

**INTERACT-ED
INTERTWINING NATURE OF VIRTUAL REALITY**

A commentary on the visual language of Virtual Reality in Interface(GUI) design

by
KÜRŞAT FATİH ÖZENÇ

**Submitted to the Institute of Social Sciences
in partial fulfillment of the requirements for the Degree of
Master of Fine Arts in Visual Arts Visual Communication Design**

Sabancı University

Spring 2004

**I am looking for the face I had
Before the world was made.**

W. Butler Yeats.

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INTRODUCTION

Representation via Simulation

Questioning reality, the igniting drive of all philosophical accounts since the beginning of human experience, has undergone a shift and a mind-blowing extension with the reality 'virtualized' by means of the dominance of technology. Such a shift was triggered by the invention of panorama, diorama, and photography in the 19th century and continued with the computers in the second half of the 20th century. Virtual reality is a reality which is apparently true, a reality which is apparently real; but not really 'Real' (Batchens, 274). The dilemma between what is real and what is apparently real- or not real- brings the matter onto a slippery surface. Webster states virtual as "being in essence or effect though not formally recognized or admitted" and reality "a real event, entity, or state of affairs"; when we amalgamate the two we may understand that "virtual reality is an event or entity that is real in effect but not in fact." If looking at the historical perspective of the matter, the term can be easily related to the classical antiquity, the caves of Lascaux, or to the invention of alphabet. Considering virtuality as in play in even the most ancient ages moves the discussion to representation.

It is just a matter of representation if we look at the origins of the reality matter. Plato in his Republic actualizes the very first arguments of virtuality with this 'virtual' conversation he writes:

to get hold of a mirror and carry it around with you everywhere. You will soon be creating everything ...the sun, and the heavenly bodies, the earth, yourself, and all other creatures, plants, and so on.

‘Yes but I’d be creating appearances, not actual real things’, he said....

“his creations are not real, according to you, but do you agree that all the same there is a sense in which painter creates a bed?”....

“so if there is no reality to his creation, then it is not real; it is similar to something real, but it is not actually real. It looks as though it’s wrong to attribute full reality to joiner’s or any artisan’s product...” (pp. 14-15)

What does he mean by “actually real” or “actual real” things? What is insisted on in the “actual real” is a kind of investigation of representation of the bed created by the craftsman and the painter. The Platonic philosophical account at this point uses the terms actual, actually and actualizing. The painter who draws the bed on his canvas cannot actualize the reality of the bed, or the bed as a reality. However, he extends the reality through mere ‘appearance’ despite the fact that the canvas can be accepted as an actual object. The intertwining character of virtuality is at first an insight that begins with this materiality and presence issue. The window to the outer world, as a canvas, a chapel’s wall, paper, and subsequently the monitor, the virtual needs material embodiments to become the part of reality.

The approach to representation exemplified in Plato became inadequate to understand and decipher reality in the late twentieth century in particularly regarding the extensions it gains by means of new technologies. Baudrillard, offering one of the alternative philosophical accounts, asserts the importance and role of simulation while invigorating the virtual reality issue. According to the Baudrillard, things cannot be distinguished as real or virtual so far. The virtual is converted to the real. All we experience (objects, events,) and even we ourselves become simulations, simulations of simulations and take on roles in life as the part of the system. When he says that not a Gulf War but that a CNN event occurred, he points out the dissolving nature of time and its evolution into ‘real’ time. Time, which has been generally neglected by the structuralists, gains new perspectives which transform the body space relations into new dimensions.

VR presents diversity in its nature according the means of its applications. It may be considered as diversity from Lascaux drawings to head mounted displays. The level of the virtuality depends on the factors of *immersion*, *interaction* and *telepresence*. According to Michael Heim, VR consists of three basics: *immersion*, *interactivity* and *information intensity*:

Immersion originates from devices that isolate the senses sufficiently to make a person feel transported to another place. Interaction comes from the computer's lighting ability to change the scene's point-of-view as fast as the human organism can alter its physical position and perspective. Information intensity is the notion that a virtual world can offer special qualities as telepresence and artificial entities that show a certain degree of intelligent behavior. (Heim, pp.7)

GUI - Graphical User Interface, Cultural Interfaces

For the Interact-ed project, the context is confined to the screen-based virtual reality applications, and especially graphical user interfaces of the computer screen. Computer interfaces have begun their evolution in the style of command line interaction (MS DOS environment) and developed into today's graphical and direct manipulated interaction style with the Apple Macintosh GUI in the early 1980s. The Apple GUI, based on the direct manipulation by the user on a metaphorical workspace, is designed according to the physical entity and behaviors of a conceptual model which is a 'description of the proposed system in terms of a set of integrated ideas and concepts about what it should do, behave and look like, that will be understandable by the users in the intended manner.' (Rogers, Sharp, & Preece, pp.40)

CHAPTER1

Trios of Virtual Reality

Unconscious, Positioning, Actualizing (Conscious)

Apart from its conceptual model, GUI shares an intrinsic tradition of the window metaphor of western culture. GUI's are not totally new creations of the human mind. Rather they carry codes of the print media, and cinema, and amalgamate their codes into a new medium with new protocols. With respect to this continuity, Lev Manovich proposes the term 'cultural interfaces' to describe a human-computer-interface - the ways which computers present and allow us to interact with cultural sites, CD-ROMs and DVD titles, multimedia encyclopedias, on-line museums and magazines, computer games, and other new media cultural objects. (Manovich, 70) He moreover asserts that the forms and behavioral axioms of print media and cinema have prepared the foundation of the user interface paradigms. Cinema

at this point is a crucial medium for reading digital media. According to Manovich cinema prepared us for digital media with its sampling, random access, or database processes which resemble digital applications. Regarding this similarity with cinema, then it is possible to make psychoanalytic and body-space related readings of them as cultural interfaces. Virtual reality is in its nature a mixture of the conscious and unconscious of the subject. The unconscious is ignited by what Freud called the primary processes whereas the conscious is triggered by the secondary processes. For the unconscious side, the pleasure factor of the cultural interfaces is the key driven force of all the psychic activity. For the conscious based activities, actualizing and positioning are the other key issues when thinking of the relations of body and space.

