To my parents
Güngör and Ender
and my sister
Günder

THE FLUID EXPERIENCE OF SPACE: PHYSICAL BODY IN

VIRTUAL SPACES OVER AN ANALYSIS OF <u>OSMOSE</u>

A THESIS

SUBMITTED TO THE DEPARTMENT OF

GRAPHIC DESIGN

AND THE INSTITUTE OF FINE ARTS

OF BİLKENT UNIVERSITY

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

MASTER OF FINE ARTS

By

Güzden Varinlioğlu

June, 2003

I certify that I have read this thesis and that in my opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Fine Arts.

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Asst. Prof. Dr. John Robert Groch (Advisor)

I certify that I have read this thesis and that in my opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Fine Arts.

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Asst. Prof. Andreas Treske

I certify that I have read this thesis and that in my opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Fine Arts.

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Asst. Prof. Dr. Asuman Suner

Approved by the Institute of Fine-Arts

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Prof. Dr. Bülent Özgüç

ABSTRACT

THE FLUID EXPERIENCE OF SPACE: PHYSICAL BODY IN VIRTUAL SPACES OVER AN ANALYSIS OF <u>OSMOSE</u>

Güzden Varinlioğlu
M.F.A. in Graphic Design
Supervisor: Assist. Prof. John Robert Groch
June 2003

By the naissance of virtual reality, the body is repressed and transformed into representation in technological virtuality, and the cyberspace has defined as the space experienced by the mind that is separated from the body. By this transformation to 'simulacra', this dystopian world of Neuromancer has become the model for future works. Whereas by the help of Char Davies' <u>Osmose</u> using Virtual Reality technology, the boundaries of technological virtuality is expanded in such a way to include the de-technologized virtuality: the virtuality of nature. By the use of virtual reality technology, Davies's interpretation to cyberspace is transgressive in terms of body and space notion. Starting from the definition virtuality of nature, my aim is to analyze the virtuality of water, that will help the thesis to criticize the technology per se and proposes 'other' space and body relation in this newly created environment: water space. By the direct 'contact' of the body, water space become united with the element, dissolving the boundaries of object/subject, inside/outside splits. Drawing parallel lines between water and imagination, virtuality and freedom, this thesis proposes a look at the cyberspace notion through water.

Keywords: 'Osmose', virtuality, body, space, fluidity, water, cyberspace

ÖZET

AKIŞKAN MEKANDA DENEYİM: FİZİKSEL BEDENİN SANAL MEKANDA <u>OSMOSE</u> ÜZERİNDEN İNCELENMESİ

Güzden Varinlioğlu
Grafik Tasarım Bölümü
Yüksek Lisans
Tez Yöneticisi: Yar. Doç. Dr. John Robert Groch
Haziran 2003

Teknolojinin getirdiği bir olgu olarak algılanan siber mekan, bedenin göstergeye dönüştürülmesi üzerine, akıl tarafından deneyimlenen bir mekana dönüşür. Bu 'simulacra' olan dönüşümde, Neuromancer da tanımlanan karamsar mekan, sanallık kavramı ile birleşir. Char Davies'in <u>Osmose</u> adlı sanal gerçeklik teknolojisi kullanılarak, sanal mekanın sınırlarını genişleterek bedeni bir bütün olarak içine alarak, sanallık kavramının tekrar yapılanmasına yol açar. Bu yaklaşım ile beden ve mekan açısından doğa kavramı tekrar şekillenerek, akışkan mekan kavramını gündeme getirir. Bu akışkan mekan kavramından yola çıkarak su mekanının incelenmesi sadece bu eseri anlamaya yardımcı olmaktan öte, teknolojinin bedenle ilişkisini tekrar kurmaya yardımcı olan 'dokunma' kavramını gündeme getiriyor. Akışkanlık kavramı ile birlikte nesne/obje, iç/dış kavramları birbiri içinde eriyerek, farklı bir mekan tanımını ortaya koyar. Bu çalışma, su ile hayal, sanallık ile özgürlük tanımlarının paralelliğinden yola çıkarak, siber mekanına sudan bir bakış ortaya koyar.

Anahtar Sözcükler: 'Osmose', sanallık, beden, mekan, akışkanlık, su, siber mekan

ACKNOWLEDGEMENTS

I would like to thank to my advisor John Robert Groch for his guidance and support in the development of this study and also for his friendly attitude towards me. It has been a pleasure to be his student and to work with him. I am also indebted to Gülsüm Nalbantoğlu, Asuman Suner, and Andreas Treske for the courses they offered and for their kind interest to my thesis.

I owe special thanks to METU- Subaqua Society (ODTÜ-SAT) that helped me to think diving other than an activity but a mirror to look through. I thank to my instructors, students and friends, especially my friends from Cave Diving and Research Group (madag), for their precious friendship.

I owe special thanks to Nur, Çağlar and Burcu for extending me their invaluable friendship and support throughout the graduate years. And lots of thanks go to dear friend Ayça, without whose friendship this year of thesis would be unbearable. I thank to Onur, for the patience, encouragement and support that he offered in the hardest times of my study, however my gratitude is not only for those. I am grateful to him above all for his existence.

And last but not least I thank to my family to whom I owe what I have.

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1. INTRODUCTION

> "A man who is familiar with the
> deep sea could never be like
> other men again."
> Diolé

1.1 The Aim of the Study

This thesis proposes a critical discussion of the notion of virtual space in Western thought that derives from an analysis of Char Davies's artwork of virtual reality technology. Char Davies, originally a painter, is an artist using the medium of immersive virtual space since 1995 in order to convey the immersive virtual environment. She is the designer of two virtual reality technology: <u>Ephémère</u> and <u>Osmose</u>.

Starting from the analogy of water space and cyberspace, I propose that water space, carrying different characteristics of the land experience, may be accepted as an instrument to comprehend the virtual space notion. By the direct 'contact' of the body, water space become united with the element, dissolving the boundaries of object/subject, inside/outside splits. Drawing parallel lines between water and imagination, virtuality and freedom, this thesis proposes a look at the cyberspace notion through water.

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Basic oppositions of dualist logic such as body/mind, inside/outside, technology/nature, and organic/inorganic are born on to and recreated in Western philosophy. Parallel to these discussions, the technological notion of virtual space has its own image of physicality and virtuality that is molded by these binary oppositions. However common in contemporary discussions these oppositions are, in Char Davies' Osmose, they are non-existent due to the use of the body within the space and of technology to be immersed in nature. The underlying aim here at stake, is the definitions of 'other' spaces, experienced by the physical body. Another possibility of virtuality is found in nature or more exactly in water. Thus, two main spatial concepts of virtuality that will be discussed are the cyberspace and water space.

There has been a tendency to draw parallels between virtuality and technology, or between the cyberspace and information space of the computer, ever since William Gibson published his cyberpunk novel Neuromancer. In this novel of cyberpunk genre, Gibson coined the term 'cyberspace' and predicted many of the physical, cultural, and social changes associated with the information technology. In Gibsonian terms, cyberspace was a "consensual hallucination," a "physically inhabitable, electronically generated alternate reality" (Gibson, 51). It was inhabited by refigured human 'persons' separated from their physical bodies which were parked in 'normal' space. Stone refers to the way in which the term and concept he coined followed by the enormously expanded discussion of cyberspace after the publication of his book in 1984. She claims "Cyberspace is not just

simulations, or military experimentation, or computer-supported work, but a space of pure communication, the free market of exotic exchange" (1995: 34). Thus, when the central character Case 'jacks in' to cyberspace, his 'self' is entering entirely new territory, a new 'space.'

The other possibility that people would get jacked into the cyberspace, that the cyberspace has a spatial configuration though as virtual as it can be exposes an escape from the reality. This idea of an escape would relieve us off our places in reality, and would allow us to step into an imaginary space. Yet this kind of cyberspace is defined again by Gibson, in both Neuromancer, where Case, the protagonist, connects his nerves to the nervous system of another character, in order to have access to her thoughts, to see through her eyes and to hear through her ears. This concept of escape actually suggests a debate of real spaces versus computer-generated cyberspace; or to put it more effectively: Real spaces versus the matrix of the computer system. One important point is that this differentiation of real and virtual spaces forms a great challenge for the way we perceive; offers us a new mode of perception. However, how we are to make sense of this space remains a question.

