GWI: The Gameworld Interface[1]

Kristine Jørgensen
University of Bergen

Playing *Uncharted 3*, I move through the ruins of a city. I must scrutinize the environment to look for ledges to climb, doors to enter and passages through the debris in the once so lively marketplace. To be able to navigate the environment I must look for information inside of it, and utilize the affordances that it offers. I make hypotheses about what the environment allows me to do and try out the different alternatives, sometimes failing and other times finding the right direction. The game environment is a puzzle in itself, an area of exploration that provides very specific opportunities for gameplay.

When playing *World of Warcraft*, I can also use the environment as a guideline for how to interact with the world. Roads inform me about the safest routes through the landscape, and mountain ranges inform me about the borders between environmental zones. Huge monsters are likely bigger threats than small ones, and groups should generally be avoided. Whether a monster is a threat or not can also be detected by targeting that monster and look at their portrait: if it is yellow, the monster is not hostile; if it is red it is hostile and dangerous; and if it is grey it is of low level and will not give you any experience points. Also, available quests can also be located in the gameworld environment, and can be identified as exclamation marks above the heads of characters. In addition to making the gameworld informative through "natural" representations, this gameworld is augmented by the use of highlighting, symbols above character heads, and overlaid action bars, health meters and menus. To make sure all information gets across to the player, the game uses communicative techniques that give emphasis to particular game mechanics and other game features.

Uncharted 3 and *World of Warcraft* illustrate two visual trends in digital games. The approach of *Uncharted 3* can be identified as what Bolter and Grusin call *immediacy*, a "style of visual representation whose goal is to make the viewer forget the presence of the medium (…) and believe that he is in the presence of the objects of representation" (Bolter and Grusin 1999, 272-273). In this situation, they claim that "the user will move through the space interacting with the objects 'naturally,' as she does in the physical world" (Bolter and Grusin 2000, 23). This style aims for photorealism and the idea that involvement is enhanced when the game experience appear unmediated. Contrary to the style of immediacy, Bolter and Grusin identify the logics of *hypermediacy*, a "style of visual representation whose goal is to remind the viewer of the medium" (Bolter and Grusin 1999, 272). This is a style that draws

[1] This paper is a short version of the central argument in my forthcoming monograph, *Gameworld Interfaces*. Cambridge: Mass.: MIT Press, Dec 2013.

attention to itself, the communicative process, and the fact that games are participatory, and *World of Warcraft*'s specific emphasis on presenting specific kinds of information through symbols and icons rather than through fictional coherence may pose as an example of this.

In this paper I will use these examples as a point of departure in exploring the idea that the gameworld is an interface between the player and the game system. I will present two main reasons why the gameworld must be understood as an interface: because it is representational on several levels, and because it is the primary carrier of information and what allows interaction with the game. The gameworld interface is in this sense understood as a metaphor for the game system, hidden beyond an interactive and navigable world representation. It is an environment for imagination and storytelling, at the same time as it provides cues that inform the player how this environment may be interacted with. With this as background I will argue that the presence of game system information features such as arrows or exclamation marks above character heads, oversized swords, highlighted targets, as well as traditional WIMP features (windows, icons, menus and pointers), are natural to gameworld environments because they represent game mechanical features that reflect the world's logics as well as fictional realities such as injury or other physical effects.

This argument will also be discussed with point of departure in Bolter and Grusin's theory of the two visual styles of new media, *immediacy* and *hypermediacy* (Bolter and Grusin 1999). These will be coupled with ubiquitous computing (Dourish & Bell 2011, Weiser 1991, 1994), which emphasizes that technology must be considered a familiar and common part of our daily routines. Ubiquitous computing is connected to a contextual perspective of technology that stresses that technology must be designed in a way that makes sense with respect not only to the situation in which it will be should, but also with respect to the particular activity that the technology is there to support. With reference to ubiquity, I will present a critique of immediacy and hypermediacy that show that the gameworld interface is neither.

Definitions: interface and gameworld

Interface is commonly understood as an intermediary between two otherwise separate domains. Merriam-Webster's Dictionary defines an *interface* as "a common boundary or interconnection between systems, equipment, concepts, or human beings"[2]. This understanding is not specifically connected to technology, but is general and refers to any surface between two surfaces, such as windows, water, and even human skin. It is also membrane-like in that exchange may take place through that surface.

