

**IMPACTS OF THE IMMERSIVE INTERFACE DESIGN MODEL  
ON THE IMAGE-SPECTATOR INTERACTION IN NEW MEDIA**

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By

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## ABSTRACT

### IMPACTS OF THE IMMERSIVE INTERFACE DESIGN MODEL ON THE IMAGE-SPECTATOR INTERACTION IN NEW MEDIA

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This study mainly analyzes the major derive for the spectators to interact with the images in new media in terms of its psychological and physical functions. Firstly, these reasons underlying these functions are examined as derives for the experience of presence. Although the major connotation of the word *presence* is physical presence, the psychological aspect of *presence* is also regarded as a part of immersion and interaction in new media. Secondly, *The Apparatus Model*, which is a transparent interface design model, is analyzed in terms of a tool that improves the interactivity between the spectator and the image in new media. Finally, a more detailed discussion is made on the constraints for interaction, and how this ideological model can overcome these constraints.

**Keywords:** New Media, Image, Interactivity, Immersion, Experience, Presence, Apparatus, Immediacy, Hypermediacy, Transparent Interface Design, Perspective

## ÖZET

# YENİ MEDYADA “IMMERSIVE” ARAYÜZ TASARIM MODELİNİN İMGE-İZLEYİCİ ETKİLEŞİMİ ÜZERİNE OLAN ETKİLERİ

Didem Özkul

Medya ve Görsel Çalışmalar  
Yüksek Lisans

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Bu çalışma temel olarak, yeni medyada izleyicilerin imgelerle etkileşim içine girmelerini sağlayan başlıca faktörleri psikolojik ve fiziksel bağlamda inceler. Bu faktörler, *var olma* deneyimini etkileyen faktörler adı altında analiz edilmiştir. Genel olarak *var olma* kavramı fiziksel bir kuramın parçasıdır, fakat yeni medyada bu kavram sadece fiziksel değil, aynı zamanda zihinsel ve psikolojik bir etkileşimin parçası olarak ele alınmıştır. *Apparatus Modeli* diye adlandırılan geçirgen şeffaf arayüz tasarım modelinin, yeni medyada izleyiciler ve imgeler arasındaki etkileşimi geliştirdiği ve güçlendirdiği savunulmakla beraber, bu modelin imge etkileşimi üzerine olumsuz etkisi olan etmenleri ortadan kaldırdığı öne sürülmektedir.

**Anahtar Sözcükler:**Yeni Medya, İmge, Etkileşim, “Immersion”, Deneyim, Var olma, “Apparatus”, Şeffaf Arayüz Tasarımı, Perspektif

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## CHAPTER 1

### INTRODUCTION

From the beginning till the end of our lives, we occupy a certain space in the physical and in the social world. Although this presence firstly comes into mind as the physical presence, the very essence of our being is the mental presence. We socialize, we communicate, and we try to understand different people and their different life experiences. We realize our presence mentally when we express ourselves to the others. So, one can say that; as social human beings we are born to be “present”, and this presence originates from our interactions both physically and mentally with the others.

There are borders that might affect this process such as the differences in time, in distance, in space, in place, and in medium of this communicative social world. Although we are bounded by these physical borders, shaping our presence, we try to get over these constraints and be free and communicate freely within this system. This is an open system that provides feedback and this property is one of the basic essentials of interactivity in new media. Visual new media brought with it an easier way of achieving mental presence via interaction. Lev Manovich talks about the effects of new media on the images and how they are perceived in his book *The Language of the New Media*.

New media change our concept of what an image is—because they turn a viewer into an active user. As a result, an illusionistic image is no longer something a subject simply looks at, comparing it with memories of represented reality to judge its reality effect. The new media image is something the user actively goes into, zooming in or clicking on individual parts with the assumption that they contain hyperlinks (Hansen: 2004, 10).

New media ease the process of overcoming these time and space differences in the imagescapes because they define image in relation to the spectators becoming active users through the active usage of the interface. This is one of the reasons why this study takes image into account as the unit of analysis. In other words, since this study deals with immersion and interactivity concepts in media, concerning image as the most basic unit common to all old and new media provides a common ground for discussion on the subject.

The eye leads us automatically to consider the subject which uses it in order to look at an image, and which we call, slightly extending the common sense usage of the term, the spectator (Aumont, 1997: 53).

The individuals' interactions with media, new media, computers and television are fundamentally natural and also fundamentally social. These interactions represent interactions in the real life; so as an automatic response we equate media with the real life (Reeves and Nass, 1996). With the help of the provided new media technologies, new media act as a better object to equate real life experiences and the mediated experiences. The word "better" is defined and used in terms of "more developed" and "improved" media which is capable of reaching people's minds. "In the past, technology had to worry about fitting people's bodies; today it must fit people's minds. This means

that, the old approaches will no longer work” (Norman, 1993: 9). As this statement puts forward, the mental interactivity is becoming more important than the former ones and new approaches towards this mental interactivity should be reproduced.

In terms of presence, we take the term as a signifier in the new media literature in relation to imagescapes; because images are visualizations of thinking, feeling, seeing, and knowing.

Because vision developed before verbal language, images are a natural part of our primal sense of being and represent the deepest recesses of ourselves. As the breath of dictionary definitions suggest as well, images are tied to the full range of human experience and expression, ranging from practical affordance to symbolic myth (Barry, 1997: 69).

The feeling of presence is closely related to the real experiences and actualizing the virtual in terms of these experiences. Henri Bergson’s theory of perception, as Mark Hansen identifies in his book *New Philosophy for New Media*, proposes to identify this transformation in presence. According to him, the image diminishes and the remainder detaches itself as the image, then the conversion from virtual to the actual takes place. That is because an image can be present without being perceived and without being represented (Hansen: 2004). Although Bergson emphasizes this diminishing act of the image in relation to the presence of the body and its act, in this study instead of body, human mind is taken as the reason behind this reduction.

Presence can also be regarded as embodiment as stated by Mark Hansen. “[I] am using the term embodiment in the sense it has been lent by the recent work in

neuroscience: as inseparable from the cognitive activity of the brain” (Hansen: 2004, 3). Both of these terms underlie the relation of the physical presence with the mental cognitive act of the mind. In this regard, used as a term to identify the mental activity of the brain, embodiment can be considered as presence of the mind.

When the human mind is embodied into something, i.e. immersed into an image, the mind explores what is inside and what is on the other side of the image. This exploration causes the human to experience the process. There is always a close relationship between presence and experience in the image world. “As a psychological state, presence gives us the illusion of nonmediation; even if we all know the experience is mediated” (Niklas, Timo and Jari, 2005). The relation between these two terms, presence and experience, comes from this statement: presence is an illusion of nonmediation and the experience of that presence is mediated and we know that the experience is not real. Even if we try to equate this unreal experience with the real life experience and try to perceive it as real with the help of nonmediation and immediacy, we are aware of the mediation and its reality. Here we introduce the notion of virtuality, because we automatically actualize something during this mental process. “What makes the images virtual is their being distant from the spectator” (Burnett, 2005: 72). When we know that the experience is not real, we put a psychological distance between us and the image. We struggle in the images’ virtual world in order to feel real via the mental presence. “We feel as if this distance should be, could be and must be overcome in order to possess images as if they are real” (Burnett, 2005: 72). This distance can be overcome with the help of experiencing it as real and new media, acting as an object to operate in this process, overcome this distance. Experiencing the image as real causes embodiment.

Images, representing a far older history than any other media object, exactly match with the human mind and provide this sense of presence. Starting from the figures on the walls of the caves, going through the figures encrypted on the walls of the pyramids in the ancient Egypt, and finally ending in the traditional painting and giving birth to the hypermediated images in digital and new media all give us the same sense about presence: we want to be there. “What {traditional} painting wanted, in wanting a connection with reality, was a sense of *presence* – not exactly a conviction of the world’s presence to us, but of our presence to it” (Bolter and Grusin, 2000: 234). All these engravements are there for the purpose of communicating with the outer world. What is inside of the mind is always tried to be represented in this regard. This amazement with the notion of presence and embodiment works as a medium through which people tell the others about themselves. This is the reason why the scope of this study is only visual new media leaving other media out. In this regard, image is totally isolated from other media objects and analyzed as the unit of analysis.

### **1.1 Problem Definition: Creating the Feeling of “Presence” via New Media**

Bolter and Grusin, in *Remediation*, summarize the drive for experiencing presence and the use of special effects in films and VR systems for this purpose:

This is life. It’s a piece of somebody’s life. Pure and uncut, straight from the cerebral cortex. You’re there. You’re doing it, seeing it, hearing it.....feeling it (Bolter and Grusin, 2000: 3).

They use the notion: “straight from the cerebral cortex” in order to emphasize immersion into the action. By experiencing the presence of “somebody’s life”, one feels as if s/he is experiencing those states in reality although they are virtual realities. This defines immersion and its relation to presence.

As stated in the Bolter and Grusin quotation, we want to learn the lives and the experiences of the “others”. We want to be in “their” presence, in “their” present time and in “their” present place. All the film effects used in the industry, all the composed music, all the three-dimensional displays used in the media (i.e. video games, computer programs, movies) and all the interfaces that are designed to strengthen this process allow us to open the door of immersion. Even though immersion is not a unique concept for new media, it is mostly identified with and interpreted under new media studies. The reason behind this identification originates from the technological ease that new media bring. It is believed that the objects and equipment used for interaction in new media is a better way for creating the sense of presence. Unlikely, in this thesis, it is not defended in that manner. It is discussed that, apart from the technological advantages and ease of usage, new media provide better grounds for immersion since they support the transparency and immediacy. They act in the process of overcoming the psychic distance via immersion. Lister defines “immersion” as follows:

By extension the term is used to describe the experience of the user of certain new media technologies in which the subject loses any sense of themselves as separate from the medium or its simulated world  
(Lister, Dovey, Seth, Grant and Kelly, 2003: Glossary)

With this definition of immersion as an extension in the new media literature, it can be said that immersion is actually a term which is very specific to the domain of new media. Immersion is specifically defined in relation to *the experience of the user of certain new media technologies*. It gains reputation with the increased usage of new media, since in new media people feel more “immersed” into the media object both mentally and physically. Roughly, immersion can be defined as being lost in something and as the feeling that the thing into which we are immersed is an extension of our body and brain. In this study, the effects and objects used to create the experience of presence in the immersion process are named as the term “interface”, or in short we can say that the immersive spaces encountered are named as “interface”. Because of its broad usage as a term in computer technology, the term “interface” is mainly used to define the computer interface and the human-computer interaction, however it is not only used as in the computer terminology in this thesis. In that terminology, interface is used to define the infrastructure through which people get in touch with the computer. For instance, the desktop metaphor, as an interface in the computer programs eases the interactivity by creating a familiar sense on presence. In order to prevent possible misunderstandings and misrepresentations of this word specific to this study, it had to be clarified in this way.

What is it in the new media that people want to interact with? There are many speculations about an exact answer to this question, thus this study tries to find an answer by dividing the question into two main categories. Is it the immersive design of the interface that encourages to take an action or is it the experience of “presence” (i.e. the experience of the narrative structure in the image, the experience of the immersion

into the image, the experience of the sensations in the process) promised by the medium that derives the audience to interact and become the user? By formulating and asking these two questions, this study does not formulate a binary opposition between these two categories; instead it tries to combine various different ideas and models about the interactivity concept in new media studies.

The research question starts with the issue of presence in imagescapes. Imagescapes, as defined by Ron Burnett, combine the metaphorical use of image, sound and text to “provide a way of mapping the relationships among a variety of different processes” (Burnett, 2005: 40). In order to feel the presence one has to visualize the ideas, knowledge, thoughts, places, etc. How new media achieve this and how they help us to engage in interaction is the major reason and derive behind this study.

## **1.2. New Media**

As we are faced with time and place differences, and as we are introduced to the obstacles of overcoming these differences easily, we try to formulate a solution to be present against these boundaries. For instance, almost all images do contain a time. They try to communicate that time to the spectator if the apparatus to present them is capable of doing so (Aumont, 1997). Here, Jacques Aumont talks about the implicit time of the image in his book, *The Image*. “The spectator superimposes his or her own temporality on to it, adding something to the image” (Aumont, 1997: 121). The time of the image and the spectator time are analyzed under the forth chapter in the study. In other words, they are analyzed as obstacles against interactivity. Time and space are two related

concepts in this thesis because temporality caused by the differences in these two time frames can cause the spectator to be distant from the image. One of the fundamental elements in perception is time and the other is space. "As we move out to space, we also move backward or forward in time. Physical movement across space can generate similar temporal illusions" (Tuan, 1977: 125). As individuals feel disturbed by these differences in time and space, they try to overcome and eliminate the reasons for this disturbance. What they are actually trying to omit is the act of mediation there; because when they feel that the experience of presence that they have felt in those images are mediated, they feel these differences again. What is proposed to be a better and easier way of doing this is new media. By nature, we do try to equate what is real and what is virtual. New media, not only with their developed technologies, but also with their capabilities to represent the real better, help us and act as an object to get immersed into those images depicted. For instance the new media art mainly focuses on the feedback part of the interaction process. When images change according to the movement of the spectator, the spectator real-izes what is virtual. By touching only a button, or by just moving the hand from left to right, s/he changes the whole flow of the narrative in the imagscape along with the images. The installations work with this philosophy in mind as well as the computer games.

The presence notion does not typically match with the physical presence; but it signifies the mental presence with a limited physical presence. The image and the spectator, as in a communication system in new media, do not have to share a common physical space, conversely, a common mental space is enough to engage in such an interaction; because there is a desire for immediate access to meaning and this in turn

privileges presence over absence. However, what brings those images and those spectators closer without the physical obstacles and time conflicts are new media.

