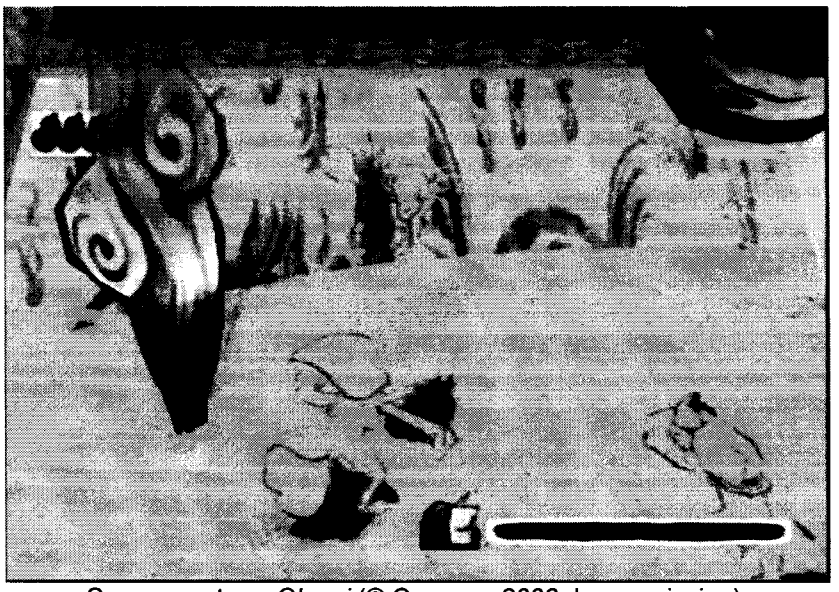
Figure 9.2: The menu screen of *Okami*.



Screen capture, *Okami* (© Capcom, 2006, by permission).

Another example of a good incorporation of the look of the interface strategy can be seen in the game's **brush system**, which when activated freezes all actions and turns the screen into a canvas, allowing the players to execute paint commands with a calligraphy brush (**Figure 9.3**). More details about the brush system can be found in the following section.

Figure 9.3: The paint system in *Okami.*



Screen capture, *Okami* (© Capcom, 2006, by permission).

In the midst of fierce combats and challenging puzzles in an action adventure game such as *Okami*, the use of the 'look of the interface' design strategy helps maintain a consistent flow of the narrative theme even during moments that require the players to focus on decision making. This reduces the impact caused by switching the players' consciousness between the immersion of the narrative content and the awareness of interacting with the game's mechanics, thus making the magic circle more difficult to break.

9.1.3 Functional Metaphor

Other than the beautiful visual representation the artistic graphics bring, the smart incorporation of functional metaphors is also a key element that contributed to *Okami*'s success. As one of the major selling points, *Okami* introduces an intuitive command system called the **brush system**, which allows

the players to literally paint their commands as part of the gameplay. When activated, the brush system pauses all actions that are currently happening in the game and turns the game space into a canvas-like interface. In fact, the 3D storyworld becomes a 2D painting, with the addition of the table and scroll background, the monotone graphics, and an ink bottle on the top right corner of the screen. A brush also appears and becomes the cursor which the players can use to paint their commands (**Figure 9.3**).

There are a total of thirteen different commands which the players can paint and execute throughout the game. Each brush command requires the commands to be 'drawn' specifically using unique brush strokes or patterns; once drawn correctly, the corresponding effects will be carried out as in-game actions. One of the most often used commands is the **slash brush**, which is used to cut down objects such as trees, rocks, fences, as well as enemies during combats. The slash brush requires the players to draw a straight stroke across the objects that are to be slashed; in the example shown below (**Figure 9.4**) the slash brush is used to cut open an enemy during a combat.

Figure 9.4: Sequence showing the slash brush command in *Okami.*

Screen capture, *Okami* (© Capcom, 2006, by permission).

The players need to execute the various paint commands in different situations in order to progress through the game, and the unique strokes and pattern for each commands echoes metaphorically the essence of the commands. The horizontal stroke used in the slash command is a metaphor of the slashing action of a blade, while the circle stroke used in the **sun brush** represents the sun metaphorically by shape. As formerly the Sun God, Amaterasu has the ability to bring sunlight onto the world, and to do this the player uses the paint system to draw a circle in the sky to bring out the Sun (**Figure 9.5**).

Figure 9.5: Sequence showing the sun brush command in *Okami*.

Screen capture, *Okami* (© Capcom, 2006, by permission).

There are many other interesting paint commands that utilize functional metaphors, some notables include the **bloom brush** that allows the players to make withered trees or grass fields bloom, and the **rejuvenate brush** allows the players to restore missing or damaged objects like bridges and buildings, or even restore missing stars to complete a horoscope.

The way the functional metaphor design strategy is integrated into the design of the interface in *Okami* has a very strong supporting impact on

immersing the players into the narrative content. At the basic level, the brush strokes required to execute each brush command matches the essence of the action (if the players want to bring out the sun, he would 'draw' the sun out by drawing a circle), thus a deeper connection is established between the interaction (drawing a circle) and the narrative content (summoning the sun).

At a higher level, the drawing action the players can use reinforces the implication that the players are playing the role of a god by performing godlike acts. In addition, there is no restriction on when or where the players can activate the brush system, further reinforcing the power of the god character the player assumes in the game. Another implication is the fable metaphor, as the entire game presentation resembles that of a fairy tale written on a scroll. The fact that players are allowed to draw onto the script suggests that the players are the author of their own fable of *Okami*.

9.2 Case Study: Resident Evil 4

9.2.1 About the Game

The game *Resident Evil 4* uses the following narrativization design strategies: look of the interface, expressive indicators of the gameplay states, and perspectives.

Table 9.2: Game information for *Resident Evil 4*.

Game Title	Resident Evil 4	
Console	Nintendo Gamecube	
Publisher	**Developer**	Capcom
	Publisher	Capcom
	Release Year	2005
Genre	Horror Action Adventure	
Interface Devices	**Software Input**	Laser pointer targeting
	Software Output	Situation-based sound effects
	Hardware Input	Standard Gamecube controller
	Hardware Output	Rumble gamepad
Point-of-view	-Third-person trailing (default) -Limited free camera (optional)	
Gamespot Rating	9.6 / 10	
Narrativization Strategies	-Look of the Interface -Expressive Indicators of the Gameplay States -Perspectives	

Capcom's *Resident Evil* series is arguably the most successful series in the horror action adventure genre. The success of the first installment of the series, *Resident Evil* (also known as *Biohazard*), in 1996 lead to an entire franchise based on the same title and theme. In a decade, six games were released in the mainstream series on top of numerous remakes across almost all platforms, as well as adaptations to other media such as movies and novels. In fact, *Resident Evil* has become the signature icon for Capcom, similar to that of the *Super Mario Bros.* series to Nintendo or the *Final Fantasy* series to Square Enix.

