Remediation, Immediacy and Hypermediacy within Video Game User Interfaces.

Remediation (Bolter and Grusin, 1999), the concept concerning a medium being refashioned and adapted within another medium, is a popular theory in media studies, particularly areas focused on new media. Bolter and Grusin believe remediation is a part of all media. Remediation is a strong concept, but is it really applicable to games and the user interface? Or, is there a stronger model which can be used? Such as those developed by Fagerholt and Lorentzon in their masters thesis Beyond the HUD (2009)

According to Llanos and Jorgensen (2011) "the game user interface is any and all features that provide information or assist the player in interacting with the game." With this in mind how do remediation and its related theories affect the user interface of games; do the models of Fagerholt and Lorentzon present us with a better model of analysis?

The relevance of the debate is fundamental, as Bolter and Grusin may not be completely applicable to games, it is important to determine whether Fagerholt and Lorentzon's model undermines remediation, or, if we can link these theories.

Understanding remediation, through the lens of Fagerholt and Lorentzon's findings, could help to better understand the user interface and its affect on the player. This could in turn help to design better interfaces in the future. It may also help to draw parallels between multiple theories, furthering academic understanding of those topics.

In order to accurately understand and compare these theories an understanding of several other concepts and areas of thought will need to be studied such as Flow, immersion and user interface design.

Remediation

Remediation, as described by Bolter and Grusin (1999), is a term referring to the manner in which one medium refashions another medium within itself. Bolter and Grusin's theory of remediation, and its associated concepts of immediacy and hypermediacy, can arguably be applied to video games, particularly user interfaces.

An act of remediation can be as straightforward as reading a book in a digital form, or as complex as the use of filmic theory for framing a scene within a video game. One clear example would be the Amazon Kindle (figure 1.1), a tablet specifically designed to read books in electronic format.

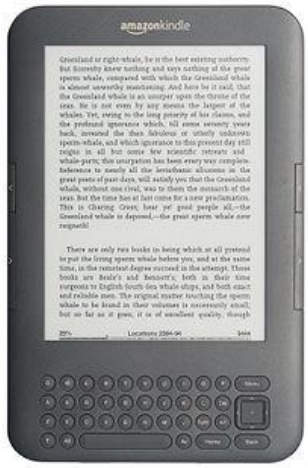

Figure 1.1, Amazon Kindle

Bolter and Grusin also explain how remediation has two component elements called immediacy and hypermediacy. Immediacy describes the manner in which a medium constructs a direct, transparent connection to a viewer. In doing so immediate media hide their mediating nature. In contrast, hypermediating systems do not hide their mediating nature, and instead present themselves as being composed of interacting media in which the collaborations between subsidiary forms are obvious to the viewer.

Immediacy attempts to get an immediate emotional response through a more direct connection between media and viewer. The idea here is for the media itself to become transparent and therefore more real and immersive to the viewer; such as with a photograph or photo-realistic artwork. A good example would be Trompe-l’oeil paintings within The St Ignatius' Church by Andrea Pozzo (figure 1.2), a painting so realistic and immediate as to make even recognising the roof line difficult, presenting the illusion of a much taller building open to the sky.

Figure 1.2, The St Ignatius' Church, ceiling

Conversely, hypermediacy attempts to make the media more fulfilling by giving a multitude of information at once, usually in various forms. Examples of this are newspapers and websites with their collage of information. It can also simply describe where the media makes the viewer directly aware of itself and it becomes opaque; such as within most news sites. Yahoo7 (figure 1.3) for example shows everything from new headlines, polls, advertisements, a search function and links to email and other special interest pages all on a single page. The intention with delivering the medium in this way is to give the viewer the most fulfilling and accurate information possible.

Figure 1.3, Yahoo7 web site

Remediation (1999) is read and adapted to a variety of fields. A few fields where remediation has been adapted include literary studies (Galey, Cunningham, Nelson, Siemens and Werstine, 2009), sociology (Graham, 2004) and intermediality (Rajewsky, 2005). Rajewsky (2005) talks about remediation as a type of intermediality. Intermediality is the term covering that which exists between media, often covering not only the relationships between different media but also the creation of hybrid mediums and adaptations, in a similar fashion to that discussed within remediation (1999). Rajewsky states that remediation is simply one type of intermedial relationship (2005).