By saying that there has to be a common mental ground to experience the presence, we are basing our discussions on the “desire to prioritize presence over absence” concept. As it is stated in the introduction, this desire underlies our efforts to get in touch with media and interact with it. One does not have to be at a certain place to be at another space within the same time frame. This study explores how people try to overcome the obstacles and how they make use of and manipulate new media in order to possess a “presence” in this system. When we talk about using new media as an object, we have to deal with experience and interactivity in the light of finding an answer to the former two questions. Even if, the answer seems to lie in the issue of presence at first glance, one cannot conclude on such an idea without taking into consideration the objects to overcome the former conflicts.

As the notion of presence is discussed as a mental process, we have to take into account the process of mediation. In terms of operation, there is no difference in this process neither in the “new”, nor in the “old” media. However, with the increased chances of easing this process and forming a better mental visualization with new media we do mainly discuss new media and how they affect this mediation process mentally to create the feeling of “presence”. The only difference between old and new media is not the high-tech objects that are available to achieve presence as discussed as the process. There is also a fundamental difference between the two in terms of quality while affording to create the feeling of presence. The technical capabilities of new media such

as Virtual Reality systems and digital platforms, compared to other old media, surely form a better common ground for interaction in terms of quality. The effects, the feedbacks, the outcomes, and the manipulation in new media as a whole increase the quality of interaction and thus lead to a better operation for immersion.

There is not only one reason that encourages the spectator to immerse into new media. The act of mediation itself is an interactive process. In order to understand this argument, firstly one needs to define the problem of interactivity and interaction concerning new media.

What is new media then? For the new media scholar Lev Manovich, new media is not only newer forms of the older media but also numerically represented, modular, automated, variable, and trans-coded forms of media (Manovich, 1995). This statement identifies new media with digital media; however new media does not have to be only digital media and immersion is not a unique concept for new media. “We should also keep in mind that immersion is not solely a function of letting go. It is a sign of the struggle between human expectations and viewing” (Burnett, 2007: 73). It is only possible to talk about immersion to take place under the circumstances of participation; i.e. the spectator or the user has to agree to participate and has to be able to participate. Interactivity is followed after immersion, concerning mental interaction. A spectator might engage in a physical interaction and then start feeling immersed into the medium and this process is followed by mental interaction. In other words, there is difference in the sequence among these two types of interaction in new media.

There is random access in new media according to Manovich's new media definition, so we can say that one can decide on the place and time of the interaction. Random access gives the new media user the ability to reach out the medium whenever wanted. As a comparison with the older forms of media, in new media the user can interact with the media object; however in the old media the order of representation is fixed. In new media one has the freedom to go forward and backward in time and to immerse into the medium whenever wanted. "We assume that all human sensory and mental capabilities and the ability to abstract, conceive and implement things are, and have been, involved in the development of human ability to use media" (<http://post.thing.net/node/1289>). By means of using human sensory and mental capabilities, we start to engage more with new media, and try to identify ourselves with the represented images during immersion in and interaction with new media.

Again, "what is it in the 'new media' that people want to interact with?" The question remains the same although the definitions change. There is all the time a drive or an influence on us to get in touch with it. And we do question that derive for presence here and discuss how new media enhance this derive.

### **1.3 The Aim of the Study**

The visual interface design allows interaction with the help of its transparent nature. This transparency in interaction stipulates immersion and transforms the act of mediation into immediacy. The term interface is generally defined as a materially constructed space that holds two faces, one towards the spectator and one towards the

media object. It is a surface common to two areas, or an area common to two or more systems, processes (Oxford English dictionary). When a physically constructed area is defined, i.e. the interface, it has to go unnoticed by the spectator for immersion to take place. The interactive experiences that these interfaces provide and support change over time, meaning that they are different for different people. This difference originates from different personal characteristics.

This thesis aims to interpret interface not only as stated in computer science terminology, but also as an ideological system that goes unnoticed and is unconsciously perceived; meaning that as a system that creates immediacy and hides the act of mediation in the new media terminology. This interpretation opens up and builds the main discussion of the thesis, the apparatus and the role of this apparatus in immersion and interaction. Interaction concept is analyzed in terms of both new and classical “old” media; because this thesis argues that “interactivity” needs to be analyzed, explored and studied in relation to the interface design and immersion.

The basis for this thesis is constructed according to the discussions stated above. This study figures out the changes and improvements in the triad of image – new media – spectator interaction using the ideological apparatus model as a guide.

#### **1.4 The Structure of the Thesis**

The study starts by defining the concepts of new media and interactivity in new media. The notion of immersion in new media is highly important as an action that leads

the user through mental interaction. So, immersion and immersive spaces are discussed in the context of new media and interactivity. Apart from Lev Manovich's new media definitions, the new media in relation to the former two concepts are redefined and analyzed. As a counter argument to Manovich's exclusion of parts of new media apart from the screen interface, the thesis locates new media as a more general and broader terminology and includes and defines the new media in relation to the interface as an ideological immersive model. Here, the study introduces an ideological model called "the Apparatus" to define this new interface and interactivity relationship and how new media positively acts as an object to improve and strengthen this process.

The latter chapters of the thesis, Chapter 2 and Chapter 3, redefine and make a review of the term "interactivity". The basic differentiations between physical and mental interaction are discussed along with the principles of interactivity. Interactive interface design is also discussed under the second chapter as a former term to talk about the Apparatus Model in the latter chapters.

The following chapters introduce and discuss the model of the apparatus. It is roughly defined in terms of transparency, immediacy and hypermediacy in new media. The relation of the apparatus to interactivity and immersion is supported by the arguments of experience. Experience is discussed as both a passive and an active term under the light of the transformation of the spectator into an active participant and user.

The term "experience" is generally associated with physical interaction; however in this study, in the third chapter, experience is both defined under the terms "active"

and “passive” experience and interactivity is redefined under “physical” and “mental” interaction according to the relation of activity and passivity.

In the forth chapter, the constraints for interaction are discussed. They are grouped under three titles; time, space and external distractions along with the technological complexity. The differences between the image time and spectator time and these differences’ relation to interactivity time are analyzed. Also the differences among spaces are defined and discussed in terms of obstacles. The external factors that might also affect the interaction during immersion are analyzed in relation to the technologies used by new media.

## CHAPTER 2

### INTERACTIVITY

#### 2.1 Interactivity: The Review

Interactivity can be described as many things. Catchwords abound: Engaging, Immersive, Participatory, Responsive, and Reactive. Interactivity is a continuing increase in participation. It's bidirectional communication conduit. It's a response to a response (Meadows, 2003: 37).

Since interactivity is defined as bidirectional, interaction is a kind of action that occurs as two or more objects have an effect upon one another. There has to be two or more parties in the process. The idea of a two-way effect is essential in the concept of interaction, as opposed to a one-way causal effect. This causal effect is discussed as immersion leads to mental interaction.

Concerning interaction as a two way communication conduit, there are principles for this communication. We can count basic three principles of interactivity as stated according to Mark Stephen Meadows in his book *Pause and Effect: The Art of Interactive Narrative* such as;

1. Input/Output
2. Inside/Outside
3. Open/Closed (Meadows: 2003, 38)

The first principle stated by Meadows is the “Input/Output”. He argues that, in interactivity, what is used as input should bring an outcome; output. In turn, the final output should create an input. So, we can say that interactivity is an iterative process; or a loop and a cycle that consists of input and output. This principle covers the definition of interactivity as it is basically defined as a two-way-communication.

The second principle argues that the input should bring out more insights and new inputs. “As this happens, the line between stimulus and response thins. And as the line between stimulus and response thins the depth of immersion increases. This is why you can’t do something else if you’re immersed. This is why, if it’s really interactive, it’s consuming” (Meadows, 2003: 39). There should be a dialogue between the internal and the external. The boundary between the two should start to disappear as the dialogue unfolds. This can also be defined as “inside the skull” and “outside the skull” according to Meadows. What is out there is outside the skull and it is dominated by the visual perspective. What is inside is the cognitive and perceptual perspective of the spectator. There is a close relationship between the two because what is perceived to be outside is at the same time inside the mental process, thus at the process of experience and as a result; mental interaction.

There is feeling, meaning and experience “inside” the skull, and look, design and symbol “outside” the skull (Meadows, 2003). So, while experience is discussed in the latter chapters, in addition to physical experiences, mental and cognitive experiences are also covered as part of this inside the skull context. Even if feeling, meaning and experience are classified as “inside” and look, design and symbol as “outside”, these classifications may change. For instance, experience under “inside the skull” is related to the mental experience and cognitive perspective, however the bodily experience (or the physical experience) is related to the dimensional perspective and it should be classified under “outside the skull”. Similarly, look, design and symbol are “outside”; because after they are perceived and interpreted by the spectator, they start occupying a space in our mental presence and cognitive perspective.

Although this thesis agrees with Meadows’ arguments about the principles of interactivity in general, this specific principle of “inside/outside” is depicted a little differently in this study. Even if we can agree that the experience can be inside the skull, i.e. the mental experience, there is not a specific boundary among what is inside and what is outside. So, experience is also classified under the “outside” component. In this study, the major argument is about interactivity and the drive behind it; i.e. the experience of feeling present. It can be argued that inside the skull, there is the mental experience of presence. What is outside the skull cannot be bounded to the physical constraints according to this argument, because the immediacy gives the freedom to the human mind to think and imagine about everything possible when the space and time obstacles are overcome.

The third principle of interactivity states that the system in which the spectator or the user interacts should get better in time as the interactivity proceeds. The interactants should add value to the system in which they act. The “ideological” system of the “apparatus”, which will be discussed in the latter chapters, therefore is a design that renews itself in time with the feedback on the interaction. The apparatus is considered as an open system in which there is cyclical feedback from within and from the outside. Since the human being is also an open system that can give something else back after the interaction process, the medium in which the two operate should also be open in order for the immersion to take place successfully. Renewing this open system and adjusting it according to changes increase the intensity and level of interaction. Mark Hansen considers human beings as interactive media in *Bodies in Code: Interfaces with Digital Media*. In other words, human beings are open interactive systems that also act as media and in order for the interaction to take place; immersive open systems should be formed in order to carry those properties of interaction.

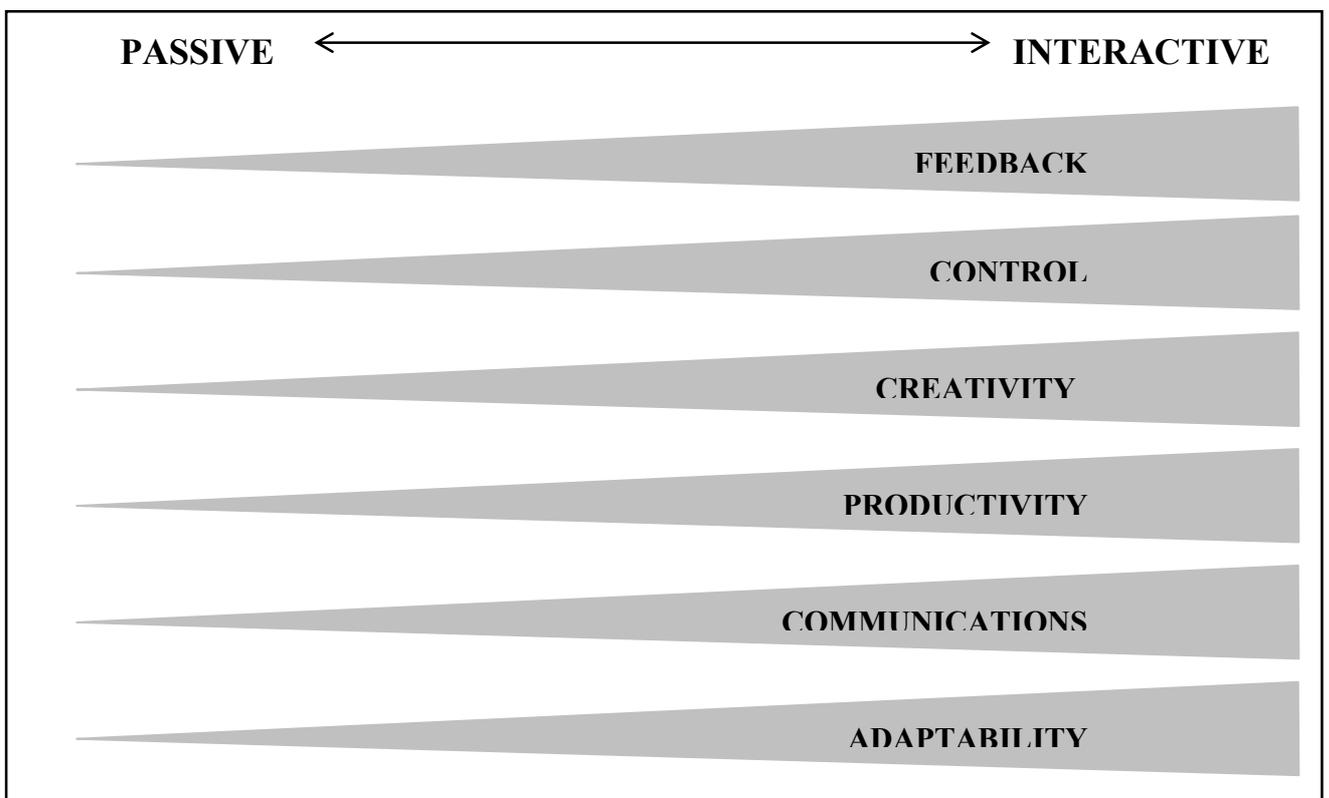
Some classical theories also underlie the principles of interactivity. For instance, in the “Constructivist Analytical Approach”, the spectator is believed to be the creator of the image because of these basic principles of interactivity (Aumont, 1997). What constructs the image, in turn constructs the spectator and this turns out to be interaction. In new media this theory supports interactivity and the principles of input/output and inside/outside. “The role of the spectator is an extremely active one: the visual construction of recognition, the activation of the schemata of recall, and the combination of both in order to construct a coherent vision of the overall image” (Aumont, 1997: 63). This view is also called the Constructivist Analytical Approach and not only new media

scholars but also others from different areas formed similar approaches to image and spectator interaction. The cognitive aspect of image formation in human mind is mainly and originally a constructivist process. While the human mind is constructing upon the stimuli received from the external environment, there appears to be mental interaction with the image.