Later with the publication of Neuromancer, the participants of the computer technology have learned to be replaced by body-representatives that exist in an imaginable space, 'cyberspace.' Gibson is regarded as a futurist in terms of predicting the social and cultural roles we can expect to play in the cyberspace-dominated realm of the future. This is where his work

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has contributed to discussion of cyber-communities, cyborgs, multiple personalities, and so on. He has influenced the work of Stone, Turkle, and Haraway. He has gone on to write a series of novels similar to Neuromancer, and allowed his concept of cyberspace to develop.

Blade Runner, by Ridley Scott, the cult science fiction movie made at the beginning of 1980s, opens up further questions about future communities. In the post-modern holocaust city of Blade Runner; seen through a dark filter of fog and rain, in the dark streets crowded with a mass of isolated individuals, people not only lose spatial dimension of actual life but also the effective means to communicate with each other. By the concept of globalization, the movie reduces the whole world into a single space, in which the spectator losses the sense of space.

The screening of Blade Runner, and publication of Neuromancer mostly accept cyberspace as a dystopian world reflecting the decay of the future communities. This created dystopian world alienates the identity from the self and the body from the mind. Thus the body is detached from the physical body, becoming a representation or more exactly a simulacra that has no relation to the physical reality. This approach not only repeats Cartesian dualism such as body/mind, physical/virtual, technological/natural,

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but also limits this new world of imagination. In this sense, carrying the 'old' constraints, the virtual world is mostly associated with the dystopian point.[1]

In our contemporary age, cyberspace mainly coincides with the computer-generated space. Computer technologies, cognitive thinking models, artificial environments became the everyday examples of virtuality. Thus, we may claim that the meaning of virtuality is mostly associated with its relation to technology. This approach, I call 'technological virtuality,' excludes the body and replaces it by the mind. Thus the physicality of virtuality is reduced to a spiritual level. As Baudrillard stated in <u>Simulation and Simulacra</u>, new definitions of reality and simulations are emerged, but this endangers the physical reality of the body, by replacing or sometimes transforming into a representation that has no relation to reality, i.e., simulacra.

Baudrillard says that signs that used to represent things are drained of their meaning forming the hyperreality. Possibilities opened up by new media technologies hold that culture no longer copies the real but produces it. This 'real' is an effect of television, computer screens, stereo headsets, Virtual Reality goggles, etc. There is no dialectic between image and reality, only signifying practices. Echoing Borges' famous maps story, he defines four orders of sign with respect to the relation with reality. The last step is that the

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[1] By contrast, cyberfeminists see the virtual world as the place away from patriarchal thought; cyberfeminism is defined as not being considered and considering oneself as woman-as-other in cyberspace, but to consider cyberspace as a place for woman.

signs become simulacra, meaning that they have no relation to reality, pure simulation (Baudrillard 2).

Furthermore, Sherry Turkle, in <u>Life on the Screen</u>, echoing Jean Baudrillard, talks about television as part of the postmodern 'culture of simulation,' where the identification with the simulated world of television is more common than that of the 'real' world. Turkle's work centers on psychological and sociological transformations of individuals occurred as a result of the new computer and communications age. She posits that as a result of this interaction, our very conception of how the world works is changing quite radically. A decade ago, people were just getting used to the idea that computers could project and extend a person's intellect; however today people are "embracing the notion that computers may extend an individual's physical space" (1995, 2). In other words, there is potentiality of virtual transformation that transgresses the physical formation of the individual.[2]

In "Cyberspace, Virtuality, and the Real," Elizabeth Grosz claims that cyberspace has been considered a 'parallel' universe to our own, "generated and sustained by global communications networks and computers linking

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[2] Donna Haraway, prominent cultural theorist, uses the metaphor of 'cyborg' to discuss the relationships of science, technology and socialist-feminist. She introduces the term 'cyborg,' cybernetic organism, integration of human and machine, where the biological and mechanical side becomes so inextricably intertwined that they can't be disintegrated. She proposes cyberspace to become a new terrain for the feminine. This brings the question of human versus machine, which reinforces the mind versus body that is a strong gender coded male/female dualism. What is discussed here is that this is a new world in which we can represent our bodies with a great degree of flexibility.

disparate physical spaces and individuals through a shared virtual space, the space of linked, networked computers and their users" (1997: 109). Starting from this analogy of actual life and virtual life, she assumes the possibility is born to create new identities, and new relations, in short new worlds in cyberspace. The virtual is the space of emergence of the new, the unthought, and the unrealized that redoubles a world parallels to our actual words. She claims, "In their nascent incompleteness, indeed in a form still more dream- or wraithlike than actual, these technologies are ripe, as it were, for various imaginary schemas, projected futures, dreams, hopes, and fears" (1997: 109).

In our contemporary age, virtuality is mostly associated with computer technologies, cognitive thinking models, artificial environments and often formed as a task to achieve, merely an activity of presenting something intangible, fictitious, and unreal, that is something 'unnatural' and absent from the so-called 'real' world. Indeed, the concept of virtuality has been with us from antiquity to our contemporary age. As stated by Grosz, "the concept of virtuality has been with us a remarkably long time. It is a coherent and functional idea already in Plato's writings, where both ideas and simulacra exist in some state of virtuality" (1997: 111). From Plato to Derrida, virtuality exists in forms of writing, imagination, etc. In this sense, why not looking at other possibilities of virtuality.

The specific inquest and contribution of this study is to approach the notion of virtual space in Western thinking within a framework that is based

on critiques of virtuality other than contemporary ones. Rather than analyzing the definitions of technological virtuality from a dystopian point of view, my aim is to explore an other important domain of meaning attached to virtuality: the fluidity. The foundation for my thesis is to be found in the selected works by Char Davies, secondary sources about her art-work; studies by Michael Novak on the fluidity of virtuality and those by Gaston Bachelard, about the virtuality of water space.

As stated by Hegel, "nature is the first standpoint from which man can gain freedom within himself" (90). Starting from his understanding of water, having various concepts related to its cultural positions, it is appropriate to state that ocean, namely the Pacific Ocean transgresses the meaning attached to actual life. Being at the edge of the world, the Rim is both frontier and door to the ocean. Thus Pacific is a new experience of space, in which people are liberated from the constraints of land life. Pacific is a carrier; it gives the sense of imagination.

Born onto and recreated by the Pacific Rim, the term 'oceanic feeling' is a feeling as a sensation of 'eternity,' a feeling of something limitless, unbounded or 'oceanic.' Defined similarly by Bachelard, water is the essential element of imagination. In Water and Dreams, Bachelard argues that "the imagination invents more than objects and dramas- it invents a new life, a new sprit; it opens eyes which hold new types of visions." He continues by saying: "the imagination will see only if it has 'visions' and will

have visions only if reveries educate it before experiences do, and if experiences follow as token of reveries" (1983, 16).

To some extend, Bachelardian definitions of water are explicitly covering the concept of water, but his categorizations of water do not clarify the term water space. In order to enlighten the concept of water space, having 'contact' with water element is essential. In this sense, the 'immersion' into the water helps us to dissolve his categorizations of clear, violent and dead waters. The very essential activities of swimming and diving, the very basic forms of 'immersion' allow the body to interact with the environment. Moreover, by breath and balance, the diver body becomes united with the element, dissolving the boundaries of object/subject, inside/outside. These adjectives and phenomenon have similar effects to Osmose, the virtual reality artwork of Char Davies. Thus, equating the water space with cyberspace, the aim of the thesis is to look at cyberspace through water.

This study focuses on the transgression of technological virtuality of the body and space. Cyberspace promises nothing but a new hallucinatory space in which to be, an expansion of the human fantasy upgraded to a new level. Particularly, virtual technology, allowing the contact of physical body to virtual space, is the tool to understand the cyberspace.