The theme of the series has always been a breakout of a virus of some sort, causing citizens (or residents, as the name may suggest) to become hostile zombies or zombie-like creatures. Striving to survive, the protagonists usually fight through piles of evil residents using weapons like guns, grenades, and rocket launchers while trying to solve the secrets behind the chaos. All titles in the series are connected in terms of narrative, as the main characters in each game are featured in other installments in the series either by reference or as one of the cast. The stories of individual games in the series can also be combined and form a chronology.

Released in 2005, *Resident Evil 4* (*RE4*, Capcom, 2005) was praised to be one of the best in the series by many fans and critics alike. It follows the same type of gameplay as all of its predecessors, as the player assumes the role of the protagonist, Leon, who gets stuck in a European town whose residents have become victims of yet another viral parasite that turned them into zombie-

like creatures. Leon attacks the enemies with weapons he equips and acquires during his adventure, and can use various items such as herbs and medicine to heal himself. While trying to survive, Leon must get deep into the city to rescue the President's daughter who was kidnapped by these creatures who are planning an evil plot.

What makes *RE4* so successful in the horror games genre is in fact how scary it makes the players feel when playing the game. Although it is no surprise that the choice of theme makes this a rather easy goal to achieve, it would still take a lot more than just throwing vicious monsters at the players with lots of blood and gore to make it a good game.

9.2.2 Look of the Interface

When playing *RE4* on the Nintendo Gamecube console the first thing I noticed was the interface, or the lack of it I should say. Other than the circular meter at the bottom right of the screen to indicate the character's current 'life' status and the number inside the circle indicating the amount of ammo left in the magazine, there are no other utilitarian interface elements visually present onscreen (**Figure 9.6**).

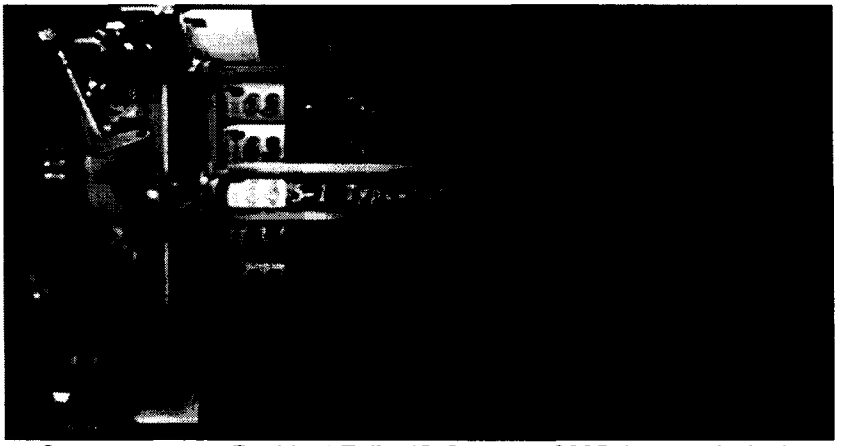
Figure 9.6: Default POV of *Resident Evil 4*.

Screen capture, *Resident Evil 4* (© Capcom, 2005, by permission).

As discussed earlier, one of the ultimate goals of interface elements is to erase themselves from the presentation, thus hiding any evidence or indications of the process of interaction. The minimal use of visual interface elements helps achieve this, as there is no need to erase the interface elements if they do not exist. Without any excess onscreen interface elements, the storyworld's visual presence can be maximized and allows deeper and faster immersion with less visual interruption.

However at times or situations where more visual interface elements are needed, *RE4* uses the **look of the interface** narrativization design strategy to maintain a flow of narrative theme across the interface. For example the save / load screen. Saving the current game progress in *RE4* is done by accessing typewriters located in various parts of the game world, and the designers make the saving / loading screen into a typewriter-like interface (**Figure 9.7**).

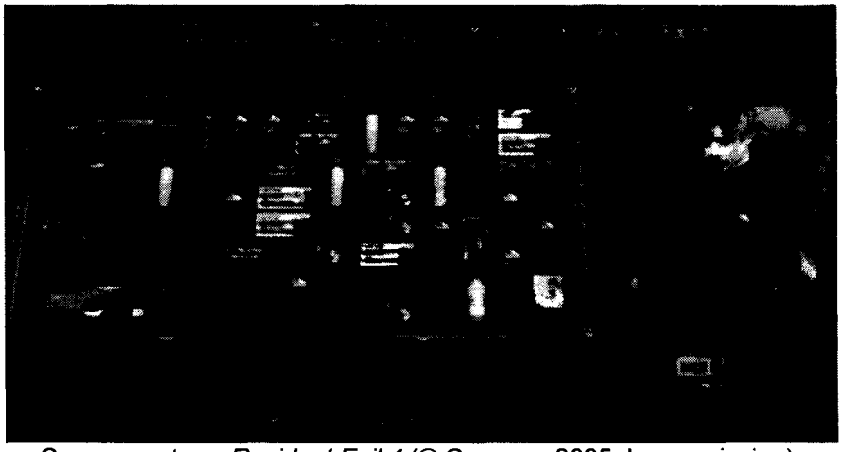
Figure 9.7: Save / Load screen of *Resident Evil 4.*



Screen capture, *Resident Evil 4* (© Capcom, 2005, by permission).

Another example of applying the look of the interface narrativization strategy is the inventory screen. In *RE4*, objects other than ammunition are stored individually in the inventory, each taking up spaces (represented in blocks) according to their sizes; a box of ammo takes up two blocks, and a handgun takes up six blocks, and so on. In order to maximize the available storage space in the inventory, the player has to spend time sorting their inventory from time to time to make sure objects are oriented properly and no spaces are wasted. The presentation of the storage box (**Figure 9.8**) helps maintain a narrative theme when the player's attention is shifted away from the gameplay onto sorting of the inventory.

Figure 9.8: Inventory Screen of *Resident Evil 4*.



Screen capture, *Resident Evil 4* (© Capcom, 2005, by permission).