Jacques Aumont, in his book *The Image*, talks about interactivity and the steps of interactivity in visual arts as part of the act of the image on the spectator (Aumont, 1997). Although he is not a new media scholar, his ideas seem to be similar to the new media interactivity issues. In other words, we can derive the conclusion that there is not a specific distinction between any kind of interaction; and interactivity is not only unique for new media images or new media objects. It is an old term that is relocating itself in different time frames. Only the context of the term has changed in time. What new media brought with them are easier and better ways of experiencing these interactions. As they are better sensed, they are easier and better measured by the scholars and this eases the process of improvements and developments of new media technology. For instance, the drive for the virtual reality head sets originate from those experiences and from the results of such interactions.

In this study, although the main focus is on new media (visual new media), some other types of media such as old media, visual arts and other types of interaction such as physical interaction , integrated interaction that compete within the full spectrum of human experience are included and are briefly analyzed.

Interactivity can be defined as a spectrum in Nathan Shedroff's words; a spectrum from passive to interactive and this spectrum has 6 main components and the interactive design creates experience by these 6 components: Feedback, Control, Creativity / Co – Creativity, Productivity, Communications, and Adaptivity. In the following chart, we can see how these components change as the level of activity increases and leads to interaction.



**Figure 1**

**Nathan Shedroff's Spectrum Model for Interactivity**  
(Source: <http://www.nathan.com/thoughts/interfaces.html>)

The chart is taken as a guide in order to analyze the relationship of passivity/activity to interaction and the components of interaction. As the levels of feedback, control, creativity, productivity, communications and adaptability increase, the

spectrum moves towards interactivity. So, here we do make a distinction between passivity and activity. (Shedroff, 1996)

As the spectator, in our model, gives out and receives more feedback from the system, controls and is at the same time controlled more by the design, creates more insights, produces more during the exchange, communicates more with the contents within the provided context and adapts more to the system and shapes the system according to this adaptation, he/she can become an active spectator; the participator. This is called the interactant; meaning that acting upon, and is acted upon at the same time.

When we talk about interactivity, it can be said that it is one of the best ways to communicate because it provides “conversation” metaphorically between the medium and the user. Its being a two—or even more—ways of communication brings quality and ease in terms of conversation. This conversation originates from the components stated above. “It embodies the notion of a decentered self. It facilitates bricolage and simulation” (Arata, 2007). The decentered self is the interactant as immersed into the system, he/she changes the system and the system changes him/her accordingly at the same time. This characteristic of interactivity is named as a step in the interactivity process as “the reciprocal change” in *Pause and Effect: The Art of Interactive Narrative* written by Mark Stephen Meadows.

Interactivity is, like plot, based on fascination and captivation. It is how people get pulled into a process that continues to draw them deeper and deeper. Interactivity can be broken down into four steps which, if the interactivity design is done well, generates an increased interest in further interactivity (Meadows, 2003: 44).

There are three steps in the interaction process and they don't have to be sequential from one to three although they seem to be so. This means that in some instances they may follow an order and in some they may seem to happen all at the same time. Let's first discuss these steps and then analyze how this can take place.

In the first step named "observation", the user makes an overall assessment of the system whether it is a video game, an interactive narrative or an interactive installation. The user builds up familiarity with the system that is used and this develops the motivation for the user to act. In the second step, the user explores the system along with the capabilities that the system allows. This process is totally unconscious. The user unintentionally discovers the capabilities because the design leads the user among several paths and prevents him/her to enter and chose several others. This can also be called the "intentional guidance of the interactive interface design". As the user learns the capabilities, he/she tries to modify the system. But this modification is done purposefully, or in other terms, consciously. It has two sides; both the designer and the user intentionally tries to modify the system. The user tries to change the system as he/she discovers the rule of the system and the designer tries to modify the system as the user experiences the processes and changes it according to the feedback gained from the users' experiences. These first two steps can also take place at the same time; while the user is making an overall assessment of the system, s/he can discover about the boundaries of the system unconsciously. The former term "sequential" is used in this regard.

The success of the interface design lies in this step mostly as well as in the other steps of interactivity. In the last step; the “reciprocal change”, the system tries to change the user. If the system is interactive and if it can successfully engage the user into the system, then the user’s actions start to change. As the user, now becomes the interactant and as he/she starts to change the system; he/she is continuously changed by the system too. The interactive nature of the media system creates this loop and they start to feed each other. This last step can also take place at the same time or within the same time frame of the former step. While the user is learning about the boundaries and the limitations of the system, they are tried to be changed accordingly, or even tried to be overcome. In this context, the media, or the mediation system is taken as an open system that allows the user to participate in the formulation. That is also why new media acts as better objects in contrast to other media in terms of immersion and feeling of presence along with interaction. It is possible in an open system to take and give back feedback and this enriches the process of immersion; thus the process of interaction.

For instance, while playing a video game the user starts to get familiar with the system first: Which buttons do take which action and how to continue correctly in the flow of the game. Then s/he starts to learn the capabilities of the “integrated self” that the system allows: How can the character in the game move and what are the limitations. In the modification, the user purposefully takes action to see the end results and this leads to reciprocal change.

Technology can not be followed because it improves itself very fast; and it is hard to catch the latest changes. While someone is introduced to a new system of

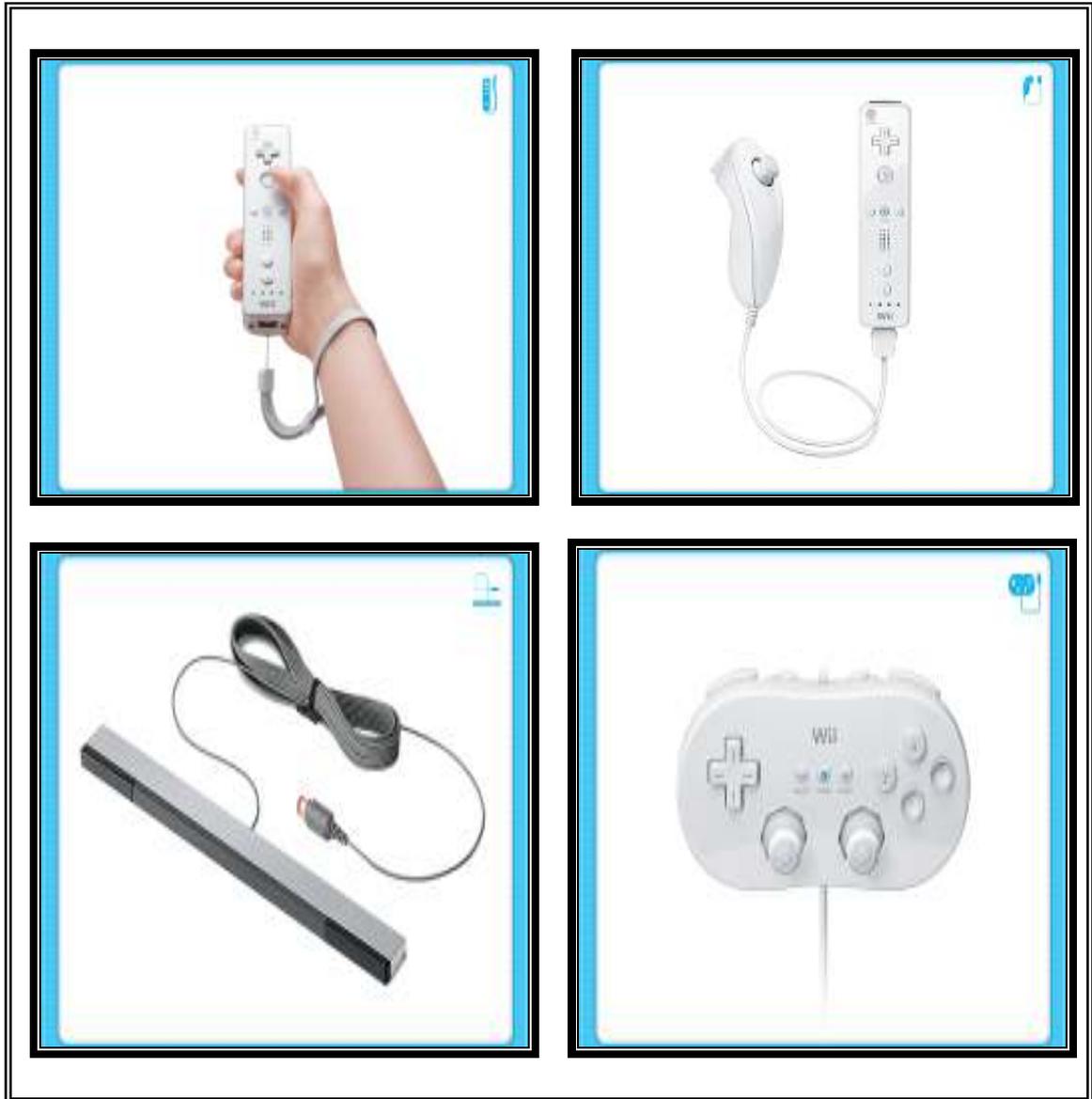
interactivity, other developed ones are on their way to the market with different characteristics. Consider that at the time of this study the latest interactive version of video games is Nintendo WII. When the product was first launched it made a huge rumor and it is now believed to be one of the best interactive products of its time.

Last year, in a keynote at the Tokyo Game Show, the president of Nintendo stunned the gaming world by revealing a bold new controller design for the next Nintendo console. Promotional images showed a white console of Apple-like design next to four devices that appeared to have more in common with TV remote controls than any kind of game pad or joystick. (Bronstring, 2006)



**Figure 2**

**Nintendo WII game console and the remote player**  
(Source: <http://www.nintendowii.com>)



**Figure 3**

**Nintendo Wii Joysticks and the Movement sensor**

(Source: <http://www.nintendowii.com>)

The question brought with this new product is “How does the Nintendo Wii differ from the other game consoles?” The Wii’s movement sensor controllers, one placed in the hand of the user and one placed on the console detects the user’s movements. Then it translates these actions into the game actions. By this way, the user

who plays tennis on the Wii can use the remote control as a tennis racket and can even feel the vibration when s/he hits the ball. Well, this is not a brand-new technology that is unique to Nintendo Wii, but the feeling of presence is sensed more in this game console when it is compared to those that use former similar technologies.

The spatial tracking of the Wii controller lets you interact with the game world in completely new ways, making exploration more exciting than it's ever been. At the same time, ease of use is maintained for those not accustomed to conventional console controls. (Bronstring, 2006)



**Figure 4**

**Nintendo Wii player's moves and the reflection of those moves in the game onto the screen**  
(Source: <http://www.nintendowii.com>)

Nintendo Wii deploys technology as a means to trigger the virtual. It separates the medium from materiality and merges the user with the game; or in other words, immerses the user during interaction. The reciprocal change and the modification steps

can be clearly observed while playing a game on Nintendo Wii; or even while watching someone playing the game. Although the user has the capability to move without any limitation as there are no wires or network cables; there is the constraint of the screen and the space between the screen and the player. Even if there are no limits to your moves, you cannot move endlessly; at the end you have to stop and control yourself before hitting the screen. As a result, the game and the system including the interface design, puts a limit to the physical interaction. You have to move within the limitations of the frame and you can only move within the limitations of the place that you are playing the game. These physical limitations remind the interactant that the experience is virtual however it is very much the same with a real one.

Nintendo Wii transforms the passive spectator into an active interactant. It is not only the remote control sensors and the design of the game console; but also its integrating the physical presence with the mental presence. At first glance, Nintendo Wii looks like any other game console that can enhance the physical interaction as a difference. However, its only difference is not that simple. The perceived physical presence let by the product is so strong that mentally the player overcome the psychic distance. The physical distance stays the same just as in any other game console; but the integrated presence (the merge of the physical and the mental presence) allows the interactant to immerse more into the game and thus, the physical distance is metaphorically shortened.

What about the mental and the sensual interaction? Can these interactive systems also put a limit to different levels of mental and sensual interaction? According to the

discussion stated above, one cannot say that they can put a limit to the mental interaction; because the characters in the game move according to your body movements and this creates a better sense of presence “inside” of the game. The moves and the acts support your perspective and perceive your body as a virtual body in the game. Interaction in the game is not one-way; meaning that not only the human being perceives interaction, but also the systems recognizes the interactant as a part of it. In this sense, it is a multiway conversation considering the response of the game, the narrative and the context. As the perspective of the user changes, the interaction changes direction. So, whether these sorts of products can put a limitation to the mental interaction lies in the answer of “perspective”.