Galery, Cunningham, Nelson, Siemens and Werstine (2009) discuss remediation at length, giving several good examples. They seem to take issue with the fact that remediation implies the need to fix something which is broken, as well as its strong reliance on older mediums, which is not always the case; the example they use for this is the codex structure of the book. Even modern e-books, remediations of texts to digital form, use the same structure and form that traditional books have done for centuries. Beyond Remediation (2009) points out that the cultural persistence of the centuries old codex structure is demonstration that the form is not ‘broken’ as remediation implies. However, they are quick to point out that far older structures were replaced by the codex, such as clay tablets and scrolls.

Graham (2004) talks about the concept of the information society and how new media and sociology are connected. Graham (2004) explains that Bolter and Grusin have made a major contribution in this area with their discussion of new media remediating the existing media of TV, newspapers and radio, as well as face-to-face communication, demonstrating that the old mediums will not disappear with the movement into the information age but subtly change form.

In 'The Language of New Media' (Manovich, 2001) Remediation is discussed with regards to Human Computer Interaction, or HCI. Manovich explains that the history of HCI is filled with the remediation of various earlier mediums and even the physical environment, such as the 'desktop' metaphor. This comparison is particularly helpful as HCI is very closely connected to video games as they are an interactive digital media.

Games themselves remediate in a similar fashion; most games attempt to represent real world objects and even people within themselves, even often representing other media such as books, newspapers or TV within themselves. Whether this is in a realistic, immediate manner or a more stylised hypermediated fashion is highly variable however.

Bolter and Grusin provide two game examples to support their model, namely *Quake* and *Myst*. They position Quake as a remediation of the subjective camera from film and its attempts to be immediate despite its hypermediated UI. They consider Myst to be a remediation of the book.

The debate opens

However, there are several reasons why Bolter and Grusin's approach may be problematic when applied to games. Their model does not account for the manner in which genre affects user interface in games, as their game examples derive only from two genres - the only concrete examples they provide are Quake (id Software, 1996) and Myst (Cyan, 1993).

Secondly, while Bolter and Grusin discuss how games are attempting to move away from the hypermediacy of their past into a more immediate form by hiding their mediation, modern HUDs within first person shooters are moving away from a numerical or graphical form such as in *DOOM* (id Software, 1993) to represent elements such as health and ammo. This is true in terms of modern shooters, which tend to favour on-screen effects such as those demonstrated in the *Call of Duty: Modern Warfare* series, as well as representing elements like ammo on the weapon itself such as in the *Dead Space* series, this has not been true in other genres.

Figure 2.1, DOOM interface

Figure 2.2, Dead Space 2, ammo

Fagerholt and Lorentzon (2009) may help to solve this problem, as their work develops its own models of the user interface of games and, through user testing, qualifies which types of interface element work best in different scenarios. Their work discusses the user interface in great detail; their models were developed as part of a project with the goal of qualifying immersion in First Person Shooters. In the process of doing this they develop very helpful models for breaking up different user interface elements within games of any genre.

Immersion is defined as "[the] extent to which a person's cognitive and perceptual systems are tricked into believing they are somewhere other than their physical location" (Patrick, 2000 found in Fagerholt and Lorentzon, 2010), this experience is considered to always be pleasurable (Murray, 1996 found in Fagerholt and Lorentzon 2010).

If it is possible to integrate Bolter and Grusin with Fagerholt and Lorentzon then this will enable a far deeper understanding of the user interface and will enable us to better design them in the future. In order to do this it is necessary to understand both theories in detail and their implications on the video game user interface. It is possible to compare the two models in order to find parallels and differences.

Fagerhot and Lorentzon

Fagerholt and Lorentzon are attempting to categorise the different elements of the user interface and they use the qualifiers of the 3D environment within the game and the fiction of the game to do this. By breaking up the user interface into different types they are then able to test the effects of the different types of elements on users to determine how user interfaces should be designed in the future. Specifically within the thesis this is focused on First Person Shooters (FPS), but their model is applicable to any 3d video game and they use many non-FPS examples.

A large portion of Beyond the HUD is dedicated to outlining the topics and theories relevant to their study, this serves to give the reader a thorough enough understanding of their field of enquiry no matter their level of study in the area, before going on to outlining their project itself and their findings.