Virtual Reality of Unconscious

Dynamics of Pleasure

As stated before, GUI's have been created with a conceptual model based on form and behavior. Form claims to represent the physical side of the interface whereas the latter is the experience of the user. Form is tightly related to the subject (or user) and subjectivity. The relationship between psychoanalysis and semiotics itself intertwines to propose that the study of the subject is a study of signification. According to semiotic readings of Freud views the subject as a signifying complex (Silverman, 1983). Considering the relation between the subject and the computer interface (as an object), the subject experiences a speculative signifying network that enables us to talk about pleasure in terms of psychoanalysis. In topographical analysis of psychoanalysis, there is a notion of substitution and interchangeability through the unconscious and preconscious considering their psychic activities as primary and secondary processes. Primary process is the psychic activity of the unconscious substituting the repressed desire with *perceptual identity* which offers the pleasure of a regulated visual ensemble would be that it seemed to offer the same form of stimulus in every situation. Secondary process, on the other hand, is related to the preconscious substituting the repressed desire with *thought identity* which offers different substitutes in accordance with every different situation.

'Unpleasure principle' later named as pleasure principle is defined as governing all psychic activity, a principle which operates as the reduction of tension. (Ibid, pp.68) In accordance with this definition, a user can experience a tension while dealing with work and leisure activities. While work tasks form unpleasure, leisure tasks function to eliminate the tension. User relieves the tension of work tasks and fills this repression with leisure task

substitutes. Also, from a Freudian view, the fundamental substitute of the unconscious for the lack of pleasure is the hallucination which is mostly what a daily Internet user experiences. The floating feature of Internet assists the user to shift between several windows at synchronous time intervals which are similar to unconscious behavior, dream. Hallucination is a virtual and visual substitute for a repressed desire. Taking the screen as one of the dominant extension of the information society, an internet window is, by its nature, acts as a 'daydream' for the gratification of subjects, a wish-fulfillment for repressed desires.

Metaphors

The tension created by the screen and its hallucinatory features are triggering cues to form the path of signification. The signification on the screen is based upon the concepts of metaphor and metonymy. Since these concepts exist cognitively, metaphor exploits conceptual similarity whereas metonymy conceptual contiguity. (Ibid, pp.108) User interface metaphors are constructed upon a compound of visibility like a picture representing the purpose or attributes of a thing. These vary from tiny images on toolbars to the whole screen in some programs; "from a tiny scissors on a button indicating *Cut* to a full-size checkbook in Quicken". (Cooper, pp.289) Metonymy, on the other hand, is based upon experience, which is actualized with the overlapping windows and sliding menus on the screen. Despite the divergent classification, both metaphor and metonymy – operate psychically in ways that mesh with the primary and secondary processes – but they cannot be identical with them. They have to be construed as something which meshes but not always – otherwise there would be no room for invention here.

As the signifying the real world elements (i.e, image, sound, text data) with virtual elements on the frame of a screen, desktop metaphor proceeds the presence-absence dialectic which oscillates between pleasure and unpleasure.

Metaphor and metonymy in the computer interfaces can be seen as signifying formation which facilitate a movement back and forth--a 'transversality'- not only between the two elements which (refers to what) are conjoined, but between the primary and secondary processes, the unconscious and the preconscious (Silverman,pp.110).

This transversal manner feeds the intertwining character of computer interfaces that leads to desire which in it's entirety based on displacement, and actually consists of metaphors and metonymies.

Death in Interface, (a)way leading to Nirvana



Figure1: Execution Commands (Microsoft Windows)

For Freud, pleasure represents the absence of unpleasure, that is, it is a state of relaxation much more intimately connected with death than life. In the intertwining reality of the interface, the tension of the pleasure with death cannot be easily relied upon the discourse. One thing that evokes death is the crushing machines and loss of data. Another is the delete, clear, escape, exit commands of the software(s) and operating system(s). Moreover, there exist operations which are impossible to do 'undo'. Despite the possibility of the loss of data and crushing systems, a reverting possibility on the screen always exists. In a delete acting of the files in the system, for example, there is a possibility of rescuing the death files by going to the trash can and restoring the deleted files. Similarly, in a crushing situation, resetting the machine can give the chance to user to continue to work on his/her stuff on the software again. The tension that makes the computer pleasurable (by means of death) is this notion of repetition and reverting fixations. One of the leading readers of the psychoanalysis, Lacan (1970) psychically believes that the driven force behind the death-life tension is repetition. In other words, he implies that pleasure turns to displeasure because repetition "refers to a preceding moment -to (before) the loss of pleasure (or consistency). Pleasure, however, as a fixation, a trace in memory, and gives body to a fantasy." (Ragland, pp.89) The tendency to the fantasy on the screen is actualized via games, web surfing, and pornographic websites that eliminate all tension, thus leads the user reaching to Nirvana.

Behavior

Pointing, Click, Drag & Drop, key press

The user acts as a direct manipulator of the GUI compound of image and text throughout the actions held via input devices like keyboard and mouse. The user interacts with the computer by *pointing, click, drag & drop, and key press operations* to instructing,

conversing, manipulating, navigating, exploring, and browsing the interface. These basic operations functionally lead the user to further develop the usage(s) of the interface. Cooper & Reimann (pp.273) point out this furthering via a pyramid-based hierarchy in the interaction process by mouse and keyboard actions. (Figure 2). Regarding the argument of the paper, these actions between the user and the screen can be summarized as:

- Point (Point)
- Point, click, and release (Click)
- Point, click, drag, release (Click and Drag)
- Point, click release, click, release (Double-click)
- Point, click, click other button, release, and release (Chord-click)
- Point, click, release, click, drag, and release (Double-drag)

From a psychoanalytical point of view, these basic actions give the cues of psychic mechanisms as drive & cathexis, fetishism and motion.