### **2.1.1 Interaction and Immersion in New Media**

Immersion: While normally referring to being under the surface of, or in a body of liquid, in the present context it refers to the experience of being inside the world of a constructed image. The image is not before the viewer on a surface from whose distance they can measure their own position in the physical space. Lister, et.al. 2003: Glossary

Immersion, as described in this context, is related to subjectivity and to the sense of losing oneself in a certain defined medium. In the context of cinematic spectatorship, Christian Metz in his book *Psychoanalysis and Cinema: The Imaginary Signifier* discusses that the spectator’s own body is not reflected on the screen and there is actually no need for such a reflection because s/he already knows that s/he is present as a subject. Since the spectator is not present on the screen with an image of her/his body, s/he starts to identify her/himself with the things presented on the screen as part of the

narcissistic identification. (as cited in Aumont, 1997) This identification takes place because the drive for being present on the screen among the characters is mentally very strong. What it has been called as the temporary suspension of the ego functions in the cinematic spectatorship also apply to immersion in new media. “Christian Metz developed the most systematic and direct approach yet to the question of the subjective effects of the cinematic apparatus: why do we want to go to the cinema in the first place, regardless of which film is playing?” (Aumont, 1997: 141). Aumont’s reading of Metz and application of his ideas to new media are just the same as our research question. While Metz is asking about the reason behind the drive to go to the cinema no matter the content, we are asking about the reason behind the drive to interact with the new media. In both cases, the answer takes us to ‘presence’. Just because of the self-identification, one can easily lose the sense of objectivity. For instance in a video game, although the spectator is not presented bodily, s/he finds a character in the game with which to identify and the spectator then chooses to play with that character all through the game.

“Old media like the social community of our state, national press and television, focus on the collective experience of one reality” (Reality Lab, 2007). On the contrary, new media provides different subjective realities for everyone; because it allows people more to engage in interaction and experience and expand the notion of reality by their own subjective perception, and own subjective imagination.

The experience of these processes leads the spectator to get in touch with the image and this is defined as being in the world of the constructed image. Ron Burnett argues that there are always these sorts of experiences with the images, however with

immersion, those images should not be considered as the same. Images start to change and be things that are not only abstractions from the real life but also they become realities of the life as interaction takes place. This is what Burnett names as a *level* in the imagescapes. “Immersion does not privilege images more than before; rather, it simply takes images at another level” (Burnett, 2005: 77). The spaces that the images occupy are totally virtual spaces in terms of their immersive content and therefore they are considered to be abstract spaces, not real. However their spaces are abstract, with the help of immersion images are taken at another level and it is the level of reality, meaning that they are perceived as real objects in space and in time. Thus, this is something related to our argument that they help us feel present in those image spaces and image times. In other words, tearing apart their abstractions with the help of immersion, images start to represent what is real and how we can all perceive this reality by means of presence.

In this context, Ron Burnett defines immersion as just another level of empathy, another way of discovering more entry points into the meaning of visually driven, sensuous experiences. (Burnett, 2005) He also regards human imagination as a crucial arbiter in the immersion process. So, the human imagination which is described as the drive and the desire to be present in this context is one of the major components of the images. Apart from the common view that images construct spectators and spectators construct images, they both affect and encourage immersion. For an image to construct its spectator, the image must address the spectator so that s/he can find some elements to identify with. This, in turn, increases the probability of immersion.

There is a continuous discussion going on in this study about immersion and interactivity relationship. Does immersion leads to interaction; or does interaction by nature leads to immersion? Based on the previous discussion in the chapter on Christian Metz and on the cinematic spectatorship and the narcissistic identification in the new media context one can say that immersion leads to interaction. Whenever the spectator starts to identify her/himself with the image and as the image starts constructing the spectator, immersion starts immediately. Then the spectator starts acting as if s/he is playing a part in the image and this starts interaction. That is one of the reasons why we are made to choose the characters in a video game prior to starting playing the game . This plays a crucial role in our identification with the content and the context in the game. First, we find someone or something that we are identified with and then that character immediately starts acting as if it is real as we do perceive. As the level of identification increases, the level of immersion and the pleasure to be present increases. Thus, the interaction is strengthened via this process of identification.

An immersive medium, such as the CAVE installations can derive interactivity and an interactive interface design can derive immersion. CAVEs are interactive art works. In a CAVE installation, there are rooms (or room-like close areas) and different image projectors. On each wall of the room, different images are projected and with the help of the computer systems, these images sometimes respond to the actions of the spectators. For instance, when one enters room, the image might change immediately. The spectators don't use any helmets, gloves or any other technical equipment to interact with the images.

“CAVEs provide immersants with a sensory experience that is not the same as, but is akin to, what used to happen in theaters with Cinerama screens in the 1960s.” (Burnett, 2005: 107) In the traditional Cinerama, the films were shot by multiple cameras and shown using multiple projectors on wide screens. “Shots using the point of view of riders on various vehicles provided spectators with a physically unsettling and quite realistic experience of traveling through space. It was common for viewers to get vertigo and feel nauseous.” (Burnett, 2005: 110) The physical effects on the spectators show the realness of the visual experience and this is caused by the immersion created by using those points of views and cameras. In CAVEs, the spectators or the immersants are free to move. The new media technology used in CAVEs take the traditional Cinerama concept one step further. The computers exercise control over the environment and the spectators are free to respond to the changes in the environment. The immersive success of the CAVEs originate from the mechanisms that isolate people from anything else but the images on the wide screens. “Images change in response to what immersants do, and this sensation of interaction makes it appear as if the images were malleable and responsive.” (Burnett, 2005: 110)



**Figure 5**

**A CAVE installation**

(Source: <http://www.newsense-intermedium.com>)

When we talk about immersive environments and immersive media, CAVEs are good examples of such. The CAVEs are fully-immersive environments. Being surrounded by huge screen images and the responses of those images according to the spectators' movements enrich immersion. If the dictionary definition of the term "immersion" is used, it can be said that 'water', for instance, is an immersive medium since it penetrates and surrounds the user (Oxford Dictionary). Also music is an immersive medium because it penetrates the listener. Walkmans, Discmans, and MP3 players are examples of an embodied process. In other words, music is placed in the ear and the "effects" of stereophonic sounds are experienced in partial isolation of the surrounding environment. This process embodies the listener in her/his mental presence such as the image embodies the spectator. The power of this technology is its ability to immerse listeners in a total experience (Burnett, 2005). This is a good example of what we want to suggest by saying that new media are only objects with their creative user-

interface technologies that help the spectator to immerse and to experience the feeling of presence. The success of these technologies lies in surrounding the spectator and in turning the user into something with which the spectator wants to identify. As the user manipulates and responds the images, s/he feels the presence and the experience because of the identification.

Where does the interaction begin in these two medium; water and music? When one dives into water, he/she must be immersed in the water physically. The interaction, then, starts at the time of diving into the water. What if we use the term not physically, but metaphorically? In this respect, the term would suggest that the person who is immersed into something loses the locus of control psychologically. He/she forgets about his/her actual state and floats in the desired state, which is the desire for “presence”.

Interactivity is only possible when images are the raw material used by participants to change if not transform the purpose of their viewing experiences. Interactive practices in the digital age are generally described as a function of what can be done to images. Interaction is also talked about as if it were a new process. Rather, interaction is fundamental to the creation of audiences. (Burnett, 2005: 91).

In the same context, interactivity is defined as the ability of the user to directly manipulate and affect her experience of new media (Artmuseum.net).

In new media terminology, immersion is defined as the experience of entering into the simulation or suggestion of a three-dimensional environment (Artmuseum.net). So, it is very much related with the experience of entering into a space. Although, in *Multimedia: From Wagner to Virtual Reality*, this space concept is heavily defined in terms of three-dimensional space. In this study the space concept is not only defined as three-dimensional space. The space that a certain image occupies is also considered as such.

Examples can be given from different image objects mediated differently, concerning that immersion is not unique to new media. Immersion does occur when the viewer is physically surrounded by the image space, meaning that the image space penetrates the spectator. Examples of such can be given by a series of fresco paintings covering all walls of an interior space or more prominently in the panorama.

Especially where the panorama in nineteenth century is depicting real events, such as a battle scene, the visitor feels immersed into the totality of an image that produces an illusionist visual world that is perceived as absolute image. What happens when illusionist representation turns immersive is that the conscious perception of the media level and the actual materiality fades in favor of the strong bodily experience to be almost physically connected to and inside the artificial visual space (Grau, 2002).

The computer-based interactive works, also in similar ways, challenge this media border and increase the spectators' impression in the way to directly communicate with what he/she has created with the provided software. In photography for instance, the photograph becomes the image in a frame and a spectator carefully examining the image can get immersed into the image psychologically and start interacting with it by

remembering some memories and recalling the past or making forecasts about the future. This act of “reverie” can be regarded as an example of how immersion can lead the spectator to interact. As discussed, interaction is not only physical in this context and the reverie can be counted as a mental interaction.

The tools and artifacts that are designed to offer maximum interaction possibilities offer us a path to interaction; but it is also the human motivation to interact with things and attach meanings to them. Not alone the human motivation leads to interaction, because one can attempt to interact with any artifact or tool, but the success of that interaction depends on the design of the immersive nature of the artifact. While we are using them, we forget about them (about their physical presence) and how to use them. So, they contain immersion in the spectators’ mental presences. For this study, it is argued that visual media are external artifacts unlike the sound media which literally penetrate the human body.

We cannot use media whilst always being aware of using them. Awareness and intensive use of a medium are incompatible: Imagine yourself sitting in front of your computer and taking notes:

I am moving the mouse-cursor to the “File” menu and choose “New...” to open an empty document. A document is an object used for editing and saving data. In this case it is a “Word-Document” invented by “Microsoft” a multinational monopolist. “MS-Word” has shaped our concept of word-processing. Maybe word-processing could look completely different but how would we know. But damn it, what was I going to do?...

Forget it! Tools and Media start working when we forget about using them. Game designers call it immersion: Immersion means interaction without being aware of the medium or tool. The more effective the immersion the more authentic and more real the experience.

Realitylab website

According to Lev Manovich, new media are interactive in nature. Generally, in his studies, it is argued that immersion creates interaction in new media. Even if interactivity is one of the basic principles of new media; it should not be associated only with new media and it would be a mistake to define interactivity only in relation to new media (Manovich, 1995). “All classical and even more so modern art is ‘interactive’ in a number of ways. Ellipses in literary narration, missing details of objects in visual art, and other representational ‘shortcuts’ require the user to fill in missing information” (Manovich, 1995: 56). So the concept of interactivity is not new, or is not unique to new media and goes back to a very long time since the visual art and representation was formed. It would be a total mistake to take the term and fully adjust it to new media because all media are interactive in some sense; however the degree and the nature of interaction changes from one object to another. When we use the word “interaction”, we should interpret it not only in terms of physical interaction, but also in terms of psychological interaction.

As new technologies for communication and mediation are developing with a very rapid movement, one has to make this clear distinction between the experiences obtained from these interactions.

A virtual world that incorporates new techniques of new media has a fluid ontology that is affected by the actions of the user. As the user

navigates through space, the objects switch back and forth between pale blueprints and fully fleshed out illusions. The immobility of a subject guarantees a complete illusion; the slightest movement destroys it (Manovich, 1995: 206).

Here, Manovich defines new media in relation with the new media user. The immersive nature of the new media technologies can be derived from his naming new media as a fluid ontology which is all the time in relation with the user. The space that is defined as fluid denotes this immersive nature of new media.

Another point about new media is made by J. D. Bolter and R. Grusin in their book; *Remediation*. They argue that new media are multiplied media forms, meaning that all media forms use each other. This leads to hypermediacy, discussed in the following chapters. This notion of new media can be interpreted as hypermedia; because the use of multiple media makes any media object hypermediated. This is defined by Manovich as another popular structure of new media that can also be seen as a particular case of the general principle of variability (Manovich, 1995). Here, one can think of hypermedia as a conjuncture of both the nature and the outcome of mediation. Thus, hypermedia combines the user and the individual media elements (images, texts, etc.) erasing the traces of their individual identities. This combination erases the traces of individuality and opens the door of immersion. The spectator and the image becomes a whole one identity and the spectator is surrounded by the space of the image during immersion. What is also discussed in *Remediation* is the relation of hypermediated technologies and the immersive nature of these media. “Our culture wants both to multiply its media and to erase all traces of mediation; ideally, it wants to erase its media in the very act of multiplying them” (Bolter and Grusin, 2000: 5). Here, Bolter and

Grusin argue about this critical paradoxical relation of human with mediation. It is paradoxical because human beings want both to erase the traces of mediation and to multiply it at the same time. In other words, it is some sort of a dilemma between mediation and nonmediation, or between immediacy and hypermediacy.

There are ideological connotations of the “new”. The “new” in new media refers to “the most recent” and in an ideological sense, this notion of newness means here; “more developed and improved to fit people’s minds” according to this study. It is better in terms of immersion and interaction because it provides an environment that can fully satisfy what is in the spectator’s mind. It improves the process of interaction and immersion and thus, it eases the mental formation of presence. New media are qualitatively different from the preceding ones in terms of the above mentioned capabilities.

The term *new media* recognizes the changes in technological, ideological and experiential developments. Although as a term it is very general and abstract, it includes and excludes at the same time the limitations of human creativity in communication. With the help of this term as a means of “latest ways of communication”, classical notion of communication changes since the use and the reception of image and communication media are reconstructed. This change, in turn, changes the way people experience the world and experience themselves. There are shifts in both the social and the personal experiences of place, time and space.