9.2.3 Expressive Indicators of Gameplay States – Game Metrics

One of the reasons *RE4* is able to use only minimal visual interface elements during the majority of the gameplay is the smart use of the expressive indicators of gameplay states narrativization design strategy. In addition to displaying descriptive metric information on screen as meters and numbers, *RE4* also present metric information in highly narrativized ways.

When hit by the enemy, not only would the life meter decrease and change color according to the amount of life left, the avatar would bawl, blood would spill, and the gamepad would rumble. All of these are narrativized indications of a change in the game state, and the use of multiple senses (visual, auditory, and touch) at once further enhances the essence of the narrative – being hit by the enemy.

Also as a result of using minimal visual interface elements, no separate interface elements such as meters or bars are used to indicate the enemy's

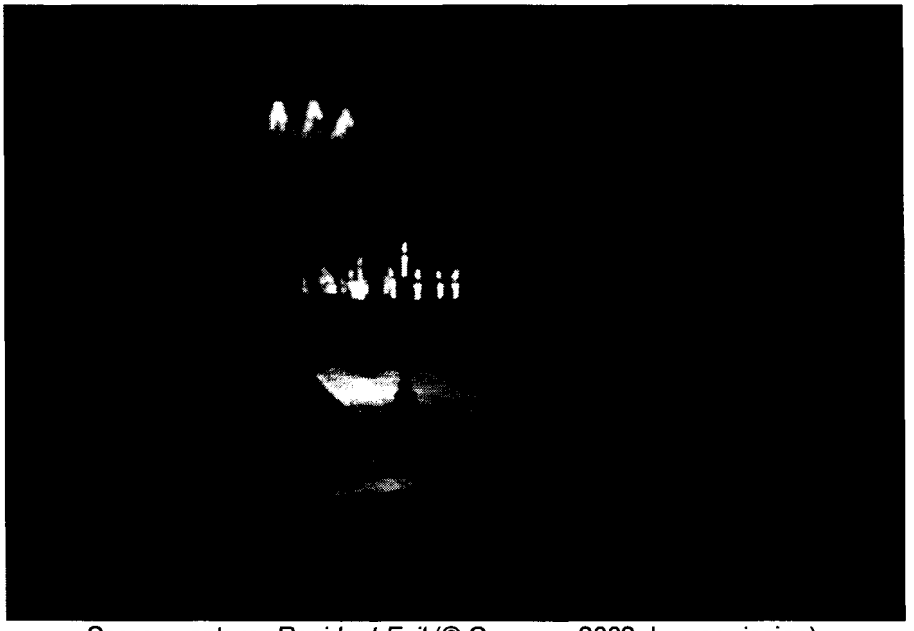
current life status. Instead, the player can tell if the enemy is hurt by the blood spilled on their bodies, or when limbs (sometimes even the head) are blown off by gunshots. With this method of indicating the enemy's life status, the player is able to perceive descriptive metric information with a high degree of narrative association.

Another successful use of expressive indicators of gameplay states in *RE4* is using music and sound effects to indicate the presence of enemies. Most of the times there is no music during the gameplay, with the exception of during battles. Thus the player becomes accustomed to associate the sudden occurrence of music with the presence of enemies (occasionally, sounds of the enemy gasping would be used instead of music). Often times the enemies would be out of the player's sight, either hiding around the corner or behind objects, and the limited knowledge of only knowing the presence but not the exact locations of the enemies would create a strong sense of suspense.

9.2.4 Perspectives

Different from its predecessors, *RE4* uses a third-person trailing POV as the default POV. In the previous installments, such as the remake on the Nintendo Gamecube console of the original *Resident Evil* (Capcom, 2002), a fixed camera is used in every scene, giving each scene a fixed third-person POV (**Figure 9.9**). This POV offers a good channel to perceive the game world, as the player envisions the scene from a fixed, objective perspective. This POV tends to build association with the storyworld.

Figure 9.9: Default POV of *Resident Evil*.



Screen capture, *Resident Evil* (© Capcom, 2002, by permission).

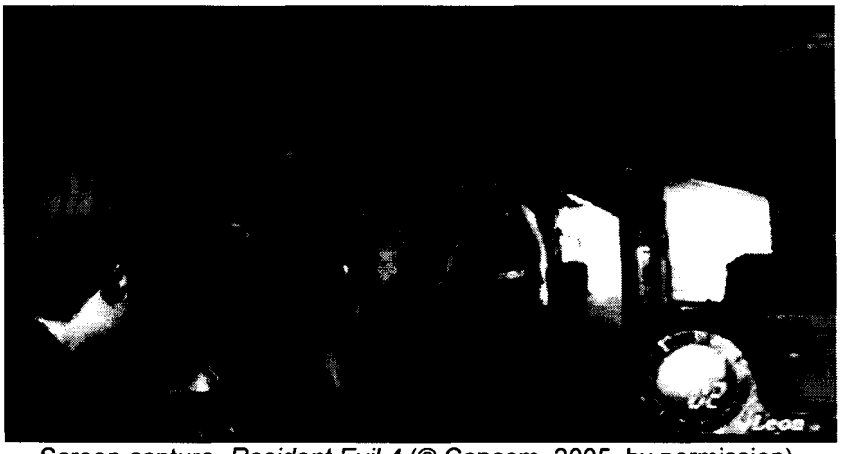
In *RE4* however, the third-person trailing POV allows for a much stronger association with the main character, as the camera is set behind the shoulder of Leon, and the player would be seeing more or less only what Leon would see as he moves around the gamespace (**Figure 9.6**). This closer perspective distance forces the players to envision the storyworld through a perspective closer to the avatar's eyes, allowing the players to identify themselves more with the avatar.

The game offers the option for the players to move the camera on a rather restrained course during gameplay. The players can rotate the camera using the right analog stick on a pivot for about forty degrees sideways, and about thirty degrees up and down; the camera resumes the default position once the player releases the analog stick. This is a design decision based more on performance needs than narrative pleasure, as the designers only want to give the players enough freedom over the POV to help them perform better (by perceiving the

gamespace from different angles), but not complete freedom which could ruin the narrative pleasure by exposing contents unintentionally.

When targeting in *RE4*, the POV would be locked into position close to Leon (**Figure 9.10**), and the freedom to move the camera is taken away. The player can only change the perspective by moving Leon's aim, and the camera would follow. This transformation of POV binds the perspective to the aim of the gun, allowing the player to maintain the best view of the enemies at the times of battle. During battles the only thing that matters to the avatar (and ultimately the player) are the enemies, thus locking the POV on the aim can prevent the player's attention from being divided by other elements in the gamespace that are irrelevant at the moment.