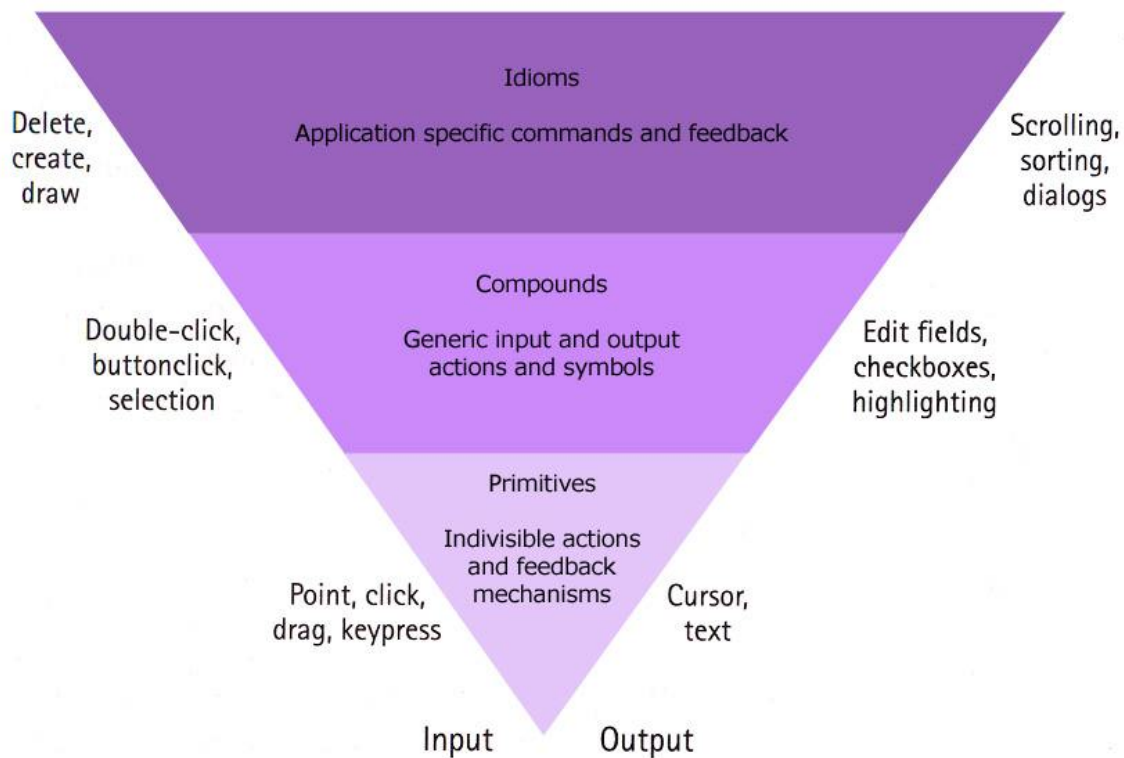


Figure 2: User Behavior Pyramid (Cooper, pp.273)

Drive & Cathexis

The instinct to the point, click and other interfacial behaviors on the screen are generally rooted to the term intuition which means quick and ready insight (Cooper, 2003).

The insight that triggers the behavior of the subject in the interface depends on the drive & cathexis charges on the subject. According to Freud, “drive as a mental representative of a somatic impulse provides a psychic mediation and expression of a physiological phenomenon. Furthermore it is the motivating source behind all psychic activity, from dreams to rational thought.”(Silverman, pp.67) Drive is also the igniting force from software interfaces to operating systems. Cathexis, the libidinal energy invested in some idea or a person or an object, depicts the process behind the click and key press actions. It is a kind of an investment that the user has to wait in order to reach to satisfaction.

Click Fetishism



Figure 3: Click Icons (Microsoft Windows Icons)

Fetishism is a continuity of psychoanalytic substitute economy. In Freud’s view, “fetish is a ‘penis-substitute’ i.e., a surrogate penis in the little boy’s unconscious compensating for the woman’s (or the mother’s) penis which he once believed that his mother had and now does not want to give up” (McClintock, pp.185). Pointing and clicking actions in this substitute economy become behavioral fetishes that compensate the sexual phallic drive. Related to the click fetishism, Everett (2003) brings a new perspective to this argument. Everett makes an analogy between human body/thought and computer hardware/software. An analogy between human body/thought and computer hardware/software operations results in

the click fetish, signifies the persistence of the body despite the powerful rhetoric of the post human in new media figurations. For click pleasure is predicated on an urge to retain the primacy of the body (or the flesh). The fetishizing of the clicking action, and click pleasure’s lure of sensory plenitude, inhere in the bodily tactility of the touch- touching the mouse, the keyboard, the touch pad, and screens and wireless keys. (Everett, pp.15)

Drag & Drop: Motion, *and* emotion



Figure 4: Animated Motion (Microsoft Windows Behavior)

Drag-and-Drop (D&D) which is firstly used by Finder by Mac is one of the most efficient interaction operations. It covers all operations i.e., pointing, clicking, and moving. By description D&D is “clicking on some object and moving it to imply a transformation” (Cooperman, 2003). Motion is the distinctive property of the D&D in comparison to others. Motion is the relation between the stimulus (operations held by the user) and response (operations held by software-system). This relation between subject and object implies us the idea of motion, especially when emotion is expressed as an action. What is new in the position here is that emotion is fundamentally explicable as a motion between subject and object (Hillman, 1997). Hillman’s romantic approach to the motion analogically corresponds to D&D and other motion-based events on the screen. Motion apart from D&D in its nature ignites the affectivity of the user. Brian Stone’s study of ‘Type in Motion’ which investigated the motion in a different context pointed out the importance of motion in the emotional potential of the interfacial behavior. In his study, participants’ reaction to motion was investigated by showing still and moving images of a typographic animation at different intervals. Qualitative and quantitative analysis of this study concluded that motion evoked emotional responses in the participants. Motion on the screen is simulated with typographic motion. The participant shows no gestures when seeing the still image (figure 5), whereas when she sees the moving types she reacts this with smiling which depicts an emotional awareness (figure 6). To conclude, motion can be regarded as one of the basic dynamics of pleasure which also gives cues about the future tendency of GUI design.