This study is not aimed to provide any answers to the question 'What is real, or what is virtual?' Instead, it aims to rethink the way we look to

virtuality: utopian, dream like, imaginary. In order to transgress the meaning of virtuality, placing the nature opposite to technology, mind to body, organic to inorganic, is a way to clarify the problem. As this study is not intended to accomplish a complete extensive analysis of thinking, it tries to complicate the concepts of technology versus nature, and body versus mind. This study does not mean to advance one particular conception as an opposite to the other. It aims to draw another path for thinking the virtuality that is with and within the technology and nature at the same time.

In so doing I propose to show that the relation of physical body to virtual space is developed through the use of virtual reality technology. This immersive virtual space is a newly phenomenon and this idea of maximum contact with the space will be the essential act. Drawing parallel lines between the virtual space of technology and of water space, my aim is to propose another spatial analysis of virtuality. My argument is that water space can be a means to develop the notion of cyberspace that is defines as fluid.

1.2. Chapters in Brief

The second chapter presents a critique of the contemporary accounts of virtuality in order to establish a theoretical framework to problematize the technology/nature opposition in digital culture. In contemporary discourses technological virtuality is described as a spiritual activity, while the notions of the virtual space and physical body are conceptualized as distinct entities.

It is claimed that this virtual space draws new boundaries, although it duplicates the already known Cartesian notions. The subject of space, body is present at a distance, and virtuality is nearly equated to a disembodied activity. This understanding takes its roots from the Cartesian dualism of body-mind, according to which body and mind are assumed to be completely isolated from each other and mutually exclusive. Contrary to common discussions on cyberspace, Marcos Novak's contribution is significant in terms of introducing the concept of 'fluidity' in both architectural and virtual spaces. In his article "Liquid Architecture in Cyberspace" Novak makes use of both scientific argumentations on the virtuality and general understanding of cyberspace by implementing the concept of fluidity. Very simply, for Novak, cyberspace indicates a shift from the classical space description towards the imaginary space. He argues that in cyberspace the freedom to change is rendered visible and the organizational structure of space is deconstructed. To an extent, Novak agrees with the phenomenological critiques of cyberspace, yet he is also involved in the task of the invention of "liquid cyberspace, liquid architecture, liquid cities" (250). He employs the concept 'fluid' for this task in order to explain the virtual dimension, as temporal, animistic, animated, and metamorphic. Novak closely associates fluidity with a notion of transgression. In Novak's conceptualization, cyberspace architecture, as opposed to ordinary architecture, brings forth freedom.

The third chapter discusses the roots of virtuality of nature space, more exactly in water space. How nature, precisely the water space that is associated with the utopian adjectives is associated with. It introduces the 'oceanic feeling' challenge to the Western tradition by mainly focusing on the framing processes in virtuality.

Although Bachelard's definition of water in <u>Water and Dreams</u> remains elemental in a sense, it remarkably unites the virtuality attributes with water. In her critical exploration of the technological representation of diving, Davies draws on Bachelard's arguments on the frame that she mainly develops in <u>Osmose</u>. According to Bachelard "water is truly the transitory element. It is the essential ontological metamorphosis between heaven and earth. A being dedicated to water is a being in flux" (1993, 6).

Echoing and contributing to the paradigm of fluid bodies in the Eastern thinking by Irigaray, the understanding of breath, <u>Osmose</u>, is analyzed in terms of breath and balance. Firstly the rareness of the manual control in <u>Osmose</u> can be understood as a response to the conventions of conventional virtual reality technology in which, acting and doing are the most common and privileged acts. Contrary to this convention, bodies occupy the space, to be immersed fully rather being a protease. Davies strikingly shifts the focus; she centralizes the body within breath and balance. Additionally, bodies in <u>Osmose</u> are aware of what are doing rather than thinking of using the hand-held interface devices. These devices reinforce a

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dominating position to the world in terms of "I'm doing this to that" (Davies qtd. in Gigliotti). They become integrated with the space rather the technology being prosthesis.

Although each chapter of the study seems to put emphasis on a specific critique of one of the oppositions counted above (the second chapter on technological virtuality opposition, the third chapter on the natural virtuality), indeed all of them were referred in each chapter as the problematic of each oppositional pair always slips into other ones.

2. VIRTUAL SPACE

In our contemporary age, virtuality is mostly associated with computer technologies, cognitive thinking models, artificial environments and often formed as a task to achieve, merely an activity of presenting something intangible, fictitious, and unreal, that is something 'unnatural' and absent from the so-called 'real' world. By the naissance of virtual reality, the body is repressed and transformed into representation in technological virtuality, and the cyberspace has defined as the space experienced by the mind that is separated from the body. By this transformation, this dystopian world of Neuromancer has become the model for future works. Whereas by the help of Char Davies' Osmose using Virtual Reality technology, the boundaries of technological virtuality is expanded in such a way to create the fluidity of cyberspace. By the use of virtual reality technology, Davies' interpretation to cyberspace is transgressive in terms of body and space notion. Starting from the definition fluid cyberspace, by Novak, my aim is to analyze the Osmose, that will help the thesis to criticize the technology per se and proposes 'other' space and body relation in this newly created environment. By the direct 'contact' of the body, water space become united with the element, dissolving the boundaries of object/subject, inside/outside splits.

2.1 On the Nature of Space

Space as defined by the human and as defining the human, gave the first signs to explain the notion of virtual space. It is necessary to define two key terms: body and space. Throughout the thesis, architecture is accepted as a tool to understand the space.

2.1.1 Space

The definition of space opens up a number of metaphysical questions related to the combined meaning of space versus time and space versus being. In this sense, one may start by looking at the answers of science and physics rather than merging into metaphysical phenomena. Michael Benedikt, in "Cyberspace: Some Proposals," claims that the existence and nature of space seems to be truly basic, fundamental. To define the essence of space, he assumes that the science may have a practical and empirical answer to this question related to physical reality. According to 'Euclidian Geometry' and 'Theory of General Relativity,' physical space "is not passive but dynamic, not simple but complex, not empty but full" (125). By referring to Benedikt's article, Francis Dyson adds to the scientific explanation by the 'Principle of Exclusion' whereby two identical objects cannot share the same place at the space at the same time. Dyson assumes that 'Principle of Maximal Exclusion' makes sure that a space will be designed that minimizes the violations of the Principle of Exclusion- that is, a space will be designed where objects have a place, a time, a trajectory of movement, etc. (35). From a phenomenological approach, space presents itself to the inhabitants in the freedom to move, in

other words, the freedom to change the location and identity in a continuous time. Setting aside the time and related movement definitions, she mostly focused on the 'being' as Benedikt does in his article "Cyberspace: Some Proposals." She quotes Benedikt's claim such as "cyberspace is more than a space: it is 'a place and a mode of being'" (Benedikt qtd. in Dyson, 36). She defines space by saying:

> As a central metaphor within the notion of being, 'space' provides a means of negotiating such a dilemma, having sufficient ambiguity to enable the discourse to drift between a cornucopia of real and mythic space, between for instance, the 'space of screen', the 'space of imagination', 'outer space', 'cosmic space', and literal, three dimensional 'space' (Dyson 28).

As Dyson quotes from Heidegger "the essence of modern technology is by no means anything technological;" dealing with "being of being human as much as the being of technology" (27). In popular discourse, she claims that the human and technological 'being' is articulated in cyberspace. Instead of creating a new being, the virtuality is used as an attribute to the concepts of 'reality' and 'space.' In order to discuss the definition of space, we must come back to the definition of being, as it covers long discussions in Western Metaphysics. Dyson claims that the power of 'space' lies in the possibilities it involves "immersion, habitation, 'being-there', phenomenal plenitude, unmediated presence" (28). According to Dyson, "without 'space' there can be no concept of presence within an environment, nor, more importantly, can there be the possibility for authenticity that 'being-in-the-world' allows" (28). Dyson says that:

> Cyberspace is established as an 'other' place to enact the deconstructed self: a self whose multiplicity and ambiguity is continually reinforced, as the body seems to increasingly inhabit the dematerialized world that technology creates (Dyson 31).