The word is often used when discussing man-machine interaction, where the interface is generally understood as what allows the user to interact with the system in a meaningful way. Soren Lauesen defines user interface as "the part of the system that you see, hear and feel" and that allows the user to interact with the computer (Lauesen 2005, 4); an understanding that implies a distinction between features that are revealed to the user and that are not. It

[2] This definition of *interface* is from *Merriam-Webster's Dictionary* (2013), http://dictionary.reference.com/browse/interface (accessed Sept 19, 2013).

stresses the fact that for most users, it is not relevant to have access to all aspects of a system. This is relevant for understanding the gameworld as an interface: as a world representation that reveals certain game information, and hides others. Translated to a game context, all that helps the player interact with the game, including all information provided to support gameplay can be considered part of the game user interface.

In most modern applications our interaction with technology happens through an interface, and we rarely experience the system behind it. Our experience and impression with a certain technology is always limited by the interaction that we are allowed through the interface. A similar perspective is also central to my understanding of the gameworld as interface. According to Lev Manovich, the interfaces of digital media challenge the traditional separation between content and medium, because it is "motivated by a work's content to such a degree that it can no longer be thought of as a separate level. Content and interface merge into one entity and no longer can be taken apart" (Manovich 2001, 67). In this sense, the gameworld interface questions the border between content and medium: it is not merely a surface or a medium that connects player and game, but the essence of the game itself and defining for the game experience.

Gameworlds are virtual and artificial environments, designed with gameplay in mind. As worlds they have a sense of *worldness* (Klastrup 2003, 2010); qualities that make them unique and distinguishable from other worlds, provide them with a certain degree of self-containedness, and that invites specific navigational properties and possibilities for interaction. Perhaps most importantly, worldness is connected to a sense of presence; more specifically the sense that the environment is a habitat and consequently as an *ecological* space for interaction where the inhabitants and the environment have an impact on each other (Gibson 1979, 7-8). Designed as ecology, gameworlds affect and are affected by player actions.

As ecologies, gameworlds are also a particular kind of *activity space* (Kaptelinin and Bannon 2012, 294), designed with a particular kind of activity in mind: gameplay activities. In this sense a defining aspect of gameworlds is that they are games: they are built for the purpose of gameplay and governed by game mechanics in order to support the gameplay activity. Gameworlds distinguish themselves from other world constructs by being structured as arenas for participation and contest (Klevjer 2007, 58), and are designed in a way that is meant to influence the player´s perception of as well as interaction with the environment (Björk and Holopainen 2005, 56-57). In this sense gameworlds are built according to principles of gameplay challenges and satisfying play experiences, rather than according to principles of photorealism or natural interaction. This means that the gameworld does not have to work according to any other rules than to its own internal logics connected to the mechanics of a game.

Why is the gameworld also an interface?

To claim that the gameworld is an interface does not mean that I reduce the gameworld to nothing but a communicative tool that helps the player interact with a more important game

system, or that the gameworld is not *really* the game; on the contrary, I argue that the gameworld is indeed at the core of the game and the gameplay experience. At the same time, however, I also want to stress that gameworlds cannot be seen as synonymous to fictional worlds or storyworlds. The fact that they are designed with gameplay in mind and governed by the logics of games makes them interactive surfaces that invite the player to particular game experiences. Thus, the gameworld interface is not only an informational system. In the gameworld, the conceptual game system is contextualized and made concrete as aspects of a world environment, and so the gameworld environment becomes the content itself: interacting with and experiencing the gameworld interface is also playing the game. Medium and content merge and become two aspects of the same experience, and one cannot understand the game system without also understanding the gameworld. In this sense, gameworld interfaces have an informational aspect and a representational aspect that merge together. There are two main reasons why the gameworld must be considered an interface: 1) It is representational on several levels; and 2) it integrates world and information – it is an informational space.