Figure5: Kinetic typography Reflex 1 (Stone,)



Figure 6: Kinetic typography Reflex 2 (Stone,)

As one of the later figures of semiotics, Barthes (1988), insists that “the object serves man to act upon the world, to modify the world, to be in the world in an active fashion; the object is a kind of mediator between action and man.” (1988, pp.189) As a strong mediator between the ‘virtual’ action and man, taking the interface as an object in the framework of the semantics and psychoanalysis leads us to develop an extensible ‘reading’ towards the meaning of interface. Developing this argument based on pleasure as the most subjective psychic issue gives us a chance to speculate such a reading. Speculation, apart from its refreshing mental alertness, causes related people (i.e., designer, academic, and even programmer) to find new domains in designing the future computer interfaces in which the tendency is totally focusing on freak users. Computer interface, which is enforced to be customized, individualized more and more, will have evolved to the rear window of the user, that reflects his/her identity. Then, taking psychic side of the user into consideration in the design process of GUI will become a necessity. This factor will help us to develop an emotionally perfect interface which will address pleasure, as the peak point of any perfection.

Positioning in VR

Immersion

Immersion is a 'you-are-there' experience. It has several applications from 3d sound studios and 3d games to the HMD (head mounted displays). Immersion is a physical actualizing of the body in the so-called space. It is generally a visual experience but comprises tangibility and hearing as well. HMDs can be accepted as "full-immersion" technical devices dislocating the space. Their technical side can be summarized as follows:

The HMD uses tiny light-weight stereo-binoculars to display computer graphics just inches in front of the eyes. The earphones built into the helmet allow the user to hear only the computer-controlled sounds of the virtual environment. By shutting out the primary world, the HMD forces the user to take all sensory input from the virtual world. The HMD allows you a choice of where to look, but the choice are limited to the virtual world.(Heim, pp.20)

The limited look in the virtual world carries parallel structure of the real world. In the real world, the look which is the prerequisite of vision is qualified by the gaze. The gaze itself envelops them (things surrounds the seer), clothes them with its own flesh. (Merleau-Ponty, pp.164). There is an intertwining relationship between the seer, the seen and the body experiencing the vision. Every experience of vision is actualized in the context of the moving looks, which the seer wants to touch or belonging to the tangibility of the visible. As Merleau-Ponty insists:

we must habituate ourselves to think that every visible is cut out in the tangible, every tactile being in some manner promised to visibility.... the tangible itself is not a nothingness of visibility, is not without visual existence. Since the same body sees and touches, visible and tangible belong to the same world. It is a marvel too little noticed that every movement of my eyes – even more, every displacement of my body – has its place in the same visible universe that I itemize and explore with them, as, conversely, every vision takes place somewhere in the tactile space. There is double and crossed situating of the visible in the tangible and of the tangible in the visible; the two maps are complete, and yet they do not merge into one. The two parts are total parts and yet are not superposable.(pp.166)

From his point of view, how can virtual reality be analyzed? In technical means, tangibility in the virtual environment is restricted to gloves. As a wearing apparatus covered with sensors which translate the moving gestures into coding and, then in the computer processor, translated again into virtual motion. Tangibility itself is virtualized as well within the help of technological devices. It is not situated in the vision, but rather actualized with the technology. Hands (Body) as experiencing the VR is virtualized as well –from the actualizing point of view- that concludes an intertwining situation. Intertwining is an experience which covers both realities; reality and the virtual reality.

Paul Virilio, in *Information Bomb*, states that we are not seeing an “end of history”, but we are seeing an end of geography (pp.9). What he defines from this observation is the age of *large-scale optics*, a term derived from the scientific *jouissance*, such as virtual reality is from the reality. What can be underlined at this point is that, despite the new genre developments acceptance as revolutionary, they refer to the previous terminology. The furthering meaning of ‘virtual’ lies on the reaction to the technological developments. Virtual as a ‘fake’ is somehow a threatening situation that has to be divided from the ‘real’ reality. The language-based alienation can’t be just a simple reaction but a result of anxiety which can be exaggeratedly furthered to the Plato’s ideas about poetry and tragedy. It is a kind of demon, which should be labeled with a ‘virtual’ label and alienated from the reality itself. This reaction does not help to intervene the effects of the virtual reality, rather clarifies and stabilizes it in the minds of the people. Who can be the puritans of the reality? Reality puritans as a speculative term can not be restricted to ‘some’ unknown people but rather to the all humanity unconscious or conscious fears of lacking the reality they once possessed.

Actualizing in VR

Interaction

Interactivity in virtual environment shows diversification: limited with the information based html websites, or limitless with the simulation rooms-flight simulator-, or partly interactive with the chat rooms where there is a chance to experience all the sentiments-

happiness, anger, love, vice versa. What differentiates the daily life's face to face interaction with this newly defined interaction? Interaction needs a translation object –computer screen which can be defined as subject. The screen has interfaces. Since every software has its own interface, computer screen has got several faces to interact with people. Do these faces have an identity? Identity in virtual environment is more problematic than the real life. The diversity of virtual faces differs from the theatrical characters of a Shakespeare play as vague somehow a split in identity. The subject experiences a split which decentralizes the subject. In a deconstructionist discourse, Zizek in his essay classifies the situations resulting in split between 'the self' and 'its' virtual 'body' which violate the standard moral-legal norm of 'one person in one body':

Many persons in a single body (there is no clear hierarchy between the plurality of persons-no one person guaranteeing the unity of the subject)

Many persons outside a single body (MUD-multiple user domain- in cyberspace)

Many bodies in a single person (fantasy of aliens, multiple bodies, but one collective mind)

Many bodies outside a single person (institution: the State, company, school....we know very well that institution is not an actual living entity with a will of its own, but symbolic fiction)(Zizek, pp.140)

'*Many persons in a single body*' in the virtual environment of world wide web break the boundaries of the real world whereas fragmented into 'its' so-called identities. When the interactivity matter is evaluated in the HMD's perspective, another extension appears.

Merlaeu-Ponty in Intertwining Chiasm points that

Vision (as is so well indicated by the double meaning of the word) be doubled with a complementary vision or with another vision: myself seen from without, such as another would see me installed in the midst of the visible, occupied in considering it from a certain spot. (Pp.166-167)

The Self seen from the 'Other' in real world makes the self defined. In VR of the HMD the existence of the 'other' is confined to the sensors which can only recognize the user with the technical advances. Technical advances can't give the aura of being seen by the 'Other'. That is why it is not easy to talk about an aura of the virtual reality despite the applications creating a kind of artificial atmosphere within the self.