The space is where the human body inhabits and it is the space that defines the presence of the body in return. In cyberspace, the presence of is recreated. As such, cyberspace prompts humans to 'be' different.

2.1.2 Body

In <u>Space, Time and Perversion</u> Elizabeth Grosz discusses the theoretical investigations on the issue of the 'body.' In defining the body, she considers it a physical entity, that is to say, "a concrete, material, animate organization of flesh, organs, nerves and skeletal structure, which are given a unity, cohesiveness, and form through the psychical and social inscription of the body's surface" (1995: 104).

Theories of the body are particularly associated with the feminine that is the binary opposite of the male. Including the gender issues, Grosz's study has dealt with the preconceived separation between the body and the mind. She tries to demonstrate the role of the 'power' relationship between body and mind, which leads to the representation of the perfection of the mind by the 'male' body. In Western thought, the mind has been strongly connected with the eye, the organ of sight and the sense of vision: 'the mind's eye.' This suggests that the discourse is based on the mind rather than the body in defining the outer world. With the feminist theory, the approach of the 20th

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century based on Cartesian dichotomy focused on the restructuring of this duality.

> The formation of female body reconstructed again and again to make itself seen, but not felt .The formation of the body does not have a start or an end. It is a process of formation. It is not an entity. The female body changes as it interacts with the environment. It modifies itself through time and space. Although this may be visually observed, the way to understand it is through feeling it. Not simply in terms of empathetic, but to feel it in the metaphysical sense (Grosz: 1995, 56).

Grosz's notion of body draws parallel lines with Marcos Novak's notion of 'body in fluid space' in which he defines the 'fluid architecture' to go further in his interpretation of the notion of space. In "Fluid Architecture in Cyberspace," Novak assumes that "the mind is property of the body, and lives and dies with it" (227). In other words, the body is not only a container for the mind to live in, but is rather to live with it. Thus, the Cartesian dichotomy of concrete body, versus abstract mind is restructured in Novakian terms. He assumes that by the notion of virtual space, the transition from concrete to abstract is realized. During the conversion of concrete to abstract, he claims that the reality is converted to the 'reality of fiction', and "the mind affects what we perceive is real" (227). Thus the real reality does not exist, but as Novak claims "the new concreteness is not that of Truth, but of embodied fiction" (227).

In this world of fiction, the body is open to changes, changeable, liquid, and thus temporal. Novak concludes by saying: "Thus while we reassert the body, we grant it the freedom to change at whim, to become

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liquid" (227). In this definition of body, the Cartesian dualisms are non-existent, as the body is not associated by the static concreteness but rather, by the flexibility of the liquidness.

2.1.3 Architecture and Space

In "Cyberspace Some Proposals," Michael Benedikt proposes some definitions of architecture. Benedikt argues that space is "insubstantial and invisible, somehow there, and here, penetrating, and all around us." He continues by saying: "space, for most of us, hovers between ordinary, physical existence and something other. Thus it alternates in our minds between the analyzable and the absolutely given" (125).

Architecture is the expression of a society realized as meaningful space. Architecture can be defined as the making of a place by the ordering and definition of meaningful space, as developed in response to a need or program. It is also described as the expression of society or culture in spatial, experiential form. Both of these definitions describe architecture as a concept or idea that has both physical and virtual expressions. As an architect, Novak assumes that architecture, as a general term having virtual and physical adjectives, is the art and science of space, but most fundamentally the art of space (243). He claims, "a space modulated in a way that allows a subject to enter and inhabit it is called architecture" (243). Instead of defining the space, he concentrates on its perception. According to him, there are three fundamental requirements for the perception of space: reference,

delimitation, and modulation. If any one is absent, space is indistinguishable from nonspace, being from nothingness. He notes that in cyberspace, since all structure is programmable, all environments can be fluid, thus the artist or architect who designs the immersive digital habitats will be able to transcend the laws of the physical world. In cyberspace, architecture becomes a form of poetry. Novak concludes by saying:

> The transitory from real space to cyberspace, from prose to poetry, from fact to fiction, from static to dynamic, from passive to active, from the fixed in all its forms to the fluid in its ever changing countenance, is best understood by examining that human effort to combines science and art, the worldly and spiritual, the contingent and the permanent: architecture (242-243).

2.2 On the Nature of Cyberspace

This section will be structured around the definitions of key terms such as cyberspace and virtual reality technology as what these notions represent is highly open to debate and confusion. The definition multimedia seems to be confusing at this point as it strongly coincides with the cyberspace definition. As stated by Randall Packer and Ken Jordan, in Multimedia from Wagner to Virtual Reality, multimedia is supposed to be the new media of the twenty-first century, covering the World Wide Web, CD-ROMs, Virtual Reality arcade games, and interactive installations (Packer et al., xv). Thus multimedia aims to have an interaction with the users, whereas, Gibson's definition of cyberspace is situated in the imaginary world of Neuromancer, rather than reflecting the real information space defined within the category of multimedia. Although Gibsonian cyberspace is used in

popular language to describe both the information and imaginary virtual space, to stay close to the imaginary world of cyberspace seems appropriate in order to clarify the problem.

In "Cultures of Technological Embodiment", the contemporary writings on cyber culture have become known as utopian, dystopian and heterotopian possibilities (Featherstone et al., 1). Evaluating under the spatial concepts, the first expression, the 'utopian space' is an ideal and perfect place or state, where everyone lives in harmony and everything is for the best. Defined as a binary opposition, the space defined as dystopian is an imaginary space, where everything is bad. The common understanding of cyberspace, with whether dystopian or utopian possibilities attached to it, assumes that we are about to enter a new era determined by the technological developments. By the development of technology, post-bodies and post-human forms of existence are created. As stated by Mark Poster, these new bodies aim to have a more efficient control over the environment. Moreover, it is not just the making and remaking of the bodies, but the making and remaking of the worlds, which is crucial here (Featherstone et al., 2).

2.2.1 Cyberspace

Cyberspace may be classified as the Barlovian cyberspace, the virtual reality technology and Gibsonian cyberspace. Barlovian cyberspace refers to "the existing international networks of computers" (Featherstone at al., 5). In

this sense, such a simple form of cyberspace is slightly more than an extension of existing telephone systems, simply substituting voice with text and some icons. Covering both telephone and computer network systems, Barlovian cyberspace rely upon a limited range of human senses. Gibson defines cyberspace as:

> Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concept. A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind, clusters and constellations of data (51).

In Neuromancer, William Gibson coined the term cyberspace as a fictional world of imagination. It might be said that his definition of the term is rather imaginary as he invented it long before the computer technology has emerged as a new media. As quoted in "Cultures of Technological Embodiment," cyberspace refers to an information space in which data is configured in such a way as to give the operator the illusion of control, movement and access to information (Featherstone et al., 2). In Neuromancer, cyberspace is defined as a global network of information which Gibson calls 'the matrix,' which operators can 'jack-in' through 'trodes' via 'cyberspace desk.' When the operator is in the 'matrix,' he is capable of navigating in the 'city of data,' moving freely in the three dimensional space. In addition to the iconic representations of the cyberspace, there are some autonomous post-human artificial intelligences, which live in cyberspace.

In addition to these definitions, I might say that the Gibsonian cyberspace is a fictional world created in the genre of cyberpunk. For Allucquère Rosanne Stone, referring to the cyberpunk genre, the publication of <u>Neuromancer</u> "crystallized a new community, … provided for them the imaginal public sphere and refigured discursive community that established the grounding for the possibility of a new kind of social interaction" (1991, 95). Influenced by <u>Neuromancer,</u> the term 'cyberspace' is used to cover both information and virtual reality technology. In this sense, the specific use of cyberspace delimits the Gibsonian world, rather than being predetermined by the technological definitions.