<u>Gameworld as representational</u>:

Gameworld interfaces are complex representational systems because they are both world metaphors explaining and contextualizing conceptual and abstract game systems and world representations that may resemble audiovisual fictional world representations as well as the physical world. Gameworlds use processes and behaviors with which we are familiar in other contexts as representative of game-system processes. This approach contextualizes the game mechanics and provides a framework for how to understand them. The representative aspect also provides an opportunity to add fictional context to the game situation.

This also leads into the idea that a gameworld is a metaphor because it contextualizes an abstract game system in the shape of a world that can be interacted with and explored. Here I see *metaphor* as “understanding and experiencing one kind of thing in terms of another” (Lakoff and Johnson 1980, 5). Thus, metaphors are not abstract representations, but are based on a degree of similarity in appearance or function between the representation and the system that is being represented (Keller and Stevens 2004, 1, 4). In this sense the gameworld represents an abstract game system hidden from the player's view in terms of a more comprehensible world environment. Since they represent something recognizable, using metaphors is a way to make game processes and mechanics more easily understandable for the player. For example, in *World of Warcraft* gathering specific items is central to many quests. This can be abstracted down to a resource-gathering game mechanism, where there is little technical difference between these quests and the collecting of resources in other games, whether this resource is money, ammunition, experience points, or something even more abstract. However, in *World of Warcraft* these are contextualized in different way through fictionalized situations: the player may gather flowers for an alchemist who needs them for an elixir; she may bring back the tails or ears of a scavenging group of wolves for a mayor who needs to have his village protected.

Understood as an interface between the player and the game system, the gameworld can be seen as representative of the game system. More specifically, the gameworld is a *concretization* of an abstract system; or in other words, a *reification* of the game system (Beaudouin-Lafon 2000, 449). It gives meaning to something that would be less interesting on its own, and may even make playable something that would not be a game on its own. The gameworld integrates the abstract game rules into an environment where they may be contextualized spatially and interacted with meaningfully in a way that allows the player to think about the game in terms of a gameworld instead of in terms of a rule system. This allows the player to stop thinking about the game rules and redirect focus on to the gameworld environment itself.

As gameworld are world representations, they are also easily coupled with fiction. However, even though gameworlds often may involve fiction, this does not mean that they are always and by definition fictional worlds (Tavinor 2012, 187). In order to avoid a longer debate about what fiction is, suffice it to say that I am mainly leaning on an intentional account where fiction is understood as expressions intended to evoke make-believe (Meskin and Robson 2012, 203-204). With reference to Kendall Walton I also want to point out that fiction may operate on two levels: on the level of the work, and on the level of the make-believe activity in the player's mind (Walton 1990, 58-61). This distinction is important for gameworlds because it implies that not everything intended as fiction is experienced as such, and that players may have a fictional experience with something not intended as fiction. This means that gameworlds are filled with props that can be used for make-believe activities, and that the mindset of a player can be as important as the work to the interpretation of whether something is understood as fictional or not.

As representation, we may understand fiction as an enactment or a depiction of a situation that does not actually exist in the physical world. Games often feature fictional representations. It is fictional that Nathan Drake, protagonist of the *Uncharted* series, is a descendant of Sir Francis Drake. In this sense fiction represents situations and events which are meant to be imagined, regardless of whether the player chooses to engage in a process of imagination or not (Walton 1990, 39). When gameworlds include a fictional layer of meaning, they become increasingly complex representational systems. It gives the game designers the option to choose whether to represent game mechanics and events as ludic or fictional. For instance, a quest may be represented both as a symbol above a character’s head, or as a cutscene or a character addressing the player. In both cases, the representation has an interesting dual status. Whether one uses a symbol above a character’s head or a cutscene, both refer to the game mechanic known as a quest. At the same time, however, both representations also refer to an event in the gameworld: someone wanting the player’s help. They have both a functional role with respect to the game system, at the same time as they have a representation status in the gameworld environment.

<u>Gameworld as an informational space</u>:
As gameworlds are interactive systems that operate according to a set of game rules, they need to carry information that allows players to understand the environment and that supports

gameplay interaction. In order for players to be able to have a meaningful and satisfactory gameplay experience, it is crucial that the gameworld has clear and situation-appropriate information that is able to distinguish between gameplay-relevant information and ornamental or decorative information. Exactly how a game does this depends upon genre and the established contract between player and the game. Donald Norman argues that similarity to the physical environment not necessarily makes it obvious how to interact with designed systems (Norman 2008). Since interaction tends to be culturally dependent and needs to be learned, he argues that designers should provide cues that make it clear for the user how to interact with the object. This means that designers cannot assume that the gameworld is communicative simply because it reminds the player of other kinds of worlds.