Agents (Avatars)



Figure 7: Agent Ed -Agent of the Project

In Vertov's *Man with a Movie Camera*, the spectacle follows a man who carries the camera into several places to give the chance to the spectacle to experience the fake realities and the man act as a mediator between the medium and the spectacle. From the Vertov's avant-garde cinema to today's digital media, there is a notion of agency on the screen. An agent is the one that is authorized to act for another. Agents possess the characteristics of *delegacy*, *competency*, and *amenability* (Croft, 1997). In context of the project, Agent Ed is created for this mediating task. While developing such a character, the key points were the snail metaphor, emotional design, and joyfulness on form. The snail as a metaphor rooted in the idea of the mobility of the space, mobility of the user (of virtual university) and the perfect form of the shell (depicting the evolutionary side of the design). These considerations are combined in the Agent Ed's narrative side; Ed is a member of the Interact-ed University and acts as a student, orienting the spectacle through the tour of the university. Its agency does not cover interactivity and artificial intelligence features in project's context. Ed is created, animated, and composited to depict the idea of agency.

CHAPTER 2

Project Inspirations

Introverted Perspective

Linear perspective, one of the most intrinsic part of the modernity related to vision has roots in the Renaissance accepted as a re-invention of antiquity. “In his *De Pictura* of 1435, Leon Battista Alberti likens a painted picture to an open window: A picture, in his view, should be made to seem as if there was a pane of transparent glass through which we look into an imaginary space extending into depth.”(Edgerton, pp.75). He is moreover written very specific rules for how can such an illusion be achieved. His rules simply explains how a three-dimensional system can be rendered in a two dimensional surface. As called one-point perspective, it presents a rational, mathematically correct representation of the real world which influenced the Western mind through the centuries. According to the overall view at that time “picture rendered in perspective permitted human-beings to see the world just as God conceived of it all Creation.”(Edgerton, pp.76) This point of view in a sense is a key cue for the changing state of mind of the Renaissance man. He began to perceive himself as the center of the universe and he had the chance to get the vision of the God with perspective. John Berger in *Ways of Seeing* asserts that:

The convention of perspective, which is unique to European art and which was first established in the early Renaissance, centers everything on the eye of the beholder. Perspective makes the single eye the centre of the visible world. Everything converges on to the eye as to the vanishing point of infinity. The visible world is arranged for the spectator as the universe was once thought to be arranged for God. According to the convention of perspective there is no visual reciprocity. There is no need for God to situate himself in relation to others: he is himself the situation. The inherent contradiction in perspective was that it structured all images of reality to address a single spectator who, unlike God, could only be in one place at a time...

The centralization of the subject offers a secular, objective, rational point of view which would have given rise to scientific developments throughout the Renaissance. However from another point of view, one-point perspective forces the spectacle into a more strict position. Moreover according to the opponents of the linear perspective:

Linear perspective is understood only as artificial symbolsexpressing the peculiar values of Western civilization.... During the renaissance, upper-class patrons championed linear perspective because it affirmed their exclusive political power. Single-viewpoint

perspective, after all, encourages the “male gaze”, thus voyeurism and the denigration of women, police-state surveillance, and imperialist “marginalizing the other. (Edgerton, pp.87)

At this point, introverted perspective offering a decentralization of the subject stands in a counter and alternative situation. Introverted perspective finds its most important pieces in Byzantine Icons whereas the pioneering perspective works began in the Early Renaissance and especially in Florence- where the Renaissance was given birth- Regarding these points perspective will have been questioned with a comparison between the Early Renaissance Florence period and the Medieval Byzantine Iconography.

Early Renaissance period, which can be called as the Quattrocento as well, was given birth in Florence. Florence’s pioneering situation was not by chance and had got strong socio-political reasons. In Early Renaissance there were important artist figures that were accepted as leading personalities of the enlightenment period. Brunelleschi, Donatello and Masaccio are good examples to these pioneering figures. Brunelleschi in architecture, Donatello in sculpture and Masaccio in painting can be seen as milestones of the period. The idea at that time focuses on the rebirth of the antiquity especially with the human body. Anatomy of the human carried them to the perfectionist point of view, the divine circle. *Vitruvius*; the divine circle then had got voice in architecture, and sculpture. In such an environment Masaccio entered in to the stage. Masaccio managed to transpose the great innovations from architecture and sculpture to painting and for this he was already considered a great artist in his own century. Among his admirers we must remember Brunelleschi, Leonardo da Vinci and Michelangelo. Because he created a turning point in the history of painting with his own work and because he was later followed by numerous painters of great distinction, Masaccio is almost unanimously considered to be "the founder of renaissance art". His one of the distinctive pieces is the Holy Trinity where he applies a typical one-point perspective.



Figure 8: (Analyze of) the Holy Trinity

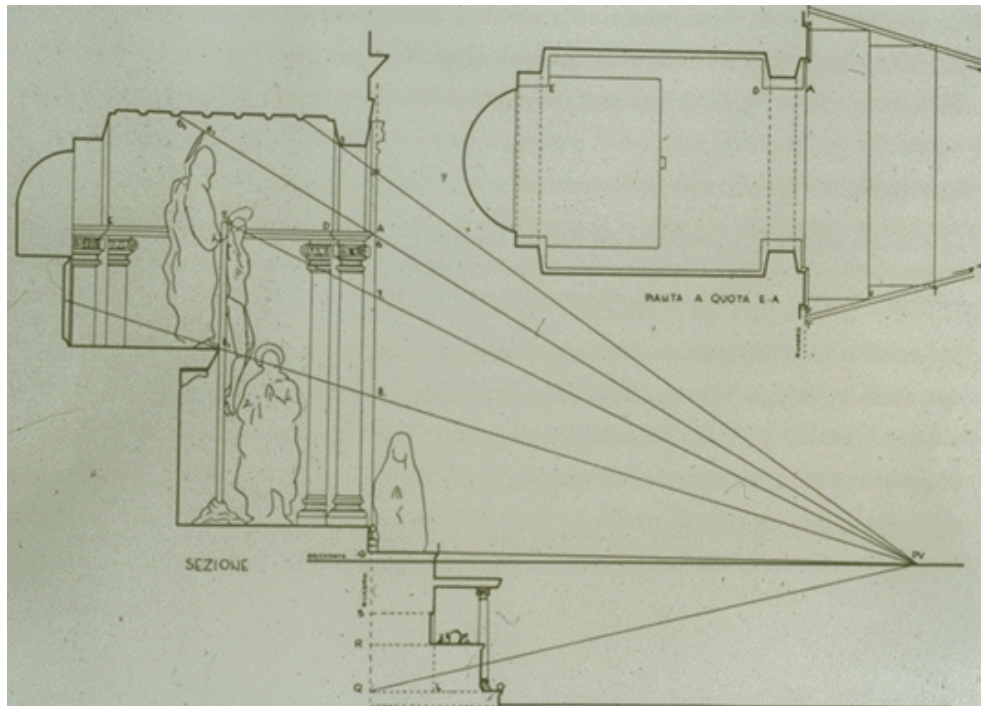


Figure 9: Schematic Analysis of Holy Trinity (Florenski, pp.XX)