2.2.2 Virtual Reality

The 'virtual reality' was first coined by Jaron Lanier and has recently been defined as "real or simulated environment in which the perceiver experiences telepresence" (Steuer qtd. in Featherstone at al., 5). As stated by Michael Heim, in the <u>Metaphysics of Virtual Reality</u>, "virtual reality pertains to convincing the participant that he or she is actually in another place, by substituting the normal sensory input received by the participant with information produced by the computer" (1993: 160). Featherstone and Burrows defines virtual reality technology as:

> A system which provides a realistic sense of being immersed in an environment. VR is a computer-generated visual, audible and tactile multi-media experience. Using stereo headphones, head-mounted stereo television goggles ('eyephones') able to simulate three-dimensions, wired gauntlets ('datagloves') and computerized clothing

('datasuits'), VR aims to surround the human body with
an artificial sensorium of sight, sound and touch (6).

Heim draws several factors used in virtual reality technology: artificial reality, the state of a single presence combining the 'user's full-body actions' and 'computer generated images;' interaction, the act of 'doing' in virtual space by the means of 'a mouse' traveling on a screen;' immersion, the 'donning' of a head-mounted display in order to view the three dimensional space; networked environment, the network system that can be shared by several users at the same time; and telepresence, the feeling of being present in the virtual world by the help of robotic machines' effect. The virtual world or virtual environment is defined as "as scene or an experience with which a participant can interact by using computer-controlled out-output devices" (1993: 160-161). Heim argues that virtual worlds mostly attempt to mimic the physical reality, but are essentially attached to physical reality. In other words, he states that cyberspace contains various kinds of virtual worlds.

Gibson wrote Neuromancer without much knowledge of the contemporary reality of computing technology. Gibsonian cyberspace is mostly understood as the imaginary world of virtuality. I prefer to treat 'cyberspace' as a generic term and 'virtual reality' as one important example of it. As Heim stated in "The Design of Virtual Reality," after discussions on the difference of virtual reality and virtual environment and virtual world, Lanier's definition remained the most prominent. Heim's definitions outline the general discussions about the virtual reality technology although it seems rather too broad to go through.

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2.3 Fluid Experience in Virtual Space

In the light of the previous definitions on the nature of space and cyberspace, it is appropriate to investigate cyberspace partially under the concept of fluidity. It is believed that actual space embeds solid, an unbendable border that is defined as Cartesian space, such as empty, abstract, and xyz space. Architecture where living activity is most intense might be accepted as an application of Cartesian space to human experience. As stated in "Liquid Architecture in Cyberspace," Marcos Novak's contribution to cyberspace definition is considerable in terms of defining the spatial understanding of virtuality. Used both in literal and metaphorical sense, 'fluidity,' facilitates the clarification the term 'cyberspace.' In that sense, Novak's ideas act as a conjunction between architecture as science and the arts of space and cyberspace. Novak then goes on to describe the 'liquid architecture' that defines the fluidity for the inhabitant:

> Liquid architecture is an architecture that breathes, pulses, leaps as one form and lands as another. Liquid architecture is an architecture whose form is contingent on the interests of the beholder, it is an architecture that opens to welcome me and closes to defend me, it is an architecture without doors and hallways, where the next room is always where I need it to be and what I need it to be (250).

Novak introduces the concept of 'liquid architecture,' as a fluid, imaginary landscape that exists only in the digital domain. Novak suggests a type of architecture "liberated from the expectations of logic, perspective, and the laws of gravity; one does not obey the rules to the rational constraints of Euclidian Geometry" (251). By such definition, he differentiates virtual

architecture form ordinary architecture. Starting from and combining Gibsonian cyberspace with architectural space, Novak goes further in the definition of liquid architecture. He states that cyberspace is a modulated space, thus an architectural space. In the following pages, he concludes his spatial analysis by his renowned statement: "Cyberspace is architecture; cyberspace has an architecture; and cyberspace contains architecture" (226).

2.3.1 Fluid Architecture

If we refer back to the history of architecture, it is apparent that virtuality in architecture is not a new phenomenon. At the beginning of the twentieth century, Visionary Architecture has emerged as a new school, that differs from ordinary architecture, "like prose differs from poetry, like earth differs from water: beauty, awe, structure, enormous weight, lightness, expense, economy, detail, complexity, universality, and uniqueness" (Novak, 244). Visionary architecture is called theoretical architecture, as architects are purposefully designing non-realizable projects by the resource of their time. By these imaginary projects, the architects of this time were beyond the boundaries of ordinary architecture. Transgressing the meaning of architecture, visionary architects were using their imagination; Novak argues that "man's head, prime shelter of reason, is both home and dungeon for the imagination" (245). As quoted by Novak, George Bataille claims "man will escape his head as a convict escapes his prison" (245).

Starting from Sant'Elia and Marinetti's futuristic argument, Novak assumes that architecture has lost the sense of the monumental, of the heavy, of the static; it enriched sensibility by "taste for the light, the practical, the ephemeral" (246). The Futuristic idea, which was emerged in the beginning of twentieth century, argues that speed, temporary is to be placed instead of static ordinariness. Although the lightness is achieved within the limits of ordinary architecture, Bruno Taut claimed that architecture should hurry for the transparent, clear, "fluid, graceful, angular, sparkling, flashing, and light" (247). Setting aside the futuristic approach of Sant'Elia and Marinetti's argument, Lebbeus Woods, the very important contemporary 'anarchitect' introduced the 'experimental architecture,' even an 'anti-gravity architecture,' that is again well ahead of our physical technologies (247). As stated by Novak, "architecture has nevertheless attempted to fly in dreams and projects follies and cathedrals" but the art and architecture of space always attempted to fulfill the imagination (248).

Novak assumes that to refine the definition of liquid architecture, the key element is the space of art. The Russian painter and designer, and the most important pioneer of abstract art, namely Malevich's notion of 'a world beyond gravity, against gravity' is a way to understand the imaginary space that is beyond the limits of thought. The cosmic or mythical nature is expressed through the artwork.

These overlapping and sometimes disjointing meaning or definitions are not powerless but they explain the fluidity of cyberspace in a better manner. Despite these historical attempts to transgress the constraints of ordinary architecture, they were entrapped in the physicality of architecture. As stated by Novak, by the naissance of virtual architecture, "for the first time in history the architect is called upon to design not the object but the principles by which the object is generated and varied in time" (251). The new principles in virtuality bring the freedom that is defined as 'fluid.'

Novak uses the term liquid to mean "animistic, animated, metamorphic, as well as crossing categorical boundaries applying the cognitively supercharged operations of poetic thinking" (250). According to Novak, animism means that the entities have a sprit; animation means that they have the ability to change in location and in time, and metamorphosis means the chance of one aspect continuously or discontinuously. Novak defines the fluid architecture as the 'symphony of space' that never loops and continues to develop in it self. Liquid architecture does not have a structure but has a continuum of 'edifices,' smoothly or rhythmically evolving in both space and time. The elements used in this architecture are not solid realistic elements but rather abstract elements with fluctuating relations.

In cyberspace, most of the virtual models tend to mimic the architecture of the physical of world, recognizing and responding to its constraints. Few examples of virtual architecture respond to the constraints

and context of the virtual realm. Those that do are often found to be disorienting and difficult to navigate through. In defining the fluidity, Novak refers to its literal meaning. He claims that the new concept of space is developed by the time or timelessness. The reality that is strongly attached to the space and time becomes unstable, and fluctuating while the space and time become discontinuous.

2.3.2 Fluid Cyberspace

In his article "Liquid Architectures in Cyberspace," Novak starts from Gibsonian definition of cyberspace analyzing its spatial configuration. Before developing his theory of 'fluidity,' Novak provides basic definition of cyberspace as "a habitat for imagination, a habitat for the imagination." He states "cyberspace is the place where conscious dreaming meets subconscious dreaming, a landscape of rational magic, of mystical reason, the locus and triumph of poetry over poetry, of 'it-can-be-so' over 'it-should-be-so'" (226). Starting from the concepts of imagination and dream, his vision of cyberspace might be considered utopian, since he defines it as "a habitat for imagination." Cyberspace, as argued by Novak is "a dream of escape from a mortal plane even as it is an acknowledge of that plane" (241). Bringing a new approach to the body/mind dualism, he claims:

> Our reality outside cyberspace is the metaphysical plane of cyberspace, that to the body in cyberspace we are the mind, the preexisting soul. By a strange reversal of our cultural expectations, however, it is the body in cyberspace that is immortal, while the animating soul, housed in a body outside cyberspace, faces mortality (241).