Figure 9.10: Targeting POV of *Resident Evil 4.*



Screen capture, *Resident Evil 4* (© Capcom, 2005, by permission).

Other examples of how the perspective changes in the game to reflect the narrative include the change of POV when using weapons which require a zooming scope, such as a rifle. When using the rifle, the player has the option to

use the mounting scope for sniping the enemies. Once activated, the POV would change into a zoomed-in view, revealing details at a great distance and the view is presented as if seen through an actual zooming scope (**Figure 9.11**).

Figure 9.11: Targeting POV with a zooming scope weapon in *Resident Evil 4*.

Screen capture, *Resident Evil 4* (© Capcom, 2005, by permission).

9.3 Case Study: WarioWare: Smooth Moves

9.3.1 About the Game

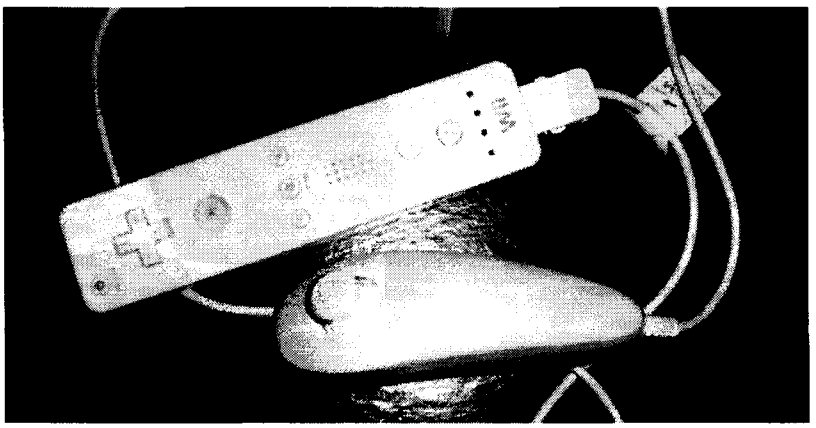
The game *WarioWare: Smooth Moves* uses the following narrativization design strategies: look of the interface, behavioural mimicking, and functional metaphor.

Table 9.3: Game Information Table for *WarioWare: Smooth Moves.*

Game Title	WarioWare: Smooth Moves	
Console	Nintendo Wii	
Publisher	**Developer**	Nintendo, Intelligent Sys.
	Publisher	Nintendo
	Release Year	2007
Genre	Physical Interactive	
Interface Devices	**Software Input**	Motion-sensitive input
	Software Output	Real-time onscreen projection
	Hardware Input	Standard Wii remote control and Nunchuck (motion-detection gamepad)
	Hardware Output	Rumble gamepad, speaker on the remote controller
Point-of-view	-Multiple POV, varies from game to game	
Gamespot Rating	9.0 / 10	
Narrativization Strategies	-Behavioural Mimicking -Functional Metaphor -Look of the Interface	

The *Nintendo Wii* console is one of the three new generation videogaming consoles released in 2006, along with Microsoft's *Xbox 360* and Sony's *Playstation 3.* Taking a rather unique and different approach in its interaction design, the *Nintendo Wii* caused a tremendous hype, bringing videogaming to a new level. Focusing on more than just making games with stunning graphics, designers of the Nintendo *Wii* games spend tremendous effort on designing interactions that would utilize the intuitive *Wii* controllers – the *Wii Remote* and the *Nunchuck* (**Figure 9.12**)

Figure 9.12: The *Nintendo Wii* controllers – the *Wii Remote* (top) and the *Nunchuck* (bottom)



Nintendo Wii controllers, photo by author.

The *Wii Remote*, which functions like a normal remote for any home appliances, allows the players to wirelessly interact with the *Wii* console, and the motion-sensing and pointing technology used allows the system to detect a wide range of motion. There are also traditional hardware interface elements seen on gamepads for videogames, such as the directional and command buttons. The

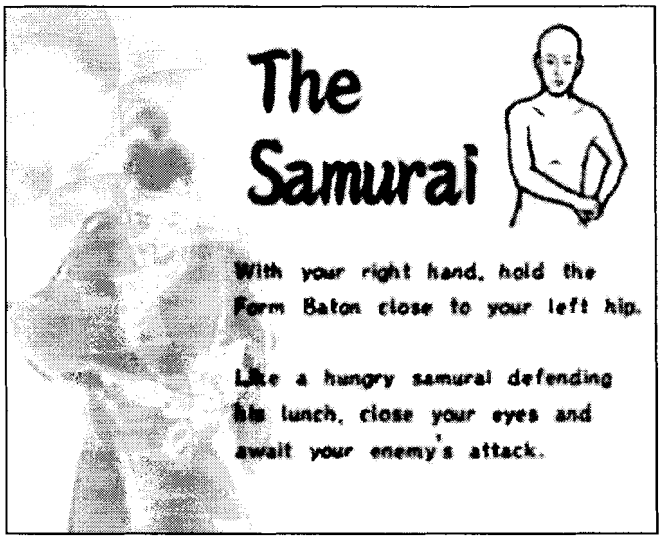
Wii Remote also has a built in speaker, rumble motor, and can attach to other expansion input devices like the *Nunchuck.*

The *Nunchuck* is a small controlling device that fits comfortably into either hand of the player. It consists of two command buttons and an analog stick for more accurate and precision controls. Together the *Wii Remote* and the *Nunchuck* allow the players to perform a wide range of physical inputs, compared to traditional gamepads which allows the players to issue commands using more or less only buttons.

Among the earlier group of released games for the *Nintendo Wii* console, *WarioWare: Smooth Moves* (*WarioWare,* Nintendo, 2007) is a party game which fully utilizes the intuitive controls of *Wii*. *WarioWare* is more of a collection than a single game, as it contains over two hundred mini-games, each having its own goals and rules. Each mini-game requires the controller, called the **Form Baton** in the game, to be held in unique ways, or **Forms** as the game calls it; each form would have its own unique way of interactions.

Before each mini-game starts, the screen will display the form required for a second or two, giving the player the opportunity to adjust the controllers to the proper form. If the form is newly introduced, a more detailed description of the form will be given, allowing the player to understand how the form works. **Figure 9.13** shows the screen which displays how the form, **The Samurai**, works in the game and how the player should hold the controller.

Figure 9.13: Screen showing how the form, "The Samurai" works in *WarioWare* and how the player should hold the controller.