From the placement the central focus figure of the Christ can easily be drawn and the mathematical perfection of the composition. Every figure had been placed with precise calculations. Nothing has been left to the randomness of the artistic inspiration. The artist behaves like a mathematician in representing the real world. Representation via nature clearly depicts continuity. Every artistic work is a window to the outer world. Every artistic work has got nature in itself. The power to manipulate the image in a perspective precision makes the artist so self-confident that he/she feels himself as a god/goddess. From the spectacle's side vague should not be as that easy. The centrality of the composition enforces the spectacle to perceive the figures from only a one point. Until the High Renaissance and Mannerism this centrally symmetrical compositions had been used dominantly in painting. In Mannerism artists try to change the placement of the composition with diagonal elements and create a more dynamic atmosphere. A long time ago from the mannerists, in the Medieval Ages, in the Catholic world and especially in Byzantine, they had tried to catch this dynamism with a totally different way: Introverted perspective. Pavel Florenski, a mystic scholar on the Renaissance issue in early 20th century, develop an argument on the introverted perspective, criticizes the western mind of one point perspective regarding the old iconographical works. The Medieval Ages iconography had been the most common way for the Medieval artist to depict his ideas. When we look at its origin icon is a Greek word evolves from "eikon" that

simply means image. More specifically, however, the term “icon” is used to describe “holy images”, for example, pictures of saints, angels, and important persons from the Christian scriptures such as Jesus and Mary. Icons can exist in a variety of different forms and media ranging from mosaic to wall painting and even ivory. “Generally speaking, however when we think of an icon we imagine a representation of a holy figure created in paint on a flat wooden panel.”(Ross, pp.123). With the iconography framework Florenski’s argument asserts that one-point perspective might have been known by the Medieval Age’s artist too, but the reason behind the introverted perspective selection had been a consciously selected choice with intrinsic meanings. That period’s artist’s focal point was the divinity. The overall belief is that the artistic work is a reflection of the holy divine. The center of the artistic work is this divinity which looks at us. Interestingly, the spectacle is not restricted to a one-point of view; s/he can read the art work from different positions. Same (holy) content triggers different aspirations from different positioning.

Related to the Medieval Ages, Andrei Rublev seems an alternative example for the Orthodox and Byzantine tradition. He lived in the late fourteenth and early fifteenth century in Russia. He was influenced by Byzantine iconography. When Constantinople were conquered by Ottoman Turks, the Byzantine artists migrated to several places in Europe; some preferring Italy, others preferring Russia or any other East-West. A preference to the East-West as Russia was meaningful, because Byzantine and Russia were both orthodox and this made them closer in cultural tradition compared to the catholic west. Theopanes, one of the immigrants from Constantinople affected Rublev so intensely that Rublev behave like a Byzantine artist in his iconography. His masterpiece The Trinity icon in 1427 depicts analogical accounts with Early Renaissance.



Figure 10: Rublev, Andrei, the Trinity

Rublev's Trinity icon represented a sacred and traditional religious concept. The three angels in his composition all look much the same; they seem to be all of the same age; physical size and type with same hairstyles. There are no great differences between them at all apart from the colors of their robes. The whole composition concentrates the viewer attention on the three angelic figures who take up most of the space in the picture and who create a unified circular composition movement by their position, wings, and tilted heads. The landscape details are minimal; there are no distractions in the scene nor are there other figures or stories included (Ross, pp.133). Apart from this analysis, the Byzantine introverted perspective can easily be read regarding the positioning of figures and the table. Compared with Masaccio's Holy Trinity, it is easy to observe the distinctive features between the two approaches in synchronous time periods. Rublev's Trinity offers an alternative reading for the viewer. The table drawn in the Rublev's piece looks like a childish, two dimensional representation. However this childish character depicts naturalism rather than a so-called primitiveness. Drawing pictures by indicating only the most characteristic two-dimensional shapes of objects without perspective distortion is natural to the human species. It is observed internationally,

for instance, in the art of preschool children. Figure 6 is a five year old Anna's drawing depicting her lying in a hammock. A cat looking at her in a sweet face. Anna's perception reveals the human's inborn manner in representation issue.