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As discussed earlier, cyberspace is defined as a place of information (Featherstone et al., 2). Novak argues that to navigate in this information system is an architectural problem as it defines space. Because the space is questioned here, the body within it is significant in terms of defining the space. The common critics of cyberspace are based on the transformation of the body into a representation that is mainly the replacement of the body by the mind. Thus the imaginary character of the cyberspace is merely achieved by the exclusion of the body but the inclusion of the mind. In that respect Novak argues that by the development of the technological devices, the body is allowed to enter the cyberspace but that inclusion, thus the most ancient dream of human being is achieved: "the magic, or desire to will the world of action" (226). This magic of leaving the physical constraints creates "an immense fascination" that is not the fascination of the new but that of the dreams (228). The cyberspace is fascinating but the truth lying beneath is not only the newness of the cyberspace but rather the acquaintance to us.

Novak states that what he is really interested in is not the physical aspects related to the technology but rather the poetics of space. He claims that cyberspace is similar to poetry in term of using the magic, thus cyberspace is the technology of magic. If we think of earliest forms of writing and define the virtuality of writing, and poetry is the example as it includes the dreams. Novak's attempt to equate poetry to virtuality and the prose to reality can be reconsidered in Derridean terms. Novak claims, "poetics is liquid language;" thus, he equates liquidity to variation and

articulation (229). This fluidity may be thought in terms of the writing of cyberspace that is autonomous, when compared to academic writing that is rigid and ordered as opposed to fluid and random. Novak's poetic language helps him to explain the fluidity that is strongly used in literal terms. Novak focuses on the notion of 'fluidity of cyberspace' as a crucial element in the spatiality:

> Sometimes I wonder out of my world into the larger spaces. I travel only pathways mostly empty. The passages I traverse are not still, however. Along their boundaries processes sparkle, information flows like water on a moist wall, schools of data swim around curiosity, and lattices of fact and fiction tangle and untangle. The ones I touch open out into texts and images and places (Novak 230).

Novak claims that cyberspaces as perceived spaces are not actual spaces. Cyberspace is an invent world, as a world it requires "'physics', 'subjects' and 'objects', 'processes', a full ecology" (234). But this invented world changes the notions: "the selves become multiple, physics become variable, cognition becomes extensible." He defines fluidity of cyberspace by saying:

> X,y,z, roll, pitch, jaw, color, material, size, all the parameters that define my point in space are indices into dimensions of attribute space. My motion makes my environment melt from one image to another, and my navigation becomes a knowledge dance (235).

The continuity of vision, which is almost not perceivable in actual space, is achieved in cyber world. Thus, a transition between two different cyberspaces is smooth if not fluid. Two different spaces can form one another regardless of observer's motion and/or perception. The most basic law of

physical world that is "there exists no two identical objects such that they should occupy different spaces if every parameter mentioned above are same" is eliminated in cyber world. Novak supports this idea by saying: "in physical space two objects cannot occupy the same space at the same time. In cyberspace such a restriction is not strictly necessary" (239). What seems most likely to occur is that entities will behave as 'ghosts' or souls. Thus the cyberspace defined by Novak is fluid, blurring the boundaries of the actual space.

2.4 Char Davies and Fluidity

In the era of information technology, after the initial steps taken towards the interaction of people who are physically separated from the cyberspace, came the virtual reality technology that has emerged as the new possibility to unite the physical body to the virtual space. As defined by Featherstone and Burrows, virtual reality technology, or VR "provides the operator with a high degree of vividness and total immersion in the artificial environment" (3).

Without going through the history of virtual reality technology, my aim is to look at the chronological development of the 'immersive virtual space' concept (3). To start with, the virtual reality technology has the potential to brings us to another space:

> The fantasy of being transported into another world, to be
> taken wholly into an imaginary realm, is a primal desire.

> With computer-based multimedia, encounters with immersive, virtual worlds will soon become commonplace. Virtual reality, after all, is a logical extension of the integration of the arts. It is also an ideal environment for applying our knowledge of human-computer interactivity (Packer et al., xxii).

In "Overture" Packer and Jordan claim that Wagner sees the roots of integration of different disciplines from the concept of the *Gesamtkunstwerk* or Total Artwork, aiming the union of all arts. Thus, twentieth-century artists have tried to heighten the viewer's experience of art by integrating traditionally separate disciplines into single works. By the invention of technological devices, artists became increasingly interested in integrating technology into their work.

In the history of art, the paradigm of immersion is not limited to virtual reality technology. In architectural history, Wagner's design of a theater placed the audience in a circular plan as in the case of Greek amphitheaters. In 1950, similarly Martin Heilig proposed 'cinema of the future' that would surround the audience, as the space of virtuality surround them to let them experience the immersion. To some extent, this chapter is concentrated on the virtual reality technology.

No doubt the very first paradigm of the virtual environment is the prehistoric cave painting, as in Lascaux cave, in the Southern France. Not only they are the representation of the human expression, but also the very first sign of the virtual environment, as they are planned in the darkness of the caves. As Joseph Campbell describes, "these magical spots occur far from

the natural entrances of the grottos, deep with the dark, wandering chill corridors and vast chambers, so that before reaching them one has to experience the full force of the mystery of the cave itself" (Packer at al. xxiii).

To start with the development of computer based virtuality, the first scientist to think seriously of the potential of computer for personal usage is Vannevar Bush who defined the computer as "a future device for individual use, which is a sort of mechanized private file and library" (Bush qtd. in Packer at al., xvii). He claimed that the information technology could enhance the individual's capability for creative thought.

In "The Ultimate Display," Ivan Sutherland may be accepted as the first scientist to reveal the thought of bringing together the computer and the design, construction, navigation, and habitation of virtual worlds. Highlighting the fully realization of three-dimensional environment, he conceived an interactive system that goes beyond the conventional tools such as keyboard, joystick, etc. In that sense, we may say that his ideas lead to the first steps of head-mounted display, in terms of representing the reality of the 3-D environment. He proposed simply the 'looking glass' allowing the construction of entirely realistic three-dimensional, computer controlled, virtual worlds. Sutherland claims, "The virtual world display would be a room within which the computer controls the existence of the matter" (256). His thought is significant in order to include all the senses in the virtual

environment. He claims, "no one seriously proposes computer displays of smell, or taste" but the computer has a little ability to produce meaningful sounds (255). Cyberspace itself is really an extension of Sutherland's original concept of a form of display that supplies information to all the human senses in an interactive environment.

In "Virtual Interface Environments," Scott Fisher proposed an interface that would engage all the senses, leading the viewer into a realm of full sensory immersion. In terms of using 'datagloves,' he expected the navigator to grasp virtual objects in cyberspace. As Fisher wrote in his article "with full body trucking capability, it would also be possible for users to be represented in virtual space by life-size virtual representations of themselves in whatever form they choose" (260). This multisensory interaction with cybernetic devices created a virtual experience that he defines as 'telepresence', 'a technology that would allow remotely situated operators to receive enough sensory feedback to feel like they are at a remote location and are able to do different kinds of tasks" (261). Fisher defines the cyberspace as "the projection of the self into a remote location or virtual world" (258).

As a significant paradigm, CAVE (Cave Automatic Virtual Environment) created by Daniel and Thomas DeFanti is virtual reality technology artwork, in which 'dwellers,' do not wear helmets to experience virtual reality. Helmets and other multisensory devices are supposed to limit their view of and mobility in the real world. Instead, participants in the

CAVE are surrounded by an immersive, digital 'cave painting' –which brings the evolution of immersion full circle, back to the prehistoric caves of Lascaux, and humankind's earliest efforts at personal expression.