The consequence of this is that also gameworlds that aim at creating a sense of immediacy by attempting to create the illusion of non-mediation must have a system that can distinguish between degrees of urgency and kinds of interactivity. Contrary to what the advocates of immediacy argue, games that aim for a pure photorealist style run the risk of becoming frustrating to the player because they do not communicate clearly all gameplay-relevant information. As a matter of fact, direct and penetrating communication that goes against fictional coherence may often heighten the sense of involvement because it provides meaningful information in a clear manner that eases interaction. A digital game must prioritize information that stresses that game's particular game mechanics, and whether this is achieved by overlay and symbols or through features that correspond with the idea we have of a coherent reality is a matter of the needs of the game.

Because there is a gameplay-related tight relationship between the gameworld and the game information, all game informational features must be considered part of the gameworld, regardless of whether they are presented as overlays, symbols such as exclamation marks included into the geometry of the gameworld, or highlighting and emphasis given to particular features in the environment. The gameworld may manifest itself in different ways and may also represent game mechanics and other game features in different ways. The fact that they sometimes are represented as overlays and through features that break radically with the idea of fictional coherence does not remove their existence from the gameworld – an item in the inventory still exists in the game universe even though it is represented as an icon inside a pop-up table. This is also the case for the available abilities in the *World of Warcraft* action bars – as they represent actual abilities with potential effects in the gameworld ecology, there is no doubt that they do exist in the game universe. There is however a great difference between games and genres with regards to how they may present information about game elements such as these. Different game mechanics, different game pace, different focus, and different degrees of urgency contribute to games having different needs for presenting the player with information. This stresses the need for certain kinds of information, and also the fact that whenever the information is needed and feels meaningful for the player, it is not alien to the gameworld.

The point I am making here is that gameworlds are a particular kind of informational world environment characterized by genre conventions that are different from that of other world

constructs with which they can be compared. As long as a feature provides information that supports gameplay, it is part of the gameworld and part of the interface. Because the interface is presented as a tool for interaction, it does not matter whether system information is only partly implemented into the gameworld as long as it provides necessary information and is consistent.

The gameworld and ubiquitous computing

In the following I will argue that the flexibility of gameworlds discussed in the preceding paragraph is connected to the fact that gameworld design corresponds to *ubiquitous computing*. Ubiquitous computing is a design philosophy that argues for making computing technology an omnipresent feature of everyday life. Ubiquitous computing is sensitive to context and aims to create user technologies that are so well integrated and domesticated into our daily activities that they make interacting with technology feel as natural and commonplace as our interaction with other tools that we use in our everyday lives (Tolmie et al 2002, 403, Weiser, 1994, 1). The goal is to make technology feel non-intrusive through familiarity because it is only when we are thoroughly comfortable with using a specific tool that we can stop thinking about the tools themselves and instead focus on the goals they are there to help us achieve (Weiser 1991, 94). Rather than aiming for immediacy that indicates removing all traces of mediation, designers should create a communicative system that provides the relevant information without being the center of attention. This system must seamlessly aid the player and thus be able to lead the player's focus towards the important activities. As Donald Norman argues, the user interface "should be just something that aids, something that does not get in the way, and above all, something that does not attract attention and energy to itself" (Norman 1990, 210). Attention should be on the activity rather than on the tools. The tools should be made *unremarkable*: something we do not pay attention to because they are made to fit the experience (Tolmie, et al. 2002).