Fagerholt and Lorentzon (2009) draw parallels between the concept of immersion and that of the psychological state of Flow (Chiksentmihyli, 1991 found in Fagerholt and Lorentzon 2009). These two theories are also similar to that which immediacy attempts to gain. Chiksentmihyli describes Flow as a psychological state where the difficulty of a task and the skill of the user are perfectly matched, thereby allowing for a trance-like state of deep concentration which is considered pleasurable. The two main interface element types that suit a comparative analysis of remediation (1999) and beyond the HUD (2009) are diagetic and non-diagetic. A diagetic element exists within both the game fiction and the games 3D space where as a non-diagetic interface exists in neither (figure 3.1). Fagerholt and Lorentzon's study found that diagetic interfaces, such as those within Dead Space (EA Redwood Shores, 2008) and Far Cry 2 (Ubisoft, 2008), were more conducive to immersion in single player and narrative driven games whereas non-diagetic interfaces, like those seen in RTS games and MMOs, were preferred for competitive games. The reasoning for this given in testing was that players felt a greater need for specific, unambiguous information in certain scenarios, whereas more integrated information assisted player engagement with the world space of the game.

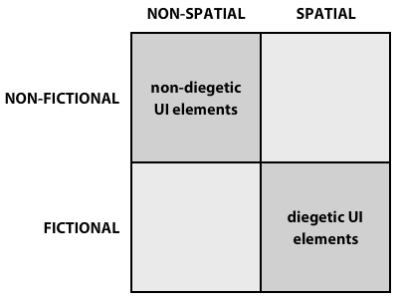

Figure 3.1, Interface elements according to fiction and spatiality, from Fagerholt and Lorentzon 2009

There are of course blends of these. An element that exists in the environment but not the fiction is considered to be a geometric (or spatial) element. An example of this would be the manner in which objectives are conveyed to the player within *Splinter Cell Conviction* (figure 3.2). The text is shown as if projected onto a wall existing within the game world, but it very obviously has no place within the game fiction and is not acknowledged by the games characters in any way.

Figure 3.2, Splinter Cell Conviction

Figure 3.3, Call of Duty: Modern Warfare 2

A UI element that exists within the game fiction but not the 3d space, which is usually considered to be on the camera, is called a Meta element. An example of this would be blood effects in modern shooters to represent damage to the player; this example is from *Call of Duty: Modern Warfare 2* (figure 3.3).

Fagerholt and Lorentzon also go into further detail on elements that serve dual purposes and game elements such as signifiers. Figure 3.4 is their diagram for all forms of interface elements.

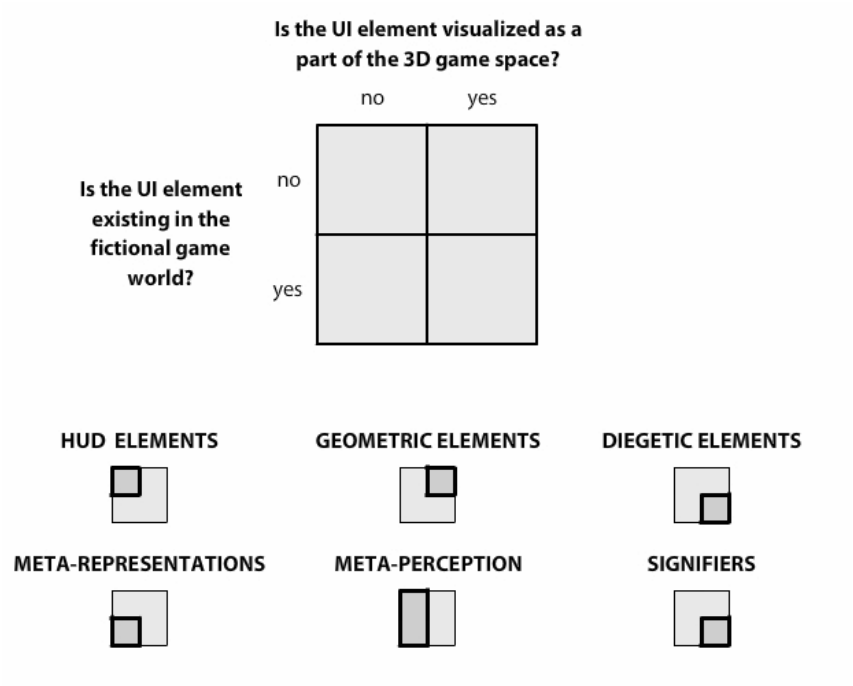

Figure 3.4, User Interface Elements, from Fagerholt and Lorentzon 2009

Signifiers are a type of diagetic element that convey more ambiguous information, as opposed to conveying information traditionally part of a non-diagetic HUD. An example of a signifier would be a flaming barrel indicating it may explode, or trail of blood implying possible danger.