2.4.1 <u>Osmose</u>

Char Davies created two virtual reality technology environments: <u>Osmose</u> and <u>Ephémère</u>. The former is realized in 1995 and the subsequent in 1998. She defines <u>Osmose</u> by saying:

> Osmose is an immersive interactive virtual-reality environment installation with 3D computer graphics and interactive 3D sound, a head-mounted display and real-time motion tracking based on breathing and balance.

The very first steps in <u>Osmose</u> start by the donning of the head-mounted display and the motion-tracking vest to the 'immersant,' the participant of the virtual environment, <u>Osmose</u>. The individual 'immersant' experiences the journey by himself, whereas the public installation of Osmose includes "large-scale stereoscopic video and audio projection of imagery and sound transmitted in real-time" from the viewpoint of the individual in immersion. The audience, wearing polarizing glasses, observes each immersive journey displayed by the help of the projection.

After donning the head-mounted display and motion-tracking vest, the 'immersant' navigates in this virtual environment. The initial virtual space experienced is a three-dimensional Grid, which serves as a point of reference. After the first breaths of the immersant, the Grid surrenders to a clearing in a

forest. The 'immersant' body defines the subsequent navigation in this virtual space by the help of his breath and balance. Inhaling and exhaling define a vertical movement, whereas leaning forward or backward defines a horizontal movement.

The world-spaces in Osmose are basically the metaphorical aspects of nature. After the initial atmosphere, the Grid, consequently the Clearing, Forest, Tree, Leaf, Cloud, Pond, Subterranean Earth, and Abyss is experienced by the 'immersant.' In addition of these natural metaphors, there is also a sub layer, the Code, and a super layer, the Text. The Code includes much of the actual software used to create Osmose, and The Text is a space consisting of quotes from Char Davies and citations of relevant texts on technology, the body and nature. They function as theoretical comments on the virtual environments created. Immersants navigate anywhere within these environments as well as hover in the ambiguous transition regions in between. After fifteen minutes of immersion, the session ends by the appearance and slowly disappearance of the Life World.

Osmose is noteworthy in terms of the achievement in transgressing the boundaries of virtual reality technology. In terms of including the physical body within the virtual environment, she defines the term 'immersant,' claiming the total body immersion in virtual environment. The effect is to create a meditative experience for the participant, who is generated by the unconscious movements of the body. The second highlight

of the issue is her uniqueness in recreating the 'virtual environment.' Her understanding of virtual space neither mimics the physical space, or the conventional virtual technology. Instead, she proposes a soft luminous, enveloping space that is experienced and lived by the 'immersant'.

At that point Char Davies' virtual reality artwork <u>Osmose</u> transgresses the cliché. The medium as virtual reality has the potential to include the body, as in the case of <u>Osmose</u>. But what makes <u>Osmose</u> so significant is at two phases. The first is the use of the body as a whole. There is no manual control, no task-oriented design. The second is that the space represented has the potential to be the virtual space that is detached from the conventional technological space. The organic, the felt and sensuous space thus the natural space is reflected by the use of technology. Thus she opens out a new understanding of space that is both organic and inorganic at the same time. Thus the virtual reality presented by Char Davies, defines the virtual space that is experimental rather than representational.

Char Davies' continuous attempts to include the body in virtual reality technology and to create an organic, lived, enveloping space as opposed to the Cartesian space provide powerful insights for the reevaluation of the technological expression of the virtual space that excludes the organic body and replaces by the mind. In that respect, rather than attempting at a discussion on the artistic qualities of Char Davies' artwork, this study

proposes the examination of Davies' art work <u>Osmose</u> in order to problematize the nature/technology relationship.

In terms of analyzing the fluid cyberspace interpretations, Char Davies' <u>Osmose</u> is significant. Davies develops a unique interpretation of virtual space by rejecting the dualist descriptions of the relation between nature and technology, body and mind. She claims to create "as sense of lived, felt space that encircles one with an enveloping horizon and presses closely upon the skin" (Davies qtd in Gigliotti). Char Davies departs from the understandings of virtual reality technology (VR) and 3-D computer graphics, as a matter of conveying a sense of spatial envelopment, which transgresses the limits of the 2-D picture plane. In this way, she deconstructs the notion of the pre-existing virtual reality (VR) technologies that are within the boundaries of Cartesian notions of cyberspace. As mentioned above Davies spaces refuse to be confined by the rules of Descartes. If we use feminist conceptualizations, what is at hand in <u>Osmose</u> is a womb-like space that is very different from the Cartesian notion of absolute, empty, abstract, xyz space. In the following pages, the set of relations between body and space, body and embodiment is explored through Davies' <u>Osmose</u>.

2.4.2 Dynamics of Space

There are several uses that Virtual Reality environments are realized. The most common use for virtual environments, in terms of content, has been the representation of the physical world around us. Whatever purpose it has

been put to, either actual life or in an 'embodied' fictitious form, the VR environment has, on the whole, been made to mimic at least a part of the physical nature of our world, for instance in the way that solid objects behave or in the way that they view perspective. The virtual environment of Osmose transgresses this hard-edged reality of virtual reality environment.

> Osmose does not reconstruct the world as we habitually perceive it (empty space containing solid, static, hard-edged, and separate objects, with rigid distinctions between subject, object, figure and ground) instead, Osmose uses transparency and luminous particles to "desolidify" things and dissolve spatial distinctions (Davies qtd. in Gigliotti).

As quoted from an interview with Char Davies by Carol Gigliotti, her notion of space is immersive virtual space that is "all-encompassing, all-surrounding, a subjective embodied experience" that is quite dissimilar to the Cartesian notion of "absolute, empty, abstract, xyz space." What she aims to recreate is "a sense of lived, felt space that encircles one with an enveloping horizon and presses upon the skin, a sensuous space, subjectively, bodily perceived" (Davies qtd. in Gigliotti). Originally a painter, she abandoned painting in order to create an enveloping space using 3-D computer technology. She further moved to the medium of immersive virtual space, in other words, to virtual reality technology. In Osmose, as stated in her website, Char Davies challenges conventional approaches to virtual reality. Not only the use of the body as 'immersant' is significant but also the virtual space created used are beyond the hard–edged realism of the previous 3-D computer graphics. The visual aesthetics of Osmose is semi- representational,

semi-abstract and translucent, consisting of semi-transparent textures and flowing particles. Figure versus ground relationships are spatially ambiguous, and transitions between worlds are subtle and slow. This mode of representation serves to 'evoke' rather than illustrate, and it is derived from Davies' previous work as a painter.

The definitions of 'sensuous, bodily space' refer to 'uterine,' 'womb-like' space that is feminine space, as she states in her interview. She argues that one reason for this analogy is that she is a female who tries to put into words her sensibility, and another reason is her relationship with the 'mother nature.' Nature as a starting point of her interactive art-work is significant, as she uses nature not only in the use of feminine space, but also in the depictions of her virtual spaces.

The depiction of a version of nature plays a large part in this work. At the same time, the imagery used is, on the whole, quite abstract. Abstract shapes and patterns are used to make up a lot of the space. However, it does use a lot of objects that the user will be able to relate to, such as a tree, leaves and words. There are various sections which can be explored, such as: 'Forest,' 'Clearing,' 'Pond,' 'Tree,' 'Abyss' etc.

Osmose transcends conventions of real-world representation in the way in which the user can interact with the surrounding virtual environment. It allows the user to move through objects and to gain a sense of being within

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that object, whatever it may be. In one section Char Davies uses philosophical writings of some of her favorite or most inspiring writers, another section presents the actual code used to run the system. This issue, she contends: "The themes in Osmose, i.e. archetypal aspects of Nature, and the desire to dissolve boundaries between interior and exterior within the context of enveloping luminous space" (Davies: 1998).