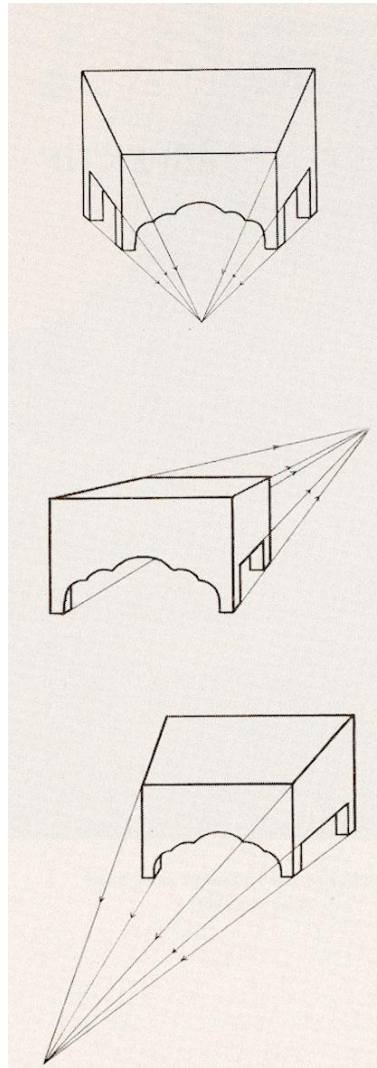


Figure 11: Florenski's introverted/linear perspective analysis

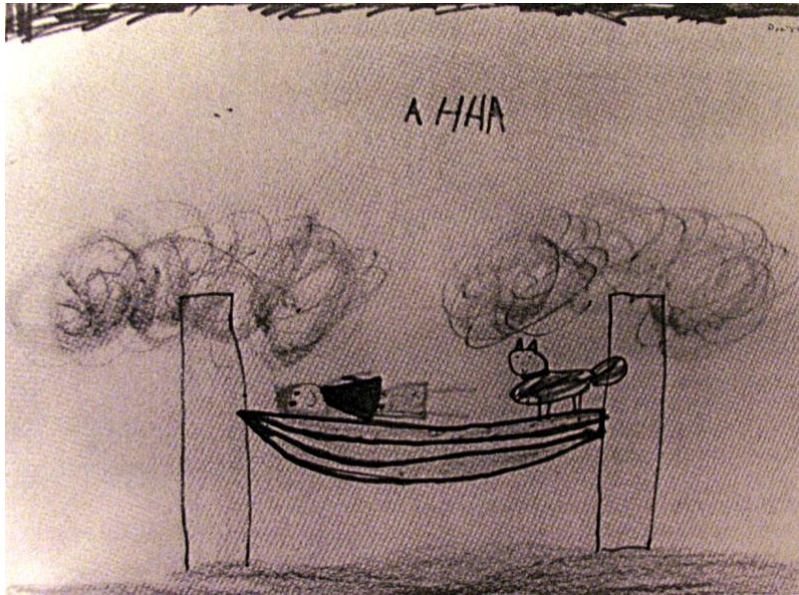


Figure 12: Anna Filipczak pen-and-crayon drawing (Courtesy of Anna Filipczak, Williamstown, and Mass)

The point of view which offers an alternative reading through the evolution of art evacuates parallel mind shifts in the interface design especially considering the custom metaphors which are based upon the window and desktop metaphors. This shift should resemble the shift experienced at the beginning of the twentieth century: Surrealists and Dadaists are just two examples of such a shift in the mindset while looking at the canvas. With different contexts and contents Dadaist Marcel Duchamp and Andrei Rublev as a Byzantine iconography artist has got parallel standings to extend the reality which is represented via perspective. Such a broad point of view let the designer to catch the big picture while looking at the visuality issue.

Dreams with respect to VR

Dreams are one of the key inspirations for the Interacted Project. Their blurry relation with the reality makes them closer to the virtual reality. Convergence points of virtual reality with dreams have been questioned in the path of physical (space-body) and psychological aspects (sexuality, conscious) within analogies and contrasts founded between the two.

Space, where the embodiment of the matter takes place, 'is not an innovation' in its historical and ontological perspective. "The space in which we live, which draws us out of ourselves, in which the erosion of our lives, our time, and our history occurs, the space that claws and gnaws at us, is also in itself a heterogeneous space."(Foucault, pp.240) This

heterogeneity makes us to point out different spaces that define the sites of the city (transportation, streets, cafes, cinemas, beaches) sites of virtual worlds (television, internet, films, and games). Foucault, through all, categorizes the space into two main types: utopias and heterotopias in relation to all the other sites ‘but in such a way to suspect, neutralize, or invert the set of relations that they happen to designate, mirror, or reflect.’

“The word utopia or outopia was derived from Greek and means ‘no (or not) place’ (u or ou, no, not; topos, place) and as a literary genre, utopia refers to works that describe an imaginary society in some detail.”(Claeys, 1999) Utopias with its imaginary aspect can be accepted as written dreams of the society. As they are the translation elements of social dreaming of the society, their existence have been linked to the spatial. Foucault, when he puts utopia into his argument insisted on the unreality of the spatial. Based on the notion of utopia, he then developed the term *heterotopia*, which ‘a sort of mixed, joint experience, which would be mirror’. The mirror is in foucauldian approach, can be both a utopia and a heterotopia. It is an utopia as means of its ‘placeless place’. ‘In the mirror, I see myself there where I am not, in an unreal, *virtual space* that opens up behind the surface’, but mirror is a heterotopia as well, in its materiality and surface that is real and tangible (Foucault, 242). Analogically, *virtual space*, within its agencies (photography, cinema, video, simulation, local and global networks, internet) is an utopia with its unreal or apparently real status and a heterotopia as well, frames that they are presented (television, computer screen, cinema screen, head-mounted displays). Supposing that virtual reality as an utopia, and utopia as a social dreaming, virtuality can be considered as a social dreaming process as well. Within the enormous growth of the networks, internet applications; web-sites, forums, personal web pages of virtual space, a new kind of social dreaming, or in other words utopia, has been emerged; digital democracy.

The internet serves as both a one-way and a two-way network. Much of its use for people to access documents and other information (text, audio, videos) in ways which are, in concept, little more than sophisticated developments of the use of earlier technologies. Even so, much of this information is in some way ‘official’ in nature -for example, from governmental departments, or commercial, or other established organizations- and so it is also obtainable by means of other than the internet. The ‘unofficial’ material on the internet includes personal web pages and small organizations’ web sites, and this is the sort of information unlikely to be found on news-stands, and is also not likely to make its way on to radio or TV channel or into newspaper columns. (Lax, 2000)

The official and unofficial expansion of the information in virtual space draws an optimistic view of democracy, but the number of people accessing this information in most of the world is still been restricted to the wealthy and educated people.¹ Even if access to the internet is available, reaching the vague information in a world of two billion of web pages is another contradictory issue in the democracy utopia. Anyway, the internet, through bandwidth expansions and cultural adaptations, has been one of the most enhancing supplementary of the virtual utopia.