### **2.1.2 Interactive Interface Design**

When the media elements retain their individual identities, the act of mediation is definitely felt by the user. By using the variability and modularity principles of new media, hypermediation helps creating the interaction. Interaction gives the user of the new media the opportunity to manipulate and intervene in the new media. Not only hypermediacy leads to interactivity; but also immediacy supports and enriches interactivity. Thus, according to the new media scholars who argue that hypermediacy leads to remediation, new media try to be (im)mediate although they are hypermediated. “Hypermediacy is a style of visual representation whose goal is to remind the viewer of the medium. It is one of the two strategies of remediation; the other is (transparent) immediacy” (Bolter and Grusin, 2000: Glossary). When the transparent media does not satisfy the spectator, s/he wants to feel hypermediacy in order to value the experiences as more realistic. Unlike Bolter and Grusin, we do not make a clear distinction between hypermediacy and immediacy; we even claim that they are like two nodes in a loop and they feed each other. That’s why it is argued that new media are hypermediated although they are tried to be formulated as immediate in terms of the experience of presence and the feeling of presence. Even if they are hypermediated, they give the sense of presence immediately with the help of their interactive nature.

Surely the question of how they achieve these two mechanisms at the same time comes into mind. Although these two terms are not binary, they seem to be opposite at first glance; but a media object can be both immediate and hypermediate at the same time. This, in part, depends on the user getting in touch with the media; because it is the

question of how the user manages these two mechanisms at the same time. The answer is clear; through manipulating the new media object, which can also be named as “interactivity”.

When I use the word ‘interactive’, I do not mean what has become the standard industry definition of dynamic media or the ability to make choices when using computer programs. To me, interactivity is much richer and includes the abilities to create, share, and communicate rather than merely watch (Shedroff, 1996).

As Nathan Shedroff redefines interactivity in terms of broader concepts of sharing, creating and communicating; we can take into account manipulation of the media object as another term in this definition in relation to new media interactivity. While we are interacting, we share ideas and thoughts with the image; we create and derive new meanings and interpretations of “the represented”; we communicate with it and therefore we manipulate and play with it.

Interactive: Technically the ability for the user to intervene in computing processes and see the effects of intervention in real time (Lister, et.al., 2003: Glossary).

When we come to the question of interactivity in new media, on the one hand Mark Pesce; one of the early pioneers in VR systems argues that: “interactivity will not be achieved through effects but as a result of experiences attached to stories” (Burnett, 2005: 101). As he suggests, interactivity is very much dependent on the human experience and its perception. As another; but not an opposing argument, media scholars such as Ron Burnett argue that: “technology enables humans to model their environments in new ways and create the foundations for different ways of thinking”

(Burnett, 2005: 102). The technological devices help the user to get in touch and interact with the media. For instance, the computer, the headsets, the installations... They all help the user to interact. However, the technology itself cannot promise this. In Mark Pesce's argument, it can be derived that the technology used to create immersive effects can not promise interaction alone. The experience of the media object enriches and enables this immersive environment. Ron Burnett does not create an opposing idea to Pesce's argument; instead he justifies it by mentioning the users' initiative to model this immersive environment. So, according to these two different views along with the discussions above in the former paragraphs, it can be said that what derives people to get in touch with these immersive environments is not composed of one variable; it is a combination of multiple variables.

Interactivity has also an ideological dimension. In short; "to declare a system interactive is to endorse it with a magic power." (Lister, et.al., 2003: 20) In this respect, interactivity is a "value-added" characteristic of the new media as part of the ideological context. In the comparison of old media and new media, new media overcomes the passivity and offers a more active consumption of the "new". What is meant by the "active consumption"? In the book *New Media: A Critical Introduction*, the authors summarize the active consumption in terms of interactivity as follows: "The term stands for a more powerful sense of user engagement with media texts, a more independent relation to sources of knowledge, individualized media use, and greater user choice" (Lister, et.al., 2003: 20).

When we move from seeking to gain access to data and information to navigating representations of space or simulated 3D worlds we move into 'immersive' interaction. (Lister, et.al., 2003: 21).

How can the user experience the interaction? There has to be a successful interface design which will grab the user into the context and support his immersion. What can be understood from a successful interface design that fully derives the spectator into the image and stimulates him to interact with it? Manovich's saying; "... if in 'meatspace' we have to work to remember, in cyberspace we have to work to forget" (Manovich, 1995: 63), can give us a hint about the answer. A *successful interface design* makes people forget about the real boundaries of the physical environment and experience the reality of the fall-down of these boundaries. "Content and interface merge into one identity, and no longer can be taken apart" (Manovich, 1995: 67). Here, again he states that the immersive nature of new media merges the content with the interface and thus the design becomes a successful one. The term "immediacy" can be introduced here along with the interfaceless interface design. "What designers often say about an 'interfaceless' interface, in which there will be no recognizable electronic tools – no buttons, windows, scroll bars, or even icons as such. Instead the user will move through the space interacting with the objects "naturally", as she does in the physical world" (Bolter and Grusin, 2000: 23).

## CHAPTER 3

### IMMERSIVE APPARATUS AND INTERACTIVE NEW MEDIA

#### 3.1 The Model of “APPARATUS”

The term “apparatus” was firstly introduced in 1975 by Jean-Louis Baudry. Baudry’s argument on the “apparatus” is in the context of cinematic spectatorship. He discusses the impression of reality and its roots in cinema as it is believed that the apparatus regulates the relationship between the spectator and the work. The spectator only sees the reality on the screen that is projected by the apparatus. He argues that the cinematographic apparatus creates an artificially regressive state; it takes the spectator to a more primitive form or state (i.e. it creates nostalgia). With this in mind, he argues that the apparatus gives the effect of the real far more powerful than mere perception alone can create. The perception of the real turns out to be a virtual hallucination in Baudry’s works. (Aumont, 1997) “He calls this regressive state ‘an enveloping relation to reality’ (an absence of body boundaries, which seems to melt into the diegetic world, into the image)” (Aumont, 1997: 140).

In this study, the term “apparatus” is discussed in a different context than cinematography, concerning new media. It is interpreted as a model or an ideology behind a successful interface design that enables a passive spectator to become an active

participant and interact with the content, media, or with anything provided by this model. In this regard, it resembles Baudry's arguments on the cinematic apparatus since in both contexts, apparatus regulates the spectator's relation to the work and the psychic space between the image and the spectator. Here, apparatus is used as an ideological model (methodology) to analyze the interactions of spectators with images.

The word "apparatus" is generally used to define a set of instruments or other mechanical appliances put together for a purpose. It has also the usage to define bodily organs by which the natural processes are carried on. To discuss the "apparatus" as an ideological model is to expand and enrich the ontological dictionary definition of it, and to come up with a new term. As another definition of the term; "The situational factors which determine the spectator's relation to the image will be called the apparatus" (Aumont, 1997: 2). It is not discussed as a materialistic entity. All the social, organizational structures, methods and technology that is used to produce images are taken apart from the word's original meaning. The word apparatus, as a model, applies to the analysis of all images; i.e. pictorial, artistic and filmic.

Although apparatus is discussed and mentioned as a new term (in terms of its usage) as covered in this thesis, it does not lose its primary meanings. The model apparatus is a set of interaction processes consisting of physical structures; i.e. the interface and it becomes a "bodily organ" metaphorically to carry the interaction process on. So, it covers the image – interface – spectator triad and it acts as a mechanism that defines and coordinates the relations between the three. The model apparatus succeeds in doing it by means of regulating the psychic space between the spectator and the image

(Aumont, 1997). In more classical terms, the ability of the apparatus to regulate the psychic distance was called the impression of reality. Here, although we are not dealing with the classical painting, as a parallel construction among images, spectatorship and interactivity, one can adopt the ideology of realism in painting to new media art and new media image in general. And this can be achieved via designing interfaces that can give more realistic impressions in terms of interactivity.

The ideological part of this model originates from the belief that “television, radio, and the internet are always on” (Burnett, 2007: 5). Although you may switch these media objects off, they continue showing effects in our daily lives. Even though this statement regards the apparatus only as a set of mechanical objects; it supports the view that the process of interaction and its effects does not disappear when they are physically – bounded. So, there is the ideology that no matter how apparatus is defined, it is always considered as a living mechanism that possesses the act of mediation, immersion, and interaction in itself. The model creates a contextual space common both to the spectator and to the image and it does not entirely depend on the technology but on the relationships created via usage (Burnett, 2007).

### **3.1.1 Transparency in the Interface**

Designing a typical interactive interface is not purely composed of systems of interactivity. Interface design is a combination of several disciplines.

To me, interface design is the combination of three disciplines: information design, interaction design, and sensorial design. It is not possible to separate this relationship nor ignore their concerns. The goal of all these processes is clear communication in appropriate forms. This is done by creating compelling experiences and understanding the component of experience.

Nathan Shedroff

Transparency concept in the interface design can be analyzed under the disciplines of interaction and sensorial design. Interaction design allows the designer to compare and thus understand the different kinds of experiences. Transparency in the interaction design real-izes the user experience in the interface design and a more realistic outcome is achieved as an experience. In terms of sensorial design discipline, transparency can be regarded as an extension of the interactant. The design that combines all sorts of senses in its body successively can be one step closer to a transparent interface design; because apart from physical interaction, they also consider mental and sensual interaction in new media.

A physical object that is transparent allows the light to pass through; so that the other side can be clearly seen. In some sense, it acts as if it is invisible, omitted and does not interfere with the object seen and with the spectator. When we adapt and use this transparency concept in new media, we face with immediacy. Since the time of the object seen through a transparent surface and the time of the spectator is the same, the act is immediate by nature, and there is no delay in the process. So, in new media, transparency leads the act to immediacy.

In this study, immediacy is used as a time related concept, not as an opposition to mediation. With the help of a transparent system; the mediation process can be immediate and the differences in time and in place disappear. What is a transparent interface? It is the “interface that erases itself so that the user is no longer aware of confronting a medium; but instead stands in an immediate relationship to the contents of that medium” (Bolter and Grusin, 2000: 24). Interaction occurs not only physically between the user and the interface; but also mentally between the user and the content. The purpose is to get closer to the content so that the interaction becomes natural; not arbitrary. Making the presupposition that action through immersion leads to interaction, there is interaction in this specific case. Interactivity is achieved through immersion. Although immersion is more felt in the physical interaction; for instance the immersion into and through water or space, one should never forget about the mental component of being immersed into something. Opposing to Mark Hansen’s statement, “I felt that the degree of physical involvement was the measure of immersion” (Hansen, 2006: 4), and one cannot decide on the level of immersion via physical measurements (i.e. physical interaction and physical experience) because it is not only a physical conjuncture. This statement omits the mental interaction and it is one of the basic grounds for this study. The feeling of presence experience is strongly felt in situations where the user totally forgets about the act of mediation. When this happens, the user interacts mentally with the image. That is why we have talked about perspective, different visual effects, and perspectives. They all support and enrich the mental interaction; because the degree of reality increases as the user perceives the image as real.

“The image has innumerable potential manifestations, some of which are perceived through the senses, and others that are purely intellectual, as when we use metaphors of vision in abstract thought” (Aumont, 1997: 1). Our concern here is to take the prevalent type of images; such as paintings, drawings, engravings, television, films, or in short; the flat visual images as the image. In terms of visual intelligence, “neurologically all images are by nature gestalts, made up of visual experience processed modularly and then coordinated through perceptual process” (Barry, 1997: 69). As “image” is taken as the unit of analysis in this study, it is considered as the place of exchange during interaction. The place of exchange is regarded as the creative engagement with the content. “This begins the moment that images enter into relationships with viewers” (Burnett, 2007: 32). The former paragraphs discussed the time and place of interaction and the latter will talk about how it happens.

At first glance, images seem to be virtual because they are distant from the spectator. As the spectator gets immersed into the image, the image seems to be real; because immersion shortens the gap between the two. When the interface succeeds in achieving the transparency, the human mind creates the perceptual reality. Although there is surely a difference between the optical reality and the perceptual reality, the transparent interface takes the two reality concepts to the same cognitive level. The perceptual reality is the human experience of seeing (Burnett, 2007). So, experiencing the image is closely related to the feeling of being immersed and getting in action with the image.

Here, experience can be defined as the ability to learn from an undergone interaction with the image. The effects of the immersive interface design encourages the spectator to interact with the image. They should collapse the boundaries down between different levels of imagination and reality. An interface which is immersive and interactive therefore should succeed in breaking down those boundaries and lowering the tension among different perceptual activities. “Viewers, in a metaphorical sense, move into images and outside of them” (Burnett, 2007: 48). This specific interface design should allow the spectator to be embodied and disembodied at the same time into the cognitive world of the image. This is not an easy thing to achieve, thus a specific interface design should be able to separate the manner in which images operate and in which they are experienced (Burnett, 2007).

It is argued that, we build up new distances while trying to experience the overcome distance with the images represented in the medium as a content, because; “seeing has the effect of putting a distance between the self and the object. What we see is always ‘out there’. Things too close to us can be handled, smelled, and tasted, but they cannot be seen—at least not clearly. Thinking creates distance” (Tuan, 1977: 146). This distance that is created encourages oneself to engage in an interaction with the other. One wants to interact with the “remediated self” as an outcome as Bolter and Grusin have argued in *Remediation*.

This experience creates and, in some sense, supports the reality which is totally virtual but at the same time, experienced as if it is the actual. While talking about interactivity, an assumption can be made about the user who has to overcome a

perceived distance (psychic space), or the so-called virtual space (plastic space) in order to interact with the media. How can the ideological system of interface design help the spectator here? Jacques Aumont summarizes the function of the apparatus in immersion as follows: “The first function of the apparatus is to offer concrete solutions to the management of this unnatural contact between the spectator’s space and the space of the image, which we call plastic space” (Aumont, 1997: 99). So the apparatus dissolves the tension between the spectators’ space and the plastic space. As this tension is dissolved, the spectator becomes a part of a virtual world that is pre-constructed and pre-formulated by the designer. Since the spectator knows that the world that is entered is a virtually constructed space; s/he has the prejudice about its reality and this doubt creates a distance within the spectator’s own actual world; which can be called the “psychic space”.