Repeating the VR technology, Osmose is based on visual, aural and interactive aesthetics. Theses categories would help us to define what Osmose aims to do but also in what sense it transgress these aesthetical categories. In terms of visual quality, Osmose is hardly defined in photo-realistic category as her representations are neither realistic nor abstract, but somewhere in between. With the use of transparency and subdued color, she aims to break down boundaries between objects and subject; she suggests fluctuations between 'figure' and 'ground.' This helps her to dissolve the boundaries between objects and space, and to play with figure and ground relationship creating perceptual fluidity. By her interpretation of represented spaces, she achieves "transcendence of difference through mutual absorption, dissolution of boundaries between inner and outer, intermingling of self and world" (Davies: 1998). As described above, she mostly uses artistic terminology to describe her work. The figure and ground, realistic and abstract definitions are mostly associated with painting, giving clues of her previous medium of expression, the painting.

More importantly, it is more suitable to call that what she achieved by using the 'transparency and subdued color' is that the 'immersant' has the impression of being completely surrounded in enveloping space. At that point she used the nature as a metaphor. The scenes depicted are strongly similar to natural landscape painting, except for the effect of transparency. The transparency enforces the fluidity or in other words enhances the water space that is her starting point for the case of <u>Osmose</u>. We might say that <u>Ephémère</u>, her succeeding virtual environment is mainly based on the Mother Nature, whereas <u>Osmose</u> is rather based on the mother sea. In this sense the term fluidity is more applicable to <u>Osmose</u>.

2.4.3 Dynamics of Body

After her interactive artwork, <u>Osmose</u>, she defines the term 'immersion' to define to be 'jack in' cyberspace. According to her terminology, the interactive player, user or operator of virtual reality is called 'immersant.' The immersed body operates the system of Virtual Reality by her bodily movement. In <u>Osmose</u>, breathing is being used in a very specific way, not only for the navigational aspects but also to help people reconnect to the body. Navigation is based on the participant's breath and balance, which are analyzed by a complex computer system linked to the body via an interface vest and stereoscopic head-mounted display. <u>Osmose</u>, taken from the word osmosis, the biological process involving passage from one side of a membrane to another, is exactly that: a corporeal and temporal passage to

another state of being where users are aware of themselves and able to upset their own personal 'baggage' filled with Cartesian dualisms.

As stated in "Osmose: Notes on being in Immersive Virtual Space," Char Davies explains her use of breath and balance as follows: "Through breath, the immersant is able to rise and fall in space with ease and precision. By subtlely altering the body's center of balance, the immersant is able to change direction."

In order to define conventional virtual reality technologies, to refer back to "Liquid Architecture in Cyberspace" helps us to clarify in what sense Osmose is a transgressive work. Novak claims that "gloves, helmets and suits and vehicles are all mechanocybernetic inventions that still rely on the major systems of the body, and therefore on coarse motor coordination, and more importantly, low ending density" (226-7).

In terms of interaction and navigation as described above, she mostly transgressed the conventional virtual reality work, in a different navigation in this immersive space. What Osmose aims is a strong sense of full body immersion in a fully enveloping space. This helps the immersant to find a way to dissolve the boundaries between interior self and exterior world space.

The basic navigational pattern in VR is composed of mostly horizontal and frontal movements, whereas the emphasis in <u>Osmose</u> is on vertical movements. This repeats the underwater experience that is free from the gravity. In addition to the navigation, the body is centered in terms of using the breath and balance to navigate in this world. The impression of being centered in their body in the virtual space is achieved by the body-vest. There is no manual control in <u>Osmose</u>, as opposed to phallocentric apparatuses used in conventional virtual reality technology. This is a sense of 'being' in the world, rather then 'doing' things to achieve a predetermined goal.

> When we enter cyberspace we will expect to feel the mass of our bodies, the reluctance of our skeleton; but we will choose to control with our eyes, fingertips, lips, and tongues, even genitals (Novak, 226-7).

The sound that is used is an ambiance of continuous, melodic sound. The sounds used in <u>Osmose</u> are sampled from two human voices (male and female). Then, these samples are processed so they would be neither literal, nor abstract, but evocative. Creating a linear composition, these sounds are related to the journey of the immersant as he/she navigates in this space.

If we look at the effects on the immersants, most of them declared that they became calm. Because of the visual aesthetics, and being able to float and pass through things, immersants feel disembodied and embodied due to the reliance on breath and balance. Simultaneously they defined this experience as euphoric, and emotional. Then, Andrew Treadwell's contribution to <u>Osmose</u> is significant.

In "Virtual Transcendence," Treadwell explores the mystical experiences by those who experienced the virtual reality environment Osmose. He argues that there is no universally accepted or 'scientific' definition or explanation of the 'mystical experience,' or the 'transcendental experience.' Descriptions come, themselves, in a mystical and unscientific language; therefore they may be considered by some as wholly unreliable as the basis for true description or explanation.

The most generally recognized transcendental experiences in the mystical tradition come through the mystical practices of religion, such as meditation and prayer, although the mystical experience does not always require us to take any special form of action or set of methods in order to produce the desired result. Similar accounts have come from people in common life situations or people having experimented with hallucinogenic substances. In 1960's Alister Hardy published his findings from a study of thousands of first-hand accounts of mystical experience. He concludes that depression or despair, prayer and meditation, and natural beauty, religious worship are placed at the top. Starting from this definition, the accounts of the immersants' reactions are important.

Another interpretation on Osmose, namely Erik Davis' writing on Char Davies is significant in defining what exactly influenced her to create such an artwork. He clearly claims that this immersion in virtual environment comes from her scuba diving experience, as Osmose aims to form a watery

void. By equating <u>Osmose</u> to lucid dreams, out-of-body experience, it dissolves the habitual boundaries we maintain between inside and out, between self and world. Cyberspace is the place where subject meets the object.

If we draw the boundaries of conventional Virtual Reality, most of them might be assumed to be confined within the constraints of Cartesian space that is absolute, empty, abstract, or more exactly the xyz space. Thinking with the dualism of the Cartesian thought, enveloping, sensuous, subjectively and bodily space may be put opposite to the hard-edged technological space. Concerning the dualism, the space created by Char Davies transgresses the technology per se but proposes immersive virtual space. In <u>Osmose</u>, a new understanding of space is defined as soft, luminous, semi-transparent. This understanding of flowing space has no boundaries, thus the subject and objects become a flux, allowing the body to navigate freely in this imaginary space. Creating the flux, the body can flow freely in this imaginary space. As argued by Novak, it is the most ancient dream of human kind: magic of changing space.

Starting from <u>Osmose</u>, the aim of the study is to look at other possibilities to define the context and constraints of virtuality. As described above, fluidity is a term used by Novak to define the architecture of cyberspace. To detail the study, my aim is not only to have a critical

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discussion on fluidity, but also to contribute to the understanding of the essential differences between the fluid and actual experience.

This study aims to discuss the 'other than the technological' possibilities of virtual space, such as the natural edifices close to virtuality. To some extent, Char Davies' Osmose achieves the integration of the nature and technology, but in order to intensify the study, I argue that the water space needs to be analyzed. In other words, go back to the literal meaning of 'fluidity' will help us to think virtual space other than the technological. The aim is not to put the opposition of technology/nature but to discuss the virtuality from another perspective. As the water space carries parallel characteristics to cyberspace defined by Novak, it is appropriate to shift the study to 'water space.'

3. WATER SPACE

Starting from the depiction of nature that is strongly used in Char Davies' virtual reality technology, the aim of this chapter is to return to the origins of her influence. The origin of her thinking is based on the using of the technological to reach the natural and the bodily in order to reach the space. She says that nature has a strong influence in what she has created. The natural and especially the bodily contact with nature is the key point to understand Osmose. As it is discussed above, the experience of physical body is virtual space needs to be clarified. By the direct 'contact' of the body, water space become united with the body, dissolving the boundaries of object/subject, inside/outside splits. Drawing parallel lines between water and imagination, virtuality and freedom, the next chapter proposes a look at water space notion.

As opposed to technology, the definition of nature is important at that point. Nature as a whole is widespread to discuss, but the specific example, 'water' goes beyond the theory of spatial concepts, even beyond the theories of nature. The water world is defined under two categories. The first category is in the theoretical realm