If we compare this to the style of immediacy, ubiquity is not about making game system information disappear completely in the sense that the experience feels unmediated, but about the mediation process feeling meaningful in the gameplay situation. Because gameworlds are governed not by fictional coherence but by game mechanics, their audiovisual style as well as world design is in concert with ubiquity rather than immediacy or photorealistic transparency. Game designer Jesse Schell stresses this by arguing that designers must keep focus on whether or not the user interface provides relevant information to the player without feeling intrusive (Schell 2008, 227). In this sense the goal is to make the tools for interaction disappear into the "experiential background" (Penny 1995, 55), not to remove them from the player's audiovisual perspective. Transferred to a game context, this means not only that the interface must be able to communicate relevant game system information, but that this should feel unobtrusive and as an inherent part of the game activity itself. Ubiquitous computing is about making technology a natural part of the environment in which it is in. Tools for interaction, regardless of representation, are natural to gameworlds and this is why we accept information that stands out as not coherent with the fictional reality to which we are presented. Judged on the basis of gameworlds and how they ask players to interact with them, the idea of transparency understood as removing the sense of interacting through a medium is

a fallacy, or rather, an unattainable ideal. To create the impression that interacting with the game is an unmediated activity is neither desired nor achievable if one wants to create a ludic experience. In this situation it is more important to secure that the player receives gameplay-relevant information in a manner that is immediately understandable, easy to respond to, and not tiresome to focus on during gameplay.

It is also important to state that although ubiquity is about clear and relevant communication, it is not synonymous to hypermediacy. Bolter and Grusin argues however that ubiquity is "virtual reality turned inside out" (1999, 217), and an "extreme form of hypermediacy" (1999, 218). Although gameworlds indeed must draw attention towards the mediation process, the purpose is not to make the user at all times attentive to the fact that they are involved in a mediation process; rather it is to convey information that allows the users to interact smoothly and without error with the system without it getting in the way of the activity itself. Like the ribs of a felt-tip pen, the information is there, constantly assisting the user and making the writing process less tiresome, but they do so without being obtrusive (Norman 1998, 28). This means that a game user interface may indeed be intuitive and involving even when it is not made transparent or implemented into the gameworld.

Claiming that gameworlds and ubiquitous computing are form of hypermediacy where awareness of the mediation process becomes more important than the information that it carries, ignores the fact that much of the interaction that we have with the physical world is also mediated – also those that do not involve technology: we use tools such as cutlery when we eat, and pens or computers when we write (Beaudouin-Lafon 2000, 448). Even though we are interacting through intermediaries, these tools do not make the experience feel overly mediated or intrusive to the activity; on the contrary they are experienced not only as useful tools, but as natural to the situation – they are ubiquitous. Ubiquity is in this sense not about hypermediation, but about making the interaction feel smooth and transparent even though the tools themselves do not disappear.

Hypermediacy is about overexposing the mediation process and making it too obvious, in the way Bolter and Grusin experienced in the late 90s: low resolution computer interfaces and a heavy use of WIMP features. Hypermediacy is chronically associated with too much stimuli and too much information going on at the same time. Hypermediacy is such an extreme visual style that it "reminds us of our desire for immediacy" (Bolter and Grusin 1999, 34). While this is not a precise characteristic of the gameworld interface generally, this this does not mean that digital games never use hypermediation. Sometimes a gameworld must point to its own functionality and thus inform the player about which features in the gameworld carry this information, often to a degree of self-consciousness that goes beyond the meta-references of traditional fictional media. However, it is important to point out that there is a difference between a highlighted object in the gameworld and Max Payne reflecting upon his status as a game character. While the first is an example of ubiquitous computing, the second reflects an extreme variant of metareferences covered by hypermediacy.

Summary

This paper has argued for the gameworld interface – the idea that the gameworld must be considered an interface between the player and the game system. However, this argument does not mean that the gameworld is being reduced to a communicative tool; on the contrary, I have argued that the gameworld interface is at the core of the gameplay experience, and that it must be considered to *be* the game itself. Interacting with the gameworld is playing the game, and this stresses the idea that the gameworld is both content and medium at the same time. Also, I want to put emphasis on the thought that this is not a paradox – rather, it is a defining feature of the game medium due to its interactive and participatory nature. It is a convention of the medium.

The idea that the gameworld is an interface also means that I regard all informational elements as inherent to the gameworld – regardless of whether they are represented as symbols above character heads or other features that do not support a coherent fictional world. As long as such elements represent something that has impact on or reality status in the gameworld, they must be considered part of the gameworld for functional reasons.