The psychic space is the perceived distance between the image and the spectator. It is not an actual space because it is totally defined in cognitive terms and in perceptual sense. “Psychic space is the typical imaginary distance that regulates the relation between, on the one hand, objects of representation and, on the other, the relation between the object of representation and the spectator” (Aumont, 1997: 77).

When the spectator starts to feel immersed into an image, it can be said that s/he is overcoming the perceived distance and getting closer to interact with the image. As it is not a physical distance, it cannot be measured, however it can be perceived mentally as it denotes a virtually constructed reality. In overcoming that distance, the user has to experience the constructed reality in the visual space. As the experience is perceived as

real, the virtual space is dissolved, because the actual state is achieved which is the interaction. “Here virtual reality is not built on a virtual reality support, so each work must produce the virtual; and because they can only do so through the interaction they trigger, we can rightly conclude that human experience actualizes the virtual potential of these images” (Hansen, 2006: 19).

### **3.1.2 Immediacy-Hypermediacy**

Filmmakers routinely spend tens of millions of dollars to film on location or to recreate period costumes and places in order to make their viewers feel as if they were ‘really’ there.... In all these cases, the logic of immediacy dictates that the medium itself should disappear and leave us in the presence of the thing represented. (Bolter and Grusin, 2000: 6)

In *Remediation*, Bolter and Grusin define immediacy as the disappearance of the medium. They also relate immediacy to the feeling of presence by denoting “...feel as if really there...” In this study, this argument is taken as a presupposition and the latter discussions are made accordingly.

There is a continuous flow between the immediacy and hypermediacy in new media. They are not two terms opposing to each other, instead they are two terms feeding each other and giving birth to each other.

Mediation, because of its nature, cannot be immediate, but what is argued by saying “immediate”; is not “(im)mediate”. (Im)mediate and immediate are two different notations of the same word, however the primer means “can not be mediated”, the latter

means “mediated at a very short period of time”. “The immediate” is named just as the perception via interaction should be immediate. The first concept argues immediacy, while the second argues hypermediacy.

Epistemologically immediacy means transparency; the absence of mediation or representation. On the contrary to transparency; here hypermediacy means opacity. It supports the idea that knowledge comes to us through mediation. The spectator realizes the self-presence and learns through the act of mediation. In hypermediacy, the spectator expresses the self as a multiplicity of the act of representation. There are heterogeneous spaces, meaning that the spectator is made aware of the distances and gaps within those spaces so that the act of representation is made clear and the spectator is made conscious of this act. In hypermediacy, one does feel the act of mediation with the felt presence of the devices and therefore decide that it is over and above the actual reality. The logic behind hypermediacy is multiplying the signs of mediation. By this way, it “reproduces the rich sensorium of human experience” (Bolter and Grusin, 2000: 34). However this reminder exhausts the spectator in time and this feeling turns out to be a need or an urge towards immediacy. As mentioned in the previous paragraph, hypermediacy derives the desire of the spectator towards immediacy. This creates an endless loop within the two concepts.

Psychologically, immediacy means naming the spectator’s feelings as if the medium is disappearing. The psychological meaning turns out to be more authentic, and therefore more realistic since the spectator feels as if the medium is disappearing.

Hypermediacy, on the contrary, means that the experience of the medium itself is the experience of the real, or the experience of the represented.

Immediacy is directly linked to the interface design of the medium and hypermediacy is discussed as the technical interface design. On the one hand the successful interface design creates immersion and thus the immediacy, and on the other hand, the interface which is considered fully as a technical and physical mechanism creates hypermediacy as the layers appear to mediate the content; or in other words, multiply the act of mediation.

In the argument of interaction, immediacy has to be formed in order for the spectator to be the user and immerse in the image. When the virtual experience created by the content approaches the actual reality, it means that immediacy is achieved, and the interface is omitted as the act of mediation is not recognized. However, as a second argument, but not an opposing one, the technological devices used to connect the human activity and thought with the medium should be present, and this presence should be definitely felt by the user. It should be present; because the presence of the device supports the action through overcoming the psychic distance and the virtual space.

The interaction that is discussed here is not only physical interaction, meaning that tactile interaction, but also mental interaction concerning the visual space. Why the visual space? Not only because, “The organization of human space is uniquely dependent on sight. Other senses expand and enrich visual space” (Tuan, 1977: 16). as the Cartesian thought enfigures but also because the interactivity is about breaking down

the boundaries and the distance between the medium and the spectator. “Of all our senses, sight is the most intellectual, the closest to thought” (Aumont, 1997: 65). While breaking down those boundaries, it also changes and re-interprets the common belief that touch is prioritized over sight. In new media interaction, one no longer sees the gaze as an extension of the fingers, but as a supplement to the physical environment (Aumont, 1997). In terms of physical experience, “of course, there is a difference between the touch of water and a picture of water” (Burnett, 2007: 75); but without one of the two, the complete sense of reality is incomplete. So, the two should be in harmony with each other.

When the images are assumed as the place of exchange, then it can be said that the interaction starts in the space of the image, which can also be defined as the plastic space aiming to establish a relation to the world. The images’ ability and nature in establishing a relationship with the spectator helps to define immersion and interactivity in visual communication. Vision is firstly a spatial sense (Aumont,1997). It defines a particular and a secular space in which the spectator interacts. Visual space differs strikingly from other tactile and auditory spaces, thus this difference enables the power of new media in interactivity; because of its dominance in visual communication.

Vision and to see is to be outside and within the body at the same time. Thus, If the image can be considered as a place, and keeping in mind that place can be defined as a pause in movement, then the image is also a pause in movement in the interaction process. This means that the mediation is transparent at the time of the beginning of the

interaction; because there is a movement, and this movement indicates immersion. This, as a result can constitute immediacy in the mediation process (Tuan, 1977).

### **3.1.3 The Notion of “Perspective”**

Interactivity in its most general form is a mode of creation, a way of being, a perspective (Arata, 2007).

The perspective concept has a very broad and important usage in new media studies especially in interactivity issues; because the basic and main concern of these studies is the user and the user’s point of view in relation to the image. The usage and the correct application of perspective knowledge in media allows the designers to manipulate the system easily; because one of the major indicators of human presence is perspective. The perspective that the spectator sustains makes him/her capable of placing the self to the center of the visible world and this leads to subjectivity in the space forming the presence of the spectator physically and mentally. “To see an object is either to have it on the fringe of the visual field and be able to concentrate on it, or else respond to this summons by actually concentrating upon it. When I do concentrate my eyes on it, I become anchored in it, but this coming to rest of the gaze is merely a modality of its movement” (Merleau- Ponty, 1992: 67). The visual perspective helps the spectator to immerse into the image. What Merleau-Ponty calls “anchoring” is merely an understanding of the immersion. When the spectator immerses, s/he locates her/himself in that space and experiences the presence.

There are two kinds of perspective in design; the cognitive (or emotional) perspective and the visual (or dimensional) perspective (Meadows, 2003). In order to define the two types of perspective, we can talk about movies and how these two perspectives are applied in movies. The camera angles used in a movie to depict which characters are important, strong or dominating also underlie the basics of dimensional perspective. For instance, a lower dimensional perspective probably make the spectator feel less important than the character in the movie. When the dimensional perspective starts to make the spectator think about these specific aspects of the character depicted, the emotional perspective starts to identify the spectator with the image. Both of these perspectives underlie the above arguments' basis; because we have discussed that interaction has the two sides; physical and mental, experience has two sides; active and passive. And the notion of perspective is closely related to these two concepts.

A first quality of an interactive perspective is that it opens multiple points of view through the blurring of boundaries of realities and objects once conveniently fixed. This shifts the emphasis away from the object and tilts it more toward the subject who perceives. Viewers interact with objects in a way that celebrates subjectivity and diversity (Arata, 2007).

The vanishing point in visual new media identifies where the space of the spectator is and at that point, the spectator's perspective ends as common in all vanishing points. "The vanishing point is a point in linear perspective at which all lines that are parallel in an environment collapse and at which all elements in that space cease to exist" (Meadows, 2003: 6). In this thesis, the vanishing point is defined as the point at which the spectator overcomes the psychic space between the apparatus and himself. At

that point, there are no longer differences in space and place, there are no differences in time, and there is only the immersed spectator. This point gives the spectator the sense of being there physically. The spectator, in this regard, has a subjectively centered concept of the surrounding space (Aumont, 1997). Being subjectively centered is actually related to the spectator's immersion and the degree to which s/he experiences this presence. Immersion is argued to lead to the decentering of the subject in the previous chapters. There is a difference between that decentering and this centering concept here. When the spectator is fully immersed into the image and into the act of mediation, there is decentralization. The concepts of time and space start to collapse and the spectator starts equating the real to the mediated. After that time the centering of the subject starts; because the spectator tries to locate her/himself in that mediation and interaction process.

Placing the spectator's visual perspective inside the apparatus helps the spectator both to immerse and to change the cognitive perspective. The location, or in other words, the place of the spectator forms a boundary against interaction. The visual perspective helps the spectator to immerse via emotional perspective. In addition, one of the ways to overcome the extractions and distortions caused by the location of the spectator is the system's ability to grab the spectators' visual perspective.

When a viewer examines a linear-perspective painting, there remains a critical visual distance; the window frame separates the subject from the objects of representation. There are two ways to reduce distance and so to heighten the sense of immediacy: either the viewer can pass through the window into the represented world, or the objects of representation can come up to or even through the window and surround the viewer (Bolter and Grusin, 2000: 235).

This thesis presupposes that the change in the visual perspective of the spectator immerses the spectator into the new media object, image and helps her/him to interact. As the visual perspective changes simultaneously in time, the chances of immersion for the spectator increases. There is a double perceptual reality in images. We can perceive the images as objects that can be seen, moved and touched; and we can also perceive them as fragments of a three-dimensional space. The double reality of images in perception originates also from the spectator's perspective and immersive nature of the interface design. As images are in the domain of the symbolic, they convey points of mediation between the spectator and reality (Aumont, 1997).

Putting the spectator in his own visual perspective and letting him manipulate and modify the visual aspects of the system increases the participation in the work on both cognitive and emotional level. Meadows summarizes this statement as “outside the skull, inside the skull” as discussed in the previous review part.

Meadows argues in his book *Pause in Effect: The Art of Interactive Narrative* that the Perspectivist Approach, discussed above is a four-fold perspective. “The point of view of both the subject matter and the visitor; represented dimensionally and emotionally” (Meadows, 2003: 12). He calls the visual perspective; the dimensional perspective; and the cognitive perspective, the emotional perspective. According to him, the linear perspective and the vanishing point put the spectator and the image at par, on the same level of representation; therefore this feeds the immersion and interaction in new media terms. He summarizes the aim of the immersive interface design as follows:

It was the beginning of a compression of information – a form of interface design that allowed the most important information to be presented at the most appropriate time from the appropriate angle. That's what everyone still wants: to be able to see it all, from our single point of view, at just the right time, and know that we 'get the picture' (Meadows, 2003: 14).

By this saying, Meadows wants to emphasize that apart from the other variables that act upon the process of interaction, catching the right visual angle from a single point of view is one of the major keys in the success of the interface design. This is totally related to the perspective of the user and how the designer creates the interface to allow the user modify his/her own perspective and visual angle.

The perspective of the model of the apparatus should be reflecting both the spectator's and the images' perspectives. This is what is summarized as the immediacy and transparency in the interface. In the new media terms we call them remediation, and in the classical art, the artists such as Giotto also believed that the visual and the cognitive perspectives were informing each other and were linked to each other. Today, this point of view reflects the idea that the boundary between the physical and the mental world collapses down as the spectator and the image present themselves on the same plane, and this is discussed as immediacy. The total ideological system in which this argument finds existence is the apparatus as stated in the previous chapters. Giotto's idea of perspective clearly states that a person should be at a certain place at a certain time frame in order to interact with the image. In addition to this classical perspectivist approach, we can also talk about first person, second person and third person perspectives in new media; as well as in other forms of media.

The first person perspective includes the “I” in the interaction. The second and third person perspectives include the “you” and the “he/she” consequently. While talking about both physical and mental/sensual interaction, these different perspectives have different effects and outcomes on the process. In the first person perspective, the interactant feels more immersed into the system. In terms of physical interaction, this extreme feeling may sometimes encourage and sometimes discourage the person to interact. Psychologically, people do not want to bear the side effects or the negative outcomes. So, when something unpleasant happens to the first person point of view, we want to automatically change the perspective and switch to second or third person perspectives. This change shows how mentally one can interact with a visual. So, one can give an answer to the question of limitation in the mental interaction: yes, there is a limitation but this limit lies in the hands of the spectator. If the spectator wants to interact more with the images and want to immerse more into the system, he/she can chose to be the first person in the process.

So, there is a difference between the physical and mental interaction in terms of limitations. The physical interaction can be more effected by the outside boundaries and limitations. Overcoming those limits and constraints is easier in mental interaction.

While watching a film in a movie theater, apart from the different camera angles and different effects used in the film, the dark atmosphere encourages and helps the spectator to interact with the film. The spectator immerses into the film, and this dark atmosphere eases this process. So, apart from the success of the interface or the

immersive nature of the medium, the natural effects of the cinematic medium can also act on immersion and image-spectator relationship. They act as parts of the medium. The spectator may scream or jump when there is a terrific scene, or cry when there is a romantic scene. He/she disregards the screen and the other people; so the physical obstacles to become a character in the movie is omitted mentally. There is surely presence in the film, and this leads to immersion. There is a physical obstacle and the screen interface by itself alone cannot overcome the distance between the film and the spectator. So, in terms of physical interaction, the screen interface cannot help much to the spectator to get immersed into the images; however with the help of the atmosphere, in terms of mental interaction, the spectator can easily interact with the images and get immersed.