Screen capture, *WarioWare: Smooth Moves* (© Nintendo, 2007).

Due to the fact that there are so many mini-games in *WarioWare*, this paper only selects a few examples which best demonstrate the incorporation of the narrativization design strategies.

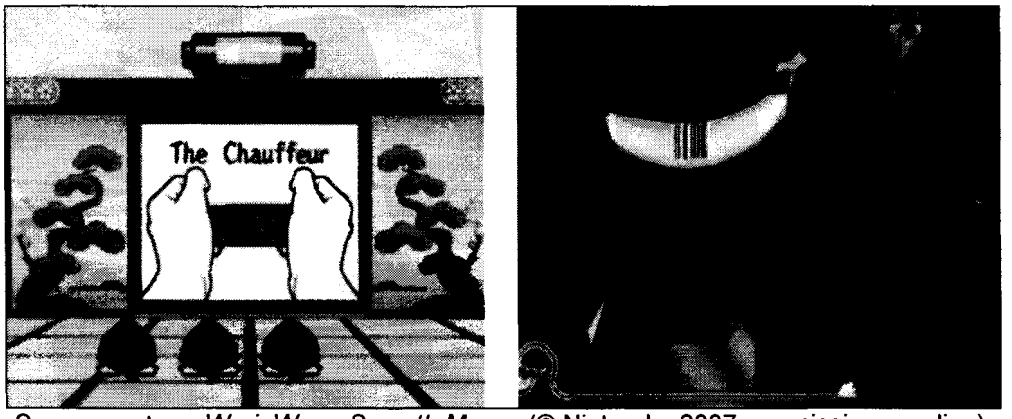
9.3.2 Behavioural Mimicking

The design of the *Wii* controllers allows the system to detect not only discrete inputs such as pressing the buttons, the motion-sensing technology allows for detection of gestures as well. This enables the game to utilize the behavioural mimicking design strategy so the players can interact with the system using natural behavioural inputs.

In the mini-game *Code Dependency*, the player assumes the role of a clerk at the checkout counter, and the goal of the game is to successfully scan the barcode on the merchandise before the time runs out. The form used in this mini-game is **The Chauffeur** (left of **Figure 9.14**), which the player would hold

the Form Baton as if holding the merchandise (in this example, a banana, right half of **Figure 9.14**).

Figure 9.14: The Chauffeur Form (left) and the mini-game *Code Dependency* (right).

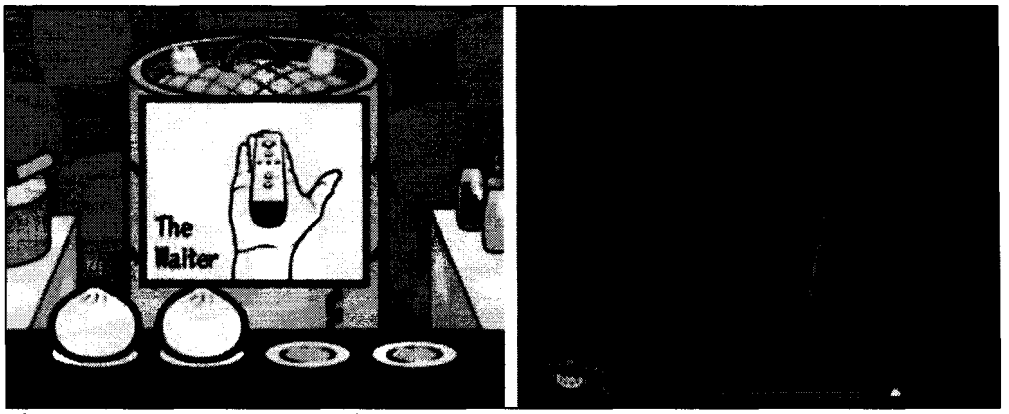


Screen capture, *WarioWare: Smooth Moves* (© Nintendo, 2007, permission pending).

The player can rotate the Form Baton in any direction, and to win the game the player needs to align the barcode on the banana with the barcode scanner on the counter. This rotating action is a direct mimic of the behaviour used in the real world, and the fact that the merchandise can be rotated three-hundred-and-sixty degrees on all three axis make the interaction more realistic.

Another good example of the use of behavioural mimicking in *WarioWare* is the mini-game *Broom Shtick*. In this game the player is asked to take the **Waiter Form** and place the Form Baton on the player's palm. The goal of the game is to balance the broom and keep it from falling off the avatar (the hand) by slightly adjusting the player's hand movements.

Figure 9.15: The Waiter Form (left) and the mini-game *Broom Shtick* (right).



Screen capture, *WarioWare: Smooth Moves* (© Nintendo, 2007, permission pending).

Similar to balancing objects using the palm in the real world, the game mechanics is sensitive enough that the broom would respond to even the tiniest maneuver, and obey the laws of gravity. The player can move their palm forward, backward, sideways, and even tilting their palms and try to maintain a balance.

These movies are direct mimics of real world behaviours, and since the players can move their palm in any direction and can see accurate results of their inputs immediately, it offers the players high degrees of both control realism and feedback realism.

9.3.3 Functional Metaphor

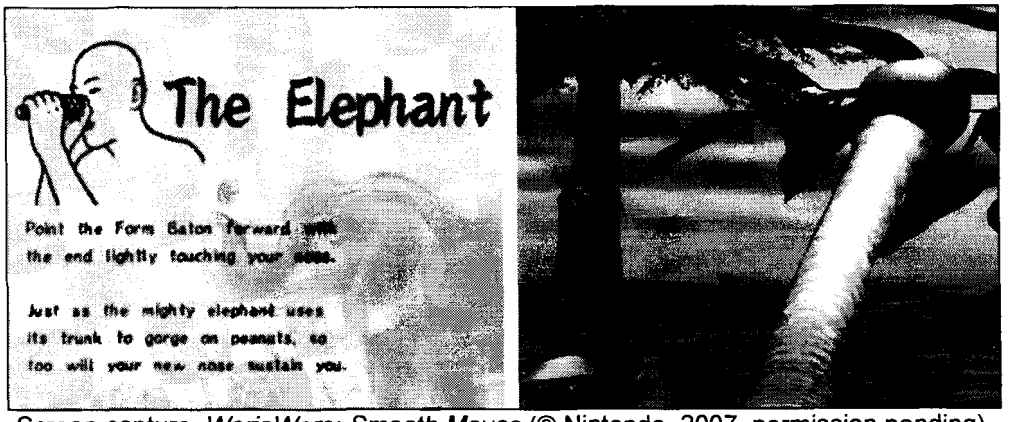
The behavioural mimicking design strategies allows the players to perform game interactions that are mimics of real world behaviours the players are familiar with, such as the rotating action of the *Code Dependency* mini-game or the balancing action of the *Broom Shtick* mini-game.