A conclusion to be made from this argument is that the most central issue is not that the user interface should be removed completely from the player's audiovisual attention, but rather that it should not become the focus of player attention. From this perspective, a successful user interface is one that communicates meaningfully in its game context but does not draw negative attention to itself.

Bibliography

Beaudouin-Lafon, M. (2000): "Instrumental Interaction: An Interaction Model for Designing Post-WIMP User Interfaces." In *CHI '00: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 446–453. New York: ACM Press.

Björk, S. and Holopainen, J. (2005): *Patterns in Game Design*. Boston, Mass.: Charles River Media.

Bolter, J. D. and Grusin, R. (2000): *Remediation. Understanding New Media.* Cambridge, Mass.: MIT Press.

Dourish, P. and Bell, G. (2011): *Divining a Digital Future: Mess and Mythology in Ubiquitous Computing.* Cambridge, Mass.: MIT Press.

Kaptelinin, V. and Bannon, L.J. (2012): "Interaction Design Beyond the Product: Creating Technology-Enhanced Activity Spaces." In *Human-Computer Interaction*, Vol. 27, no. 3: 277-309.

Keller, P. and Stevens, K. (2004): "Meaning from Environmental Sounds: Types of Signal–Referent Relations and Their Effect on Recognizing Auditory Icons." In *Journal of Experimental Psychology: Applied* 10 (1)

Klastrup, L. (2003): *Towards A Poetics of Virtual Worlds - Multi-user Textuality and The Emergence of Story.* PhD Thesis, Copenhagen: IT University of Copenhagen.

Klastrup. L. (2010): "Understanding online (game) worlds." In Hunsinger, J., Klastrup L., and Allen, M. (eds.): *The International Handbook of Internet Research*. Dordrecht, Heidelberg, London and New York: Springer Verlag.

Klevjer, R. (2007): *What Is the Avatar? Fiction and Embodiment in Avatar-Based Singleplayer Computer Games*. PhD diss., University of Bergen.

Lakoff, G. and Johnson, M. (1980): *Metaphors We Live By*. Chicago: University of Chicago Press.

Lauesen, S. (2005): *User Interface Design. A Software Engineering Perspective*. Harlow: Pearson Education Limited/Addison-Wesley.

Manovich, L. (2001): *The Language of New Media*. Cambridge, Mass.: MIT Press.

Meskin, A. and Robson, J. (2012): "Fiction and Fictional Worlds in Videogames". In Sageng, J. R., Larsen, T. M. and Fossheim, H. (eds.): The *Philosophy of Computer Games*, Dordrecht, Springer.

Norman, D. (1990): "Why Interfaces Don't Work". In Laurel, B. (ed.): *The Art of Human-Computer Interaction*. Reading, MA: Addison Wesley

Penny, S. (1995): "Consumer Culture and the Technological Imperative: The Artist in Dataspace". In Penny, S. (ed.): *Critical Issues in Electronic Media*. Albany: State University of New York Press

Schell, J. (2008): *The Art of Game Design: A Book of Lenses*. Burlington, MA: Morgan Kaufmann.

Tavinor, G. (2012): "Videogames and Fictionalism." In Sageng, J.R, Larsen, T.M. and Fossheim, H. (eds.): *The Philosophy of Computer Games*. Dordrecht, Heidelberg, New York, London: Springer.

Tolmie, P., Pycock, J., Diggins, T., MacLean, A. and Karsenty, A. (2002): "Unremarkable Computing." In *Proceedings of CHI 2002*, 399–405. New York: ACM Press

Walton, K. L. (1990): *Mimesis as Make-Believe. On the Foundations of the Representational Arts.* Cambridge, Mass.: Harvard University Press.

Weiser, M. (1994): "Creating the invisible interface: (invited talk)." In *UIST '94: Proceedings of the 7th annual ACM symposium on User interface software and technology.* New York: ACM Press, 1.

Weiser, M. (1994): "The Computer for the 21st Century." *Scientific American*, Sept: 94-104.

Ludography

WORLD OF WARCRAFT. Blizzard Entertainment/Vivendi Games, PC, 2004.

UNCHARTED 3: DRAKE'S DECEPTION. Naugthy Dog/Sony Computer Entertainment, PS3, 2011.

THE SIMS. EA Games, PC, 2009.