### **3.2 Experience**

The information age affects the experience of our environment in several ways... Anyhow, new technologies challenge our perception and experience of space and places. Virtual places have a long history and the successive development of electronic media since the 1840s. Every time the virtual dimensions have been extended through new possibilities, history has seen the typical examples shift of any genuine importance (Callanan, 2004: 3).

One can identify the word “experience” as a composition of feelings and thoughts. “Human feeling is not a succession of discreet sensations; rather memory and anticipation are able to wield sensory impacts into a shifting stream of experience so that we may speak of a life of feelings as we do of a life of thought” (Callanan, 2).

For Nathan Shedroff, experience is the place in which knowledge can grow and interaction is the means by which valuable experiences can be created. He mentions interaction while defining experience and this clearly states that they are inseparable. For him, “design creates experience”. In his statements he defines design as the interaction design.

When we are talking about images in the new media and interactive experiences created via the apparatus model in the interface design, we take into account two different experiences: the former is about understanding the picture, and the latter accompanying it. Considering the visual experience, because of the visual system there is not one to one correspondence when an observer is exposed to an image. The information that is visualized is processed at each stage. Vision is purely an active and an interpretative process. As the spectator engages in visual perception and cognition, the psychological and the intellectual processes involved in experiencing the world outside, and experiencing the world inside do change. Burnett states: “The images I ‘watched’ felt as close to me as the people with whom I shared the experience, which was as much of a physical and emotional experience as other more ‘direct’ and less mediated instances during the very same day” (Burnett, 1995: 5). As one starts to perceive the image and the cognitive process starts to work to understand the image, the act of watching starts to create an experience. No matter how an event or a visual is mediated, when one watches it, he/she feels it. So, vision takes use from an isolated place and puts us into a place where one can experience and thus, interact with the events and objects. Vision and visual perception real-izes the world in front of us.

“Human experience is by nature abstract and multi-sensory; sound, sight, smell, touch and balance, each of which provides a complementary but diverse influence on the communication of a holistic perception” (Paine, 2000). The visual experience is not monolithic; thus it has multiple outcomes and multiple uses in different areas. For instance, in VR programs, “the person feels present in the fabricated computerized surround and negotiates it in the same way he/she would move through the real world” (Barry, 1997: 58). These simulations provide real experiences and the interactants feel real outcomes of these experiences. Also Ron Burnett argues and supports the same idea in his book; *Cultures of Vision* as follows: “It is in the notion of virtuality that there has been a radical shift not only to a new use of images but to a new level of experience and analysis where “the self mutates into a classless cyborg, half-flesh, half-metal, where living means quick circulation through the technical capillaries of the mediascape” (Burnett, 1995: 220).

Another example can be given from video games and how the visual graphics reconstructs the images and reconfigures them as realities. “The player is not only immersed in but is also responsible for the onscreen events. If the game ends it is because of the player’s failure, not the deeply established reassurance of narrative closure” (Lister, et.al., 2003: 275). This is felt more in the visual field of the game. The images represented by the author and the images interpreted by the player do match when there is interaction through immersion. These senses are all related to experiences, even if they are not physically real.

Considering that experience in general is a learning process, it is argued that we can learn better, more effectively and more enjoyably by the reasoning through experience. This experiential learning mode involves fun and enjoyment but not the acquisition of long-term analytical skills. This is known as experiential cognition. In the experiential cognition, “the patterns of information are perceived and assimilated and the appropriate responses generated without apparent effort or delay” (Norman, 1993: 23). Once we are expert, the responses that are required come automatically and effortlessly. There is unconscious awareness in this experiential process and this thought is automatic, reactive and driven by the information patterns. In an immersive environment while a spectator is interacting, s/he should use both experiential cognition and reflective cognition.

In a video game for instance, if there is a simple reasoning behind an action and you first learn it through some directions, when the game starts you can interact reflexively. How shall the user act reflectively? The user should gather important information about the strategic nodes of the game and build upon that information, iterate between different information and take more time to act. “Reflective thought is the critical component of modern civilization: It is where new ideas come from” (Norman, 1993: 27). How people better learn to immerse and to interact is another question. The spectator may immerse even though s/he is unaware of the fact. Doing and feeling immersed into something does not necessarily mean that the spectator has learned how to do it.

Most of the visual experiences we undergo are practical, and therefore they are more realistic. At some point, people start to fail to distinguish what is real and what is virtual or artificial. The immersive interactive interface gives the authentic and thus realistic experience to the spectator. When the design of the interface fails to give that realistic authentic impression on the interactant, the process of experiencing the represented reality is interrupted. Thus, the interaction is degraded and will not give the spectator the pleasure of experiencing the presence.

There is a close relationship between the spectator and the interactant; and this closeness originates from the invisible boundary between the two. Via experience, the spectator can become the interactant and when the interactant feels disturbed by the realness of the experience, he/she can become the spectator again; or totally omit the interaction process and close the windows. So, in some sense, it can be said that some part of visualization and immersion process is unconscious; but some part of interaction process is conscious and the user has the power over the action both physically and mentally.

“While the observer is only the onlooker, this ‘looking’ is a kind of movement. It embodies ‘active observation’. From a certain moment when the observer becomes immersed in the action, his ‘passive onlooking’ is replaced by ‘active observation’ ” (Hansen,2006: 19). The spectator realizes that s/he creates the image by creating and assigning meaning to the experience. The observer starts identifying the self with the situation in the interaction process. This phrase clearly explains the process and the

transformation of action and passivity in experience. Thus, it can be concluded from this statement that there is always a cycle between the active and the passive experience.

Robert Hopkins divides the former into components and calls the first and most important component; the “seeing-in”. The latter are not discussed in this study, because what brings the outcome of image – spectator interaction is mainly the vision.

Hopkins remarks: “.... Seeing-in is an experience with a distinctive phenomenology. By this I mean that there is something it is like to have that experience, and that what it is like to have it differs from what it is like to have other experiences” (Hopkins, 1998: 15). On the one hand, seeing an object in a picture differs from seeing other objects. This difference comes from its phenomenology; from failing to see the object as in real, but also from the experience of visualizing that object. As the spectator starts to identify himself/herself with the situation, the passive observation turns into an active consumption. When this happens, “imaging takes its proper place within the organism’s primordial operation as a general condition of phenomenalization” (Hansen, 2006: 19). In this difference, this thesis places the terms passive and active experiences, and thus the flow of mind and body among these two. “I mean a body submitted to and constituted by an unavoidable and empowering technical deterritorialization – a body whose embodiment is realized, and can only be realized, in conjunction with techniques” (Hansen, 2006: 20).

When we talk about active and passive experiences, we are taking into account the activity dimension in our lives. On the one pole of this dimension there is active

experience and on the other pole, there is passive experience. “Active experience is mainly correlated with ‘physical’ presence, and passive experience mainly with ‘mental’ presence” (Nakatsu, Vauterberg and Vorderer, “A New Framework for Entertainment Computing: From Passive to Active Experience”: 8). It is argued that the new interactive immersive interface design model in new media combines these two forms of presences along with the active and passive experiences in them and this combination in turn creates the “integrated presence”, which is mainly the most important characteristics of the “interactant” in this thesis.

### **3.2.1 Experience as a Notion of Passivity**

Experience is a cover – all term for the various modes through which a person knows and constructs a reality (Tuan, 1977: 8).

As Yi-Fu Tuan argues in the above statement, experience is not only one singular notion. It covers all the terms through which one constructs a reality. In the context of new media, experience is so closely related to this definition of Tuan’s. In an immersive medium, while the interactant is actively participating to the formation of meaning in an image, s/he takes a part in the construction of reality with experiencing the presence.

Can there be a passive experience? Or, is the experience by nature an active concept? Neither the former, nor the latter questions have an exact and finite answer. Experience is both active and passive. The word “experience” has the connotation of “passivity”. Since in this study, we are analyzing experience in the context of new media image interaction, one can say that a passive experience is only observing or looking at

an image and just feeling the presence of the interface or the medium. As the spectator starts omitting the plastic space of the image and the physical space of the interface, he/she outranges the passivity and enters into an active world. This is closely related to space, place and therefore to presence, thus the immersive nature of the new media.

Brenda Laurel takes two examples as unit of analysis and discusses “games” and “theater” in terms of first-person and third-person participation modes. When the spectator watches an image as a third-person, the engagement is totally passive. “A first-person experience occurs when the person is directly and emotionally involved in the activities” (Norman, 1993: 33). The first-person participation, i.e. the interaction is possible when the spectator subjectively projects the self into the image.

So, one cannot classify experience as only active or as only passive, because of the integrated nature of the interaction. When we talk about experience, we have to deal both with active and passive experience at the same time. Watching a movie may at first seem to be a passive experience when the bodily interaction is taken as the main focus. On the other hand, it is an active experience because it covers cognitive perspective as well and the mental interaction also takes place.

As a bodily constructed space, there is a physical presence. The presence of the spectator, the presence of the image, the presence of the medium and the apparatus model along with the medium all reflect and enlarge the physical space. It is argued in this thesis that; the physical presence of the spectator refers to the observational perspective in new media. On the other hand, the psychic space, the cognitive and

perceptual spaces reflect the mental presence. This presence refers to operational perspective because one starts interacting in the mental presence. This is an operational process in immersion.

Since immersion that is discussed here is not physical immersion, the mental immersion of the spectator into the image originates the mental presence of the spectator. One can be at one place physically but at another place mentally. This convergence in the presences can be best defined by the integrated presence.

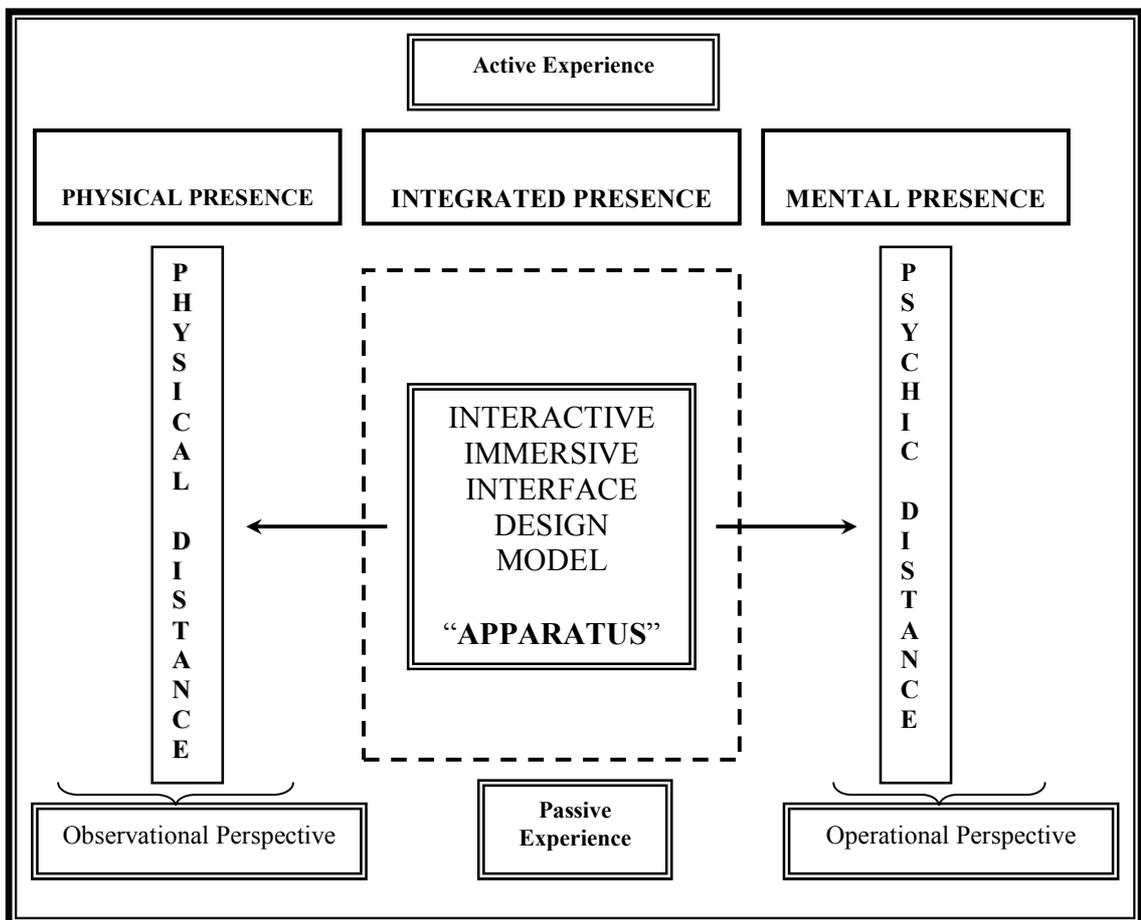


Figure 6

**Integrated Presence and the Role of the "Apparatus Model"**  
 (Adapted from: Nakatsu, Vauterberg and Vorderer, "A New Framework for Entertainment Computing: From Passive to Active Experience": 8)

Interactivity is a major determinant of the integrated presence. “ *Integrated presence* is based on a proper combination of a certain amount of physical activity and mental imaginations. Mind and body come together in a more enjoyable form of experiences and presence than each separately could achieve” (Nakatsu, Vauterberg and Vorderer, “A New Framework for Entertainment Computing: From Passive to Active Experience”: 8) From this perspective, it is argued that the integrated presences can only unfold and lead to experiences similar to the real ones only if the users can achieve a balance between their inner distances; the psychic distance, and the feeling of being captivated by the virtual environment. The active and the passive ends of the experience changes in time and flows in the above diagram. The diagram originally shows the level of activity and passivity with different video games and sports in integrated, mental and physical presences. This model is adjusted to new media studies and the Apparatus Model and modified according to integrated presence notion and distance between the image and the spectator in this study.