However there are interactions that are hard to mimic, or do not have any corresponding behaviours natural to the players. At times like these the

functional metaphor design strategy helps the players associate the interactions required with the narrative through means of functional metaphors, providing interactions with high degrees of narrative associations.

In the mini-game **Junk and My Trunk**, the player assumes the role of an elephant trying to pick down apples from a tree. It is obvious that the player would not be able to perform interactions that are a direct mimic of the required behaviours, but the **Elephant Form** (left of **Figure 9.16**) takes the Form Baton as a metaphor for the trunk of an elephant.

Figure 9.16: The Elephant Form (left) and the min-game Junk and My Trunk (right).



Screen capture, *WarioWare: Smooth Moves* (© Nintendo, 2007, permission pending).

As a result, the interaction used in the game can be thought of as a metaphor of an elephant waiving its trunk to pick down apples from a tree (right of **Figure 9.16**). Even though the interaction is not as familiar to the player as interactions that uses natural behaviours, the use of metaphor adds narrative touch to the interaction and helps maintain the narrative pleasure during the interactions.

9.3.4 Look of the Interface

There are many examples in *WarioWare* that demonstrates the use of the look of the interface design strategy. Take for example the *Junk and My Trunk* mini-game discussed above, the cursor is transformed into the trunk of an elephant, and the graphics and sound effects are all illustrated to construct a unified storyworld.

In fact, in almost every mini-game in *WarioWare*, the appearance of the cursor or the avatar are transformed to fit the theme of the mini-game; for examples, the broom and the palm in *Broom Shtick* and the banana in *Code Dependency.*

By changing the look of the interface to fit the narrative theme of the mini-game, it helps establish a narrative texture, thus maintaining the narrative flow across the various mini-games.

9.4 Case Study: Gran Turismo 3: A-Spec + Driving Wheel

9.4.1 About the Game

The game *Gran Turismo 3: A-Spec* plus the *Logitech Wingman Driving Wheel* interface uses the following narrativization design strategies: look of the interface, behavioural mimicking, expressive indicators of the gameplay states, and perspectives.

Table 9.4: Game information for *Gran Turismo 3: A-Spec.*

Game Title	Gran Turismo 3: A-Spec	
Console	Playstation 2	
Publisher	**Developer**	Polyphony Digital
	Publisher	Sony Computer Entertainment America
	Release Year	2001
Genre	Racing Simulation	
Interface Devices	**Software Input**	Pressure-sensitive inputs
	Software Output	None
	Hardware Input	Analogue Sticks, driving wheel and foot panel
	Hardware Output	Force feedback
Point-of-view	-First-person (optional) -Third-person trailing (optional)	
Gamespot Rating	9.4 / 10	
Narrativization Strategies	-Look of the Interface -Behavioural Mimicking -Expressive Indicators of the Gameplay States -Perspectives	

Similar to other racing simulation videogames, *Gran Turismo 3: A-Spec* (*GT3*, SCEA, 2001) follows the traditional gameplay and basic set of rules in the genre. The player selects from a collection of cars and chooses the course in which the player would be racing against other cars, controlled by either the computer or other human players. When the race begins, the players are inserted into the storyworld in the driver's seat, in front of the driving wheel, battling for the lead in a 3D gamespace simulating a closed racetrack. The game is over when the players cross the finish line and ranks would be given depending on the order which the players finished the race in. There are approximately one hundred and fifty cars which the players can choose from, covering a wide rage of brand-name manufacturers. Of the many racing simulation games in the market, *GT3* is known for its complicated system, realistic gameplay, and brilliantly rendered cars.

The two playing modes of the game allow the players to either have a quick game through the arcade mode, or a much more in-depth simulation mode in which the player assumes the role of a professional racer. In the simulation mode the player not only have to worry about each individual race, but also how to become a better racer through getting licenses, compete in tournaments, buying and modifying cars, and of course winning races.

Other than the standard Playstation 2 controller, *GT3* also supports the use of third-party controllers such as Logitech's *Wingman Force-Feedback*

Driving Wheel (*Wingman*, Logitech, 2001, **Figure 9.17**), which is a set of controllers consisting a near-full-size driving wheel and a foot panel of two pedals.

9.4.2 Look of the interface

GT3's interface is relatively simple consider how complicated the game mechanics are; this is a design decision based on the amount of screen space the players need in order to perform and immerse into the storyworld. But interface elements are still required, and some of the interface elements that are visually present during a race are narrativized with the look of the interface narrativization strategy, giving the overall onscreen presentation a unified feel of the theme. For example, the two indicators for car speed (the speedometer on the bottom left of the screen) and engine speed (the tachometer on the bottom right of the screen) and the rearview mirror are illustrated as real objects. The layout and presentation of these interface elements follow the same theme of the narrative and helps complete the onscreen presentation of a driver's perspective in the racecar.

The main menu in GT3 also applied the look of the interface design strategy. On the main menu screen, the different locations which the players have access to in the game, such as tune shop, racetracks, and car dealer, are presented with a map-like navigation design. Instead of simply using a menu list or a drop-down menu, this presentation of menu items reinforces the narrative theme of the game – driving.

9.4.3 Behavioral Mimicking (Driving Wheel)

If the player plays *GT3* with a third-party controller such as Logitech's *Wingman* (**Figure 9.17**), the player will be able to interact with the game system using an interface that implements the behavioral mimicking design strategy, offering them a highly narrativized interaction experience.

Figure 9.17: Logitech's Wingman Force-Feedback Driving Wheel for *GT3*.

Photograph, *Logitech Wingman Force-Feedback Driving Wheel.*

Not only does the *Wingman* erase itself as an interface and becomes part of the narrative with its physical appearance (the steering wheel and foot pedals of a race car), in addition the interaction supported by the Wingman follows the concepts behind perceptual interfaces. Players are able to interact with the game using modes of interaction that are direct references to similar behaviours in the real world – driving with a steering wheel. The inclusion of the gas and brake pedals on the foot panel further reinforces the behavioural mimicking

design strategy, as accelerating and breaking are also controlled using interactions that mimic of real world behaviours.