A meta perception is an element existing in the game world presented in an overlay manner, such as reading a book within the role playing game *The Elder Scrolls V: Skyrim* by Bethesda Softworks (2011), the book exists within the fiction but is being presented in a manner which is not consistent with the game fiction (non-spatially) (figure 3.5).

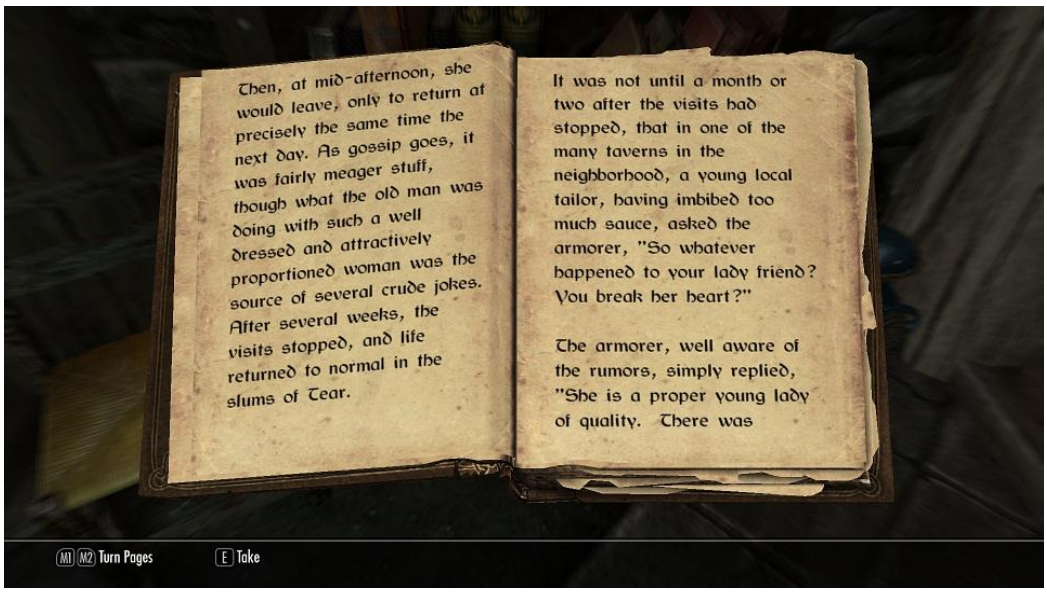

Figure 3.5, Reading a book in Skyrim

Llanos and Jorgensen (2011) references Fagerholt and Lorentzon heavily. Llanos and Jorgensen attempt to answer the question of player preference with regard to diagetic interfaces (which they term *integrated*) through literature review and qualitative analysis. They describe Fagerholt and Lorentzon as having a middle ground view on the topic stating that Fagerholt and Lorentzon believe that, while integrated information is preferable, where it is not possible to present appropriate information effectively then functionality becomes far more important (Llanos, Jorgensen, 2011). This is reinforced by their own findings, within their own study Llanos and Jorgensen (2011) found that whilst players appreciate minimalist user interfaces they always prefer to have all the information they require available. However, as soon as the interface begins to become intrusive and cluttered players had greatly reduced engagement. Fagerholt and Lorentzon have also entered the practitioner knowledge base (Andrews, 2010)

Remediation often talks about mediums in terms of a window, particularly when discussing immediacy. Fagerholt and Lorentzon discuss that traditionally the UI of first person shooters is seen in terms of layers over a similar window-like space, describing the typical conventions showing the game as composed of the world, filter and overlay (figure 3.6).