Under physical presence there is observational perspective and physical distance. The observational perspective is like the ‘outside the skull’ concept such as symbols and look. It also underlies the dimensional or the visual perspective. When we come to the mental side of the diagram, we have the mental presence and under that, we have psychic distance and the operational perspective. The operational perspective is like ‘operating mentally’ or ‘inside the skull’ activities of the mind such as meaning and experience. It also underlies the cognitive or the emotional perspective. The spectator is standing between action and passivity according to the model. The Apparatus Model and

the immediacy ideology behind the model transforms the passive spectator into an active interactant. This happens when the physical and the mental presences integrate with each other; in other words, when the physical distance is overcome by overcoming the psychic distance.

### **3.2.2 Experience through Interactivity or Interactivity through Experience**

The user who engages in interaction with the new media does expect something different from this experience. This immersed user wants to explore the visual and sensory pleasures of the spatial differences. Experience is, in a sense, the end process of learning. As discussed in the former parts of the chapter, it is not the only way to learn something but it enhances the human capabilities in experiential cognition. While we experience something, we usually learn something in return but this learning does not have to be about the object that we are interacting with. The thing that we have learned can be the steps and processes involved in the experiential sequence. The spectator who has started interacting with the new media via the apparatus starts learning and discovering the world on the other side of the interface. Here, the apparatus model acts as the interface that develops and improves our experiences while facing with the other side of the interface.

The interactant starts to carry the notion of experience and explores the psychic distance as s/he continues to immerse into the medium. While s/he is doing it, s/he experiences the overcome distance with the help of the immersive apparatus. So, one can say that interactivity brings out experienced interactants in overcoming the gaps and

levels among communicative worlds in the images. It can also be said that experience in the immersive apparatus brings out interaction. When the experience is passive as mentioned as the observation, there is mental interaction. When the experience is active, the presence of the spectator starts to be integrated with the presence of the physical interface and the image, and there is interactivity among them. No matter the interaction is via physical spaces or via mentally constructed spaces, the sense of “experiencing something” brings the interactant closer to reality.

So, the experience gained via interaction tells the interactant about the medium, about the image and about the Self. While trying to identify her/himself with the image during immersion, the interactant experiences the reality behind the interaction.

## CHAPTER 4

### THE CONSTRAINTS FOR INTERACTION

“The ‘existential’ relation between the spectator and the image has a spatiality which can be linked to spatial structures in general. It also has a temporality linked to the events represented and the temporal structure that flows from these.”

Aumont, 1997: 77

As it can be derived from Jacques Aumont’s statement, the “existential relation”, which is interactivity in our case, has the components of space and time. Although they can be classified as the components of interactivity, they are counted as obstacles or constraints for interactivity in new media.

The constraint of time in the experiential space is implied everywhere in the ideas of movement, effort and accessibility (Tuan, 1977). So, in immersion and interaction, we can talk about time and space as two collaborative subjective notions. “People differ in their awareness of space and time in the way they elaborate a spatio-temporal world. If people lack a sense of clearly articulated space, will they have a sense of clearly articulated time?” (Tuan, 1977: 119) Most of the new media objects; such as the CAVE installations mentioned formerly and the “inhabitable interfaces” contain these notions of articulated time and its relation to space.

The idea of inhabitable interface or architecture as an interface is not a new one. architecture and architectural surfaces as interfaces for communication have been known and used throughout history (Messaris and Humphreys, 2006: 283)

“The greater the distance the greater the lapse of time, and the less certain one can be of what has happened out there” (Tuan, 1977: 121). That’s why we feel close in the temporal dimension while we are physically close to something in real. Timelessness can also be considered as another quality of distant places in this regard. In the inhabitable interfaces, the communication media begin to define the spaces that our bodies inhabit instead of physical walls (Messaris and Humphreys, 2006: 275). These inhabitable interfaces expand the notion of physical space and they provoke new experiences of closeness and proximity. Closeness and proximity are other versions for defining time and space.

Not only time and space are constraints for interaction, but also the external effects; such as distractions or the technological misuses and difficulties are counted as constraints. One has to overcome these constraints or even minimize them in order to interact. These distortions can be omitted with the help of the interface design. When we talk about technological complexity and misuses, the design should be ‘user-friendly’ which should allow the user easily to understand and manipulate the system.

#### **4.1 Time in Interaction**

Time in interaction can be defined as the duration of the experience. However, it can also be interpreted as the time of the image and the time of the spectator. When we

connect these nodes during interaction, we can successfully interact. Otherwise, because of the differences in time, nobody will be able to perceive the images represented as they have been.

“When we refer to the time of the spectator, we are referring neither to this body time nor to the mechanical time measured by clocks. The time of the spectator refers not to some “objective” time, but to our temporal experience” (Aumont, 1997: 75). So, when we define the time of the spectator, we can only count it as the duration of experience. It starts with the observation and lasts until the spectator puts an end to the interaction. The time of the spectator and the time of the image should never be confused. The spectator has the freedom to look at an image as long as he wants if the physical characteristics of that image allows so. For instance, one can look at a photograph for hours; but one cannot look at a particular frame in a movie for hours, only for seconds. This can be defined as an aspect of the temporality of the image and it is surely experienced as a constraint for interactivity and immersion. “Almost all images ‘contain’ a time which they are likely to communicate to the spectator if the presentation apparatus is capable of doing so” (Aumont, 1997: 121).

When we come to the question of the apparatus model, it has a temporal dimension in relation to the spectator and the image. The image is always considered as temporal and this stands as a constraint as stated above, however the spectator, with the help of apparatus can overcome this constraint and interact with the image. The spectator can decide on the time of the interaction and he/she has this freedom. However, sometimes this freedom can cause other time constraints. The content of the

image may not represent the spectator time and as they do not collide, the act of interaction and immersion may not be successful. Here, the transparent immediate apparatus eliminates this time conflict and bring both the image and the spectator to a same time frame. Thus, the spectator starts feeling present in time and immerses.

As another constraint, the outside effects can cause conflicts in the spectator-image interaction. In the movie theater example given in the Chapter 3, it was argued that the dark atmosphere encourages the spectator to immerse into the screen; however the opposite can also happen and the atmosphere can also harden the process and act as a constraint. So, one can say that the variability aspect of time can also direct the spectator's attention to different directions in time and this also limits interaction.

The apparatus model should be so successful that it should omit the time intervals and omit the time gaps while the spectators enters into the world of the image. When the apparatus can achieve this, we can conclude that the time constraint is over. This is the ideology behind the Apparatus Model. It should help the spectator to self-identify with the image. When the identification is achieved, the interactant feels present in the time frame of the image. This creates immediacy in interaction and in mediation. As a result, the time conflict is overcome.

## **4.2 Space in Interaction**

The struggle between distance and proximity is fundamental to nearly any image-based experience and is the basis upon which most images become virtual. Irrespective of whether the experience is based on

two-dimensional screens or three-dimensional simulations, there will always be some distance between the images that are seen and the viewer who is looking. This will only change if images become physical and sculptural objects or if the bodies of viewers become holographic (Burnett, 2005: 72).

As stated in the above quotation by Ron Burnett in his famous book *How Images Think*, an image's physiology cannot change when it is once constructed and created. Also, the spectators cannot become holographic entities. This introduces the problematic of spatiality of both images and spectators; and this forms an obstacle towards interactivity.

It is always presupposed that the image and the spectator do not share the same space, and there is always a distinction between the plastic and the spectatorial spaces. "The spectator not only perceives the representational, figurative space of the image, s/he also perceives the plastic space of the image itself" (Aumont, 1997: 100). In immediacy, not as a time concept but as a space concept, the distances shorten and it becomes for the spectator to sense the space as easy as he/she perceives his/her own bodily space.

As a part of the perspective, apart from using different camera angles, close-ups for instance are manipulations to overcome this constraint. In new media, the user is given the capability of doing close ups in video games, in internet, or the capability of zooming in and out. The success of the apparatus lies here; without even using physical technological materials, the system of mediation should itself represent itself according to the spectator's perception.

As a result, there is only one solution to this problematic of interaction concerning spatial differences and it is the immersive apparatus. The model apparatus brings the image and the spectator to the same spatial level and help them engage in interaction.

#### **4.3 External Distractions and Technological Complexity in Interaction**

As another constraint for interaction, we can count the external distractions and the distractions caused by the complexity and difficulty to use certain technologies during interaction in new media. The experience of the immersion and interaction is distracted when there are some external influences apart from the internal motive.

It is much easier to have this experience when there are no distractions to interrupt (Norman, 1993: 33).

Not only in new media, but also in traditional types of media such as television, theaters or cinemas, the further away the spectator is from the image, the more distraction and interruption is involved in the immersion process. Usually the large screens and huge displays improve the spectator's ability to capture the event. "In any environment the event best captures the attention when the sensory experience is maximized and distractions are minimized" (Norman, 1993: 34).

The computer, for instance, interrupts the interaction when the dialogue boxes pop-up suddenly. Or while the spectator is looking at an image, the outside noise can distract the process of immersion.

Our model of the apparatus is designed in new media technologies that it minimizes both the external distortions and the internal conflicts. That is one of the ideologies behind this successful interface design. The design of such immersive interfaces should not be much complex. The spectator should be able to understand how to use it and how to manipulate it. When the interaction process becomes an automatic response towards such an interface, then the immersion should not be interrupted by other sounds and visuals that might break down the bridge between the spectator and the image. Wearing head-sets in VR systems, or using earphones, surround sound systems are not ultimate solutions to prevent external influences on the interaction process. The apparatus should be so strong in reflecting the real experiences on the spectator that there should not be any need for physically disturbing head-sets or earphones like in the case of the immersive CAVEs.

## **CHAPTER 5**

### **CONCLUSION**

The aim of this thesis was to problematize “the creation of the feeling of presence” and immersion concepts in relation to transparent interfaces in new media. Contrary to the common understandings of interaction as a term that is only related to new media and physical space, in this thesis it is argued that interaction is not only a physical notion and it has a mental aspect which relates us to the notion of experience and the feeling of presence.

An ideological model called the “Apparatus” is introduced as an indicator of the ideas stated above. This ideological model is used as a methodology to analyze the image-spectator interaction in new media. The apparatus carries the characteristics of immersive media and it erases the traces of mediation and gives rise to the transparent mediation as suggested by Bolter and Grusin. In this thesis, Lev Manovich’s new media definition, after Bolter and Grusin’s notion of ‘remediation’, is taken as a guide to formulate a model for interaction and immersion. As a part of remediation, immediacy and hypermediacy are used as terms that help the spectator to overcome constraints against interaction.

The main argument of the thesis was based on the idea that new media acts as a object to improve the process of interaction along with immersion and this “acting as a tool” notion is used as the derive for “the feeling of presence”. The ultimate answer to the question “what is it in the new media that people want to interact with?” is the process of achieving the “presence”. The interface is just an object that supports this process. It helps this process by creating immersive environments, such as CAVEs, that encourage people to get in an action. Unlike the computer scientist define the interface, in this thesis interface is regarded as a fluid ontology that is immersive in nature when it is perceived as “successful, or useful enough” to ease and to improve the experience in interaction.

According to various analysis made on the topic concerning immersive CAVE installations, video games and Nintendo Wii, one cannot make a clear distinction between the experience in the content and the experience in the interface, however a distinction can be made within these experiences themselves. As Christian Metz argues in the cinematic spectatorship: “What causes people to go to the cinema no matter what the movie is” it is argued that the feeling of presence created via experiencing the reality in the image as a result of immersion and interaction causes people to act on the image in new media. Both the effects of the immersive interface design and the content in new media technologies encourage people to interact and experience. It can be achieved through the experience created via interaction and the ideological model of the interface design, the apparatus, can help the spectator to achieve this. It erases the traces of mediation and this helps the spectator immerse more into the image and experience the process of interaction as real. The narcissistic identification with the image via apparatus

helps the process and develops it in terms of immersion. The notion of perspective and how the spectator locate the Self in front of or in the content of the image is dependent on the argument of identification. When the identification with the image is strong, interaction is strong too. This helps the spectator to eliminate and disregard the external distortions and time-space conflicts during the immersion. When the spectator feels close to the image, s/he feels that the time difference is also shrinking automatically. These time and space conflicts form two of the constraints for interaction.

The model apparatus is designed to be used in such a way that it eliminates all these distractions and it helps the spectator to become the interactant and improve the process of interaction.

Even if the terms interaction, immersion, immediacy and presence are not unique to new media studies, they are argued to be better represented during the acts of the spectators while using new media objects.

As the conclusion, one can say that the new media interface design acts as an object that improves the steps in interactivity unlike the other traditional media objects. The immersion discussed in this study brings with it interaction, and it is concluded to be the ultimate reason behind interactivity and the success of interaction. New media apparatus acts as a better interface because it is immediate in nature. This immediacy causes the mediation process to be fully transparent and thus, the time-space conflicts are better overcome.

Even if this study only examines images under new media objects, other media objects and their effects on user interaction and immersion can be analyzed for further studies. For instance, audio media, as an immersive medium by nature, can also be analyzed under the scope of new media concerning electronic and digital media. As another argument, different media objects' relations to each other can be studied further as an extension of this study, i.e. the impacts of different integrated new media on user interaction and immersion.

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