The pressure sensitive inputs on the foot panel also add a high degree of input realism to the interface, as the player is able to issue accurate commands based on the amount of pressure applied to the pedals. The car would accelerate faster if the player steps on the gas pedal harder, and vice versa. The complicated game mechanics of *GT3* offers a high degree of feedback realism, as the car responds accurately not only to the inputs of the player, but also factors associated with the car used in the race. The acceleration, braking ability, grip of the tires, are just a few examples of factors that can affect the performance of the car in a race, and the player is able to perceive the effects of these factors as feedback on the interface.

9.4.4 Expressive Indicators of Gameplay States – Game Metrics

During a race there are crucial game state information and indications the player needs to be informed of from the system in order to perform. Such information and indications include the avatar's (the player's car) current position in relation to its surroundings. As realistic as the visual presentation and the game mechanics try to simulate real world cars and races, the immersive interaction experience could still be broken if these crucial game state information and indications are not designed and presented well.

The mechanics behind the hardware of the *Wingman* helps solve this problem as it incorporates the expressive indicators of gameplay states narrativization design strategy with the game system. The *Wingman* uses a

force-feedback technology to provide realistic resistant on the steering wheel, making it more than just a plastic ring that controls the direction of the car. The force-feedback mechanism simulates the different forces, such as gravity and friction, applied onto the car body and its tires. For example, when driving on dirt grounds, the unevenness of the surface (bumps and holes) will cause the steering wheel to shake and rumble, creating a realistic feeling that the driver is driving on dirt. Another good example would be making sharp turns at high speed on low-grip tires. This will cause the steering wheel to become 'tightened', or even locked, and is more difficult for the interactor to steer.

The presentation of the game state information using the expressive metrics strategy here not only serves the purpose of conveying crucial game state information (for example the car would run slower on surfaces other than the road), the expressive presentation adds a high degree of narrative association during the interaction process.

9.4.5 Perspectives

There are two primary POVs which the player can choose to race with, the default first-person POV and a third-person trailing POV. The player can switch between the two POVs anytime during the race, but there is no free-camera-angle feature under either of the POVs. There is also an optional third POV, which is a first-person POV of the rearview of the car, and can be switched to anytime during the race for a quick glance of the cars behind the player.

In the default first-person POV, the player is inserted into the storyworld in front of the steering wheel, offering the player the perspective of more or less what the driver would see in an actual race. The short perspective distance of this POV grants the player a high sense of agency over the avatar (the car), as the player's perspective is limited to that of the avatar's. The optical perspective of the storyworld will change under this POV even with the smallest maneuver of the avatar.

The third-person trailing POV on the other hand reveals the entire car, giving the player a wider perspective of the storyworld than the avatar alone would see. This POV has a greater perspective distance, allowing the player to see less detail of the avatar but more of the storyworld.

Comparing the two POVs in terms of character identification, the default first-person POV allows the player to identify more with the character avatar with a closer perspective distance, and the third-person trailing POV offers less identification with the character avatar due to the greater perspective distance. However through the third-person trailing POV, the player has a better channel through which the player can perceive the storyworld.

9.5 Case Study: Portable Island

9.5.1 About the Game

The game *Portable Island* uses the following narrativization design strategies: bridging and functional metaphor.

Table 9.5: Game information for *Portable Island*.

Game Title	Portable Island	
Console	Play Station Portable	
Publisher	**Developer**	Namco
	Publisher	Namco
	Release Year	2005
Genre	Mixed Reality	
Interface Devices	**Software Input**	Ukulele metaphor
	Software Output	Time-synchronized scenery
	Hardware Input	Analog stick
	Hardware Output	Alarm clock, radio, photo stand.
Point-of-view	-Third-person trailing (default) -Free camera angles (optional)	
Gamespot Rating	N/A (this game is only released in Japan)	
Narrativization Strategies	-Bridging -Functional Metaphor	

It is rather difficult to categorize Namco's *Portable Island* (Namco, 2005) on the Playstation Portable (PSP, Sony) console in terms of videogame genres, as it does not seem to fit into the generally understood definition of videogames.

In fact, many critics and reviewers, and even Namco itself, treat *Portable Island* as a **relaxation tool** other than a videogame. Placing it under the alternate reality genre is a decision based on its strong use of the bridging design strategy.

In *Portable Island*, the player is put on a remote island resort somewhere in the Pacific Ocean. There is no definite goal to the game as the player can perform all sorts of activities, from fishing to house building to exploring to swimming, or just sitting around doing nothing. All these activities are designed to allow players to release any stress they may be experiencing in real life.

There are five different modes the players can choose from in the game: play, music, alarm, radio, and stand. The play mode is the 'game' mode, which the players get to control an avatar to navigate around the island and perform the various tasks. The music mode turns the PSP console into one of the many instruments in the game, and the players can play songs using the console as the instrument. The alarm mode turns the console into an alarm clock and plays the various ambient sound effects featured in the game, such as tides and bird chimes. The radio mode turns the console into a radio, and the stand mode allows the players to view beautiful scenic pictures from the console, as if it is a photo stand.

The ultimate goal of the game is not to achieve any particular in-game goals, but rather to offer the players a relaxing experience as if they are on this remote island resort enjoying life. That being said, it is rather difficult to claim *Portable Island* as a good videogame for its lack of traditional gameplay, but the

use of some of the narrativization design strategies makes it a piece worthy of analysis.

9.5.2 Bridging

The players of *Portable Island* would no doubt find the game interesting and relaxing for the combination of beautiful scenery, calming sound effects, and comforting music it offers. However this experience could be flawed if the players have to be bound in front of a TV or a computer, which may be places the players find intimidating or tiring from their daily routines. Designed for the PSP console, the portability allows the players to bring the game world anywhere in the real world, expanding the storyworld beyond the physical confines of the game system.

Other than being playable anywhere, the different modes of *Portable Island* allow the players to experience the storyworld even without any direct physical interactions with the system. When in the stand mode, the players can visually experience the storyworld as a photo stand (**Figure 9.18**). In the stand mode, the players can choose from a number of set locations which they want to view, and the game would lock the camera in the location, showing all natural happenings in the area. The players can do this while they are reading, surfing the web, or even working in the office.

Figure 9.18: The stand mode in *Portable Island* turns the PSP into a photo stand.

Photograph, *Sony PSP Console and Portable Island.*

What also makes *Portable Island* unique is how it synchronizes the game time with the real time, and how the environmental dynamics of the game world change according to the real time. Thus the players would be able to catch the sunrise at around six o'clock and enjoy the moonlight during the night; even courses of the shadows of objects such as trees and rocks would change dynamically according to the moving position of the sun. This change not only reflects in the play mode, the scenery displayed in the stand mode would also change according to the time of the day.