The content of dreams which have been translated into language by Freud via psychoanalysis, are highly related to the sexuality. Freud had written the 'Interpretation of Dreams' while analyzing his own dreams. Freud's revolutionary contribution to dreams depend on his claim that dreams have meanings, are linked to the daily life's experiences, and reveal the sexual boundaries of the every day life in an unreal space with a symbolic visual and textual language. "... Objects which have a long form like sticks, tree bodies, umbrellas can depict the male sexual organ; penis, or sharp weapons like knife, dagger, sword... Boxes, suitcases, chest, wardrobes, oven, ships, every kind of cups symbolizes the uterus, and ladders...up to and down to the stairs are representation of the sexual action..."(Breger,pp.187) According to the Freud, dreams are in the 'primary process' of the dreamer and related to the phantasy, visual imagination and unconscious. Today, dreams have found phantasmatic and visual imagination channels to convey their strongest matter-sexuality and pleasure- within the videos, compact discs and websites: pornography. Dreams, where the restricted sexual desire and pleasure revealed, have been translated into an 'apparently' physical environment with an industrial approach. "...Wendy McElroy's value-neutral definition: 'Pornography is the explicit artistic depictions of men and/or women as sexual beings'"(Flippo,pp.123). The 'artistic' depiction of men and/or women as sexual beings has been acting without any metaphors or symbols, as the term 'hard-core' implies clearly. Pornography, however, different from dreams, belongs to the 'secondary process', and so the consciousness, reality and language. Dreams act as repressions whereas the pornography expressions. Reality at this point metamorphoses and becomes virtual. This metamorphose is not very strong if the output of the pornography; the orgasm or sexual satisfaction, considered. Orgasm is real in itself whether it is at the end of a real sexual act or a porno film. Wet dreams, has got an intrinsic place at this point.

¹ Even in England, around %36 of households had a computer (Svennevig and Morrison, 2000)

A wet dream is also known as a nocturnal emission. Nocturnal means ‘at night’ and emission means ‘discharge’. This makes sense because a wet dream is when semen (the fluid containing sperm) is discharged from the penis during ejaculation while a guy is asleep. Usually wet dreams occur during a dream that has sexual images.²

In wet dreams, despite the dreamer experiences sexual satisfaction in his -unconscious-dreaming, orgasm and its output-semen- is realized in his real world. Pornography makes wet dreams apparently real and apart from the unconscious.

Virtual reality, within its agencies, from photography to head-mounted displays, or from internet to hologram interfaces, has the capacity to carry out the dreaming process or dream itself -as an output- as means of the physical body space relations and psychological – psychoanalytical- relations with the human beings.

CHAPTER 3

Project Insights

Virtual University

The project’s context is based upon a virtual university creation. Virtual university or the digital university has been entered to the education terminology in the information age. From a definitive approach virtual university is ‘an institution which is involved as a direct provider of learning opportunities to students and is using information and communication technologies to deliver its programs and courses and provide tuition support.’ (Ryan, pp.2). Education from primary school to university level should have experience a shift in the approach of teaching and learning. But at the university level it becomes a very critical issue. University as its name implies offers a universality and interchangeability within its concept. And in the era of World Wide Web, where there is no more physical boundaries, the university concept experiences a shift in the mindset and a convergence among its roots. A state of mind which believes to face-to-face learning changes in to more flexible learning-teaching styles where the importance is not the physical entity, rather it proposes alternative education channels like distance education, web based learning, real-time vide conferencing,

² http://kidshealth.org/teen/sexual_health/guys/wet_dreams.html

virtual laboratories, etc. These channels compared with older education tools offers a more dynamic way of learning which is based on a nonlinear understanding that gives an active role to the participants. They have the opportunity to become the part and developer of the learning process.

Experience Driven Design

Design thinking has been transformed into a more experienced driven path within the last decade especially when considering the technological advances and interface design. The story begins with the product design by the industrial revolution and in mechanical age the focus was the product itself. However, it becomes inadequate to consider the product itself in the process of design. The next phase of transformation was the user-centered design. The design process had become to involve the user which does not adequate as well. Moreover design process should depend on the experience which covers product, user and the action. The designer acts as a script writer, creates the scenario of the product and should consider the body space relations and the micro and macro environment(s) of the product. John Dewey in his Art as Experience gives new dimensions about the experience issue. He asserts that:

Because of continuous merging, there are no holes, mechanical junctions, and dead centers when we have an experience. There are pauses, places of rest, but they punctuate and define the quality of movement. They sum up what has been undergone and prevent its dissipation and idle evaporation. Continued acceleration is breathless and prevents parts from gaining distinction.(Dewey,pp.38).

CONCLUSION

Aura and Distance

The way we perceive, analyze and comment on the interface and interaction issues in short lead us to the aura and distance. As an experience dominant process, interfacial relation between user, designer and the computer program has had to need an aura definition. With respect to aura two important scholars on the visuality matters, Paul Virilio and W. Benjamin bring parallel readings regarding the distance. For Benjamin and Virilio, distance guaranteed by vision preserves the aura of an object, its position in the world, while the desire "to brings things 'closer' " destroys

objects' relations to each other, ultimately obliterating the material order altogether and rendering the notions of distance and space meaningless (Manovich,2002). This paradoxical manner of distance via aura can be explained with the Virilio's telepresence notion. Telepresence, differs from Renaissance perspective's distance perception, destroys the body, space and time interrelations that makes the user 'real' in various places at the meantime. There is no need to terrestrial horizon anymore. It has been destroyed with the evolution of the World Wide Web, and any other internet based networks. Internet, distributed by the screen-based virtual realities has been igniting force to transform the so-called 'real world'. Electronic screen, via telepresence, the user can be "present" in several places. Thus, s/he can manipulate on material reality over physical distance in real time. (Manovich, 2002)

Transforming body space relationship regarding the mutable time perception is the key consideration of the Interact-ed Project from the beginning. Considering the body & space relation as subject & object relation, there has been psychoanalytical and semiotic readings (pleasure and dreams sections) which direct the project's way in to a more *emotionally driven design* path. Questioning the signifying networks between the subject and the object with respect to the environment gives the Interact-ed an experience based design conception. *Experience driven design* gives cues of the importance of the *interaction design* in the future. Moreover, interaction design will become a converging area where the subject (human), object (machine) and their spatial entity (environments) intertwine. These intertwining point out the nature of reality; extending, evolving and surprising.

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APPENDIX A
INTERACT-ED PROJECT EXHIBITION

APPENDIX B
PROJECT CDROM

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