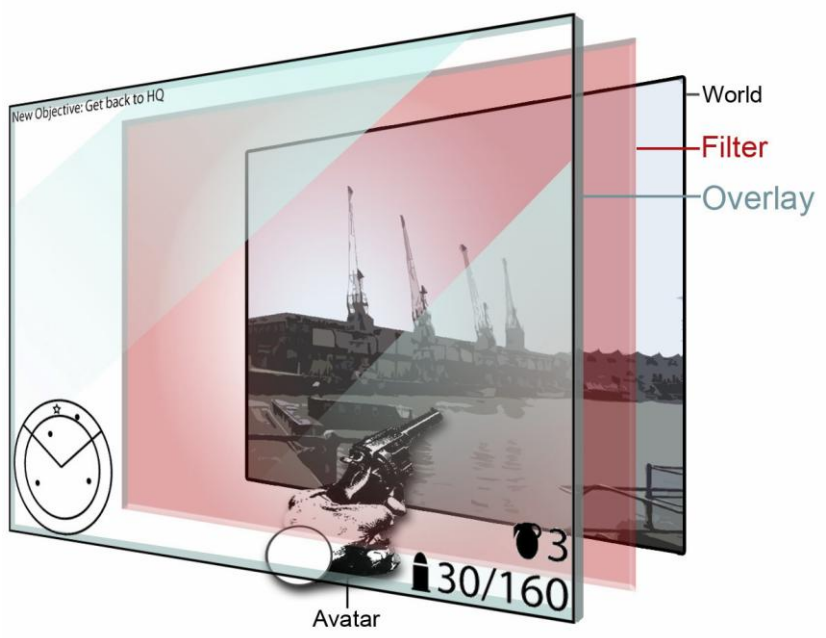

Figure 3.6, Visual UI conventions of FPS games from Fagerholt and Lorentzon 2009

Discussion

As can be seen from the review of Fagerholt and Lorentzon, certain issues arise if we want to apply Bolter and Grusin to games. However, it is possible to interpret the concept of hypermediacy as more prevalent in a non-diagetic interface and immediacy stronger in a diagetic one, though some measure of hypermediacy will still exist. The models developed by Fagerholt and Lorentzon are far broader than the concepts of Bolter and Grusin and are targeted at games rather than being intended as broad and relating to all forms of media. Because of this, only diagetic and non-diagetic from Fagerholt and Lorentzon's models are applicable to any analysis of Bolter and Grusin.

The fact that non-diagetic interface elements could be preferred by players is contrary to the observations put forward by Bolter and Grusin (1999). Through their discussion of Quake, an

early First Person Shooter, they discuss how games are pushing more and more towards immediacy as they evolve. Clearly they were writing too soon to be able to account for differences in genre as many of the genres covered within Fagerholt and Lorentzon's study were not fully fledged, if they existed at all, at the time of remediation's writing. According to Fagerholt and Lorentzon's findings in Beyond the HUD (2009) Bolter and Grusin were correct in terms of First Person Shooters and narrative heavy titles, but not in all games. However, there are also points where the findings of Fagerholt and Lorentzon support the theories of Bolter and Grusin.

The experience of hypermediacy, as described by Bolter and Grusin, was described as preferable in situations where more, or less ambiguous, information is required. This matches with Fagerholt and Lorentzon's findings with regard to RTS and competitive games where they found those same reasons for users preferring non-diagetic interfaces in certain instances. A strong example of this would be the highly successful competitive multiplayer game League of Legends (figure 4.1). League of Legends uses a predominantly non-diagetic interface which is largely the same as that of its progenitor Defence of The Ancients, a game mod within the Real Time Strategy game Warcraft III.

Figure 4.1, League of Legends interface

Whilst League of Legends is not completely devoid of diagetic elements, such as visualisations of character ability enhancements (though these could arguably be spatial elements in many cases) and signifiers, there is a strong reliance on non-diagetic and spatial information.

Popular MMO World of Warcraft (Blizzard Entertainment, 2004) also relies heavily on a non-diagetic interface and is assisted strongly by spatial elements. World of Warcraft has a strong competitive focus even within allied groups which has even necessitated players modifying their user interfaces and adding additional non-diagetic features such as damage per second meters like 'Recount' to enhance their play experience and monitor that of others (figure 4.2).

Figure 4.2, World of Warcraft modified UI with Recount

The fact that players want to modify their own user interface opens a host of possible analysis based on their own choices of user interface design. Furthermore, that they actively wish to add more non-diagetic, and therefore hypermediated, elements in order to obtain further detailed information points to the usefulness of hypermediacy within the UI and that it does not necessarily damage the play experience.