This feature transforms the PSP console into a gateway which the players can immerse themselves into the storyworld literally anytime and anywhere. The result of this is a storyworld without definite boundaries, as the border between the game world and the real world is blurred and dissolved.

9.5.3 Functional Metaphor

Another interesting feature of *Portable Island* is its music mode, which transforms the PSP console into one of three sets of instruments: an assortment of percussion instruments, a steel drum set, and a ukulele. The one outstanding instrument worth mentioning is the ukulele, which applies the functional metaphor on both its interface and interaction design.

The music mode is similar to other rhythm-based games such as *Dance Dance Revolution*, which the players issue commands based on the rhythm of a song and the rhythmic visual displays. In the ukulele mini-game of the music mode, music notes are displayed horizontally and a guide moves from left to right along the score; the player would then press the corresponding buttons and strum the analogue stick to play the notes.

To play Portable Island as the ukulele, the player must flip the PSP up side down, and hold the console as if holding a real ukulele or guitar. In this stance, the player's left hand is in place to press the command buttons (X, O, △, □) as if pressing the strings on a ukulele to form different chords. The different chords are represented as combinations of the four buttons, thus the players know how to play the different chords based on the visual representations. The player's right hand can then strum on the analogue stick up and down as if strumming a real ukulele (**Figure 9.19**). Sounds are generated as the player strums the analogue stick, and like the real ukulele, the sound changes if the player changes the chords midway before the sound fades.

Figure 9.19: The ukulele mini-game in *Portable Island*.

Photograph, *Sony PSP Console and Portable Island.*

The intuitive depiction of the chords as combinations of the four buttons, the highly responsive controls, and the accurate rendition of the sounds make the ukulele mini-game a strong metaphor for playing the ukulele. Even without any skills and experience of playing a ukulele or a guitar, I was able to pick up the game and start playing a song the first time I tried this mini-game. Not only does the functional metaphor narrativization design strategy makes playing the mini-game easier, the player would also have a greatly narrativized interactive experience by performing metaphoric interactions.

CHAPTER 10: CONCLUSION

Videogames have evolved from their original form of electronic toys into one of the most influential media of today. The videogame industry itself is multi-disciplinary by nature, covering areas of expertise ranging from programming, graphic design, interaction design, to interface design. As the industry continues to grow and games continue to advance, designers are striving to create the perfect game that would bring their audiences the ultimate gaming experience.

Unlike traditional media such as movies and novels which the media convey the narrative content in a unidirectional way, videogames require constant physical and mental interactions with the player in order to respond accordingly. Thus the contrasting natures of narrative, which are non-interactive, and videogames, which are interactive, present a major problem for the players. The constant shift of consciousness between the state of immediacy and the state of hypermediation causes the players to oscillate, affecting the gaming experience.

Many scholars and active members in the field of videogame studies have noticed this problem, and have been trying to come up with solutions that would bridge the gap between narrative and gameplay to reduce the awareness of oscillation. The narratologists claim that videogames, like other storytelling media, are about stories, while the ludologists claim that videogames are about the mechanics of gameplay and interactivity.

Based on a literature review drawing on both camps, this thesis takes a middle view that first, game and story are different domains, second some game elements do carry narrative content, and finally, that appropriate implementation of narrative elements can make for a better game experience.

Specifically, the thesis argues that the incorporation of narrative within the design of the interface can align the experience of game with the experience of story, and minimize any disruption between the two.

The interface is the channel guiding the exchange of interactions between the players and the videogames; the players issue commands via the interface, and the responsive feedback generated by the system reaches the players also via the interface. The incorporation of narrative within that channel joins game and story in the heart of the game's magic circle.

The paper suggests six specific design strategies to narrativize interface elements. The following is a summary of the effects that each of the design strategy has on the gaming experience.

- **Look of the Interface:** Maintains a visual narrative flow across the interface and the storyworld; makes the interface less apparent and obvious, thus giving a unified identity to the interface and the storyworld.

- **Expressive Indicators of the Gameplay States – Game Metrics:** Expressive presentation of the game state information adds a high degree of narrative association to the interaction process by connecting the essence of the narrative to the corresponding sense(s) of the player. This also allows the designer to hide interfaces

elements to reveal more of the storyworld; less interruptive and less occupied screen space allowing a more direct visual immersion with the narrative content.

- **Behavioural Mimicking:** Bases the interactions on similar or identical behaviours. Reduces the learning curve, allows for stronger character identification between the player and the avatar, since the in-game actions are direct projections of the player's physical behaviours. Also allows for personalized playing styles, making individual gaming experience unique to each player.

- **Functional Metaphor:** Uses interactions derived from and reflect real world behaviours that reinforce narrative depiction via the interaction, making the form or the depiction of the interaction more associated to the essence of the action represented. Reduces the learning curve by basing the interactions on past experiences in different forms.

- **Perspectives:** Offers the most appropriate POV to allow the best interactions to take place during particular narrative events. The sense of agency and the identification to the character/storyworld is parallel to the perspective distance. Greater perspective distance grants higher agency and identification to the overall storyworld; shorter perspective distance grants higher agency and identification to the individual avatar(s).

- **Bridging:** Generates the game world based on the factors and rules of the real world. Expands the storyworld beyond the physical confines of the game world by combining the game world and the real world to generate the storyworld. Allows for stronger associations

between the real world and the storyworld, thus allowing more narrative associations to be exchanged between the two worlds.

The paper concludes, with the examination of a number of popular videogames on the market, and within the set of these successful examples, finds examples of each of the narrativized interface design strategies. The following is a summary of which of the design strategies are utilized in the case studies:

- *Okami*: Look of the Interface, Functional Metaphor, Expressive Indicators of the Gameplay States.
- *Resident Evil 4*: Look of the Interface, Expressive Indicators of the Gameplay States, Perspectives.
- *WarioWare: Smooth Moves*: Behaviour Mimicking, Functional Metaphor, Look of the Interface.
- *Gran Turismo 3: A-Spec:* Look of the Interface, Expressive Indicators of the Gameplay States, Behavioural Mimicking, Perspectives.
- *Portable Island*: Functional Metaphor, Bridging.

In conclusion, the author hopes that game designers will find this thesis useful in the identification and the further development of effective strategies, to join the pleasure of narrative with the pleasure of gameplay.

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