Diagetic interfaces, which Fagerholt and Lorentzon (2009) found to present greater engagement with players when dealing with a narrative driven title, have a similar influence on the viewer as is intended with immediate media. The player feels a more direct connection to the media and it is more able to affect them and allow for immersion.

The clearest example of a completely diagetic interface is within Dead Space (EA Redwood Shores, 2008). The interface within Dead Space is entirely existent within the game's universe and internal fiction (with the exception of representing the controls). The protagonist is fitted with a 'RIG' which presents his health in a bar-like manner, which is consistent with non-diagetic HUD conventions and thus easily understood by the player, down his back and elements such as ammo readouts, aiming and maps are presented to the protagonist (as opposed to the player) via holographic projections from his suit (figure 4.3). This enables the player to easily interpret this information whilst also restricting the information to inside the fiction of the title.

Figure 4.2, Dead Space map hologram

Far Cry 2 (Ubisoft, 2008) is another strong example, it uses a largely diagetic user interface with minimal non-diagetic and meta elements. Maps and pathing assistance is presented by a diagetic map and compass or GPS device (figure 4.3) which are sometimes augmented with some non-diagetic elements, weapon condition is shown diagetically with rusty weapons sometimes jamming and the player is often forced to rely on road signs (which change colour) in order to find their way through the environment. The first person viewpoint (which Bolter and Grusin consider a remediation of a film technique) also allows for greater immersion, placing the player in the position of the protagonist rather than as an observer.

Figure 4.3 Far Cry 2 map and compass

Conclusion

Remediation is a strong concept to use within games and the user interface, with most games involving remediation in one fashion or another. However, immediacy and hypermediacy are far less applicable than Fagerholt and Lorentzon's specifically developed models of the diagetic and non-diagetic. It is possible to look at games in terms of immediacy and hypermediacy and it may be considerable when observing the relationship between immediacy and immersion, however the models presented by Fagerholt and Lorentzon are better equipped to handle the broad range of visual representations the user interface of video games present.

Through the development of this thesis the issue arose of, what exactly is the relationship between immediacy, flow and immersion? All three concepts refer to a direct connection between the medium and the user, devoid of recognition of the medium as being a medium at all, and all are considered to enhance the experience of the user through that connection.

Immediacy is considered a direct connection to the medium, making the user unaware of the medium as being such. Immersion is being so engrossed within a medium so as to feel completely connected with it, as if you are a part of it and the world around you disappears. Flow, is the psychological state where an action perfectly matches its difficulty and your skill, leading to a trance-like engagement where your actions and experience are enhanced and all thought is devoted to the task.

It is clear with such similar theories, that perhaps a unified theory could be developed. Such a unified theory would have broad reaching implications in many fields, from Media Studies to Psychology.

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Figure 1.1, Amazon Kindle [image] (n.d.)., retrieved 10th of November 2011 from, http://en.wikipedia.org/wiki/Amazon_Kindle

Figure 1.2, St Ignatius Church [image] (n.d.)., ceiling, retrieved 17th of November 2011 from, http://en.wikipedia.org/wiki/Andrea_Pozzo#The_St_Ignatius.27_Church

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Figure 2.1, DOOM interface [image] (n.d.)., retrieved 10th of November 2011 from, http://doom.wikia.com/wiki/Imp

Figure 2.2, Dead Space, ammo [image] (n.d.)., retrieved 10th of November 2011 from, http://zachpallen.wordpress.com/

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Figure 3.4, User Interface Elements [image] (2010), from Fagerholt and Lorentzon 2009

Figure 3.5, Reading a book in Skyrim [image] (2011), Bethesda Softworks 2011

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Figure 4.2, World of Warcraft modified UI with recount [image] (n.d.)., retrieved 1st of December 2011 from, http://gallery.neoseeker.com/Sonic%20Flash/photostream/2690240018

Figure 4.3, Dead Space map hologram [image] (n.d.)., retrieved 1st of December 2011 from, http://ve3d.ign.com/articles/news/40996/Dead-Space-Gameplay-Movie

Figure 4.4, Far Cry 2 map and compass [image] (n.d.)., retrieved 1st of December 2011 from, http://multiplayerblog.mtv.com/category/far-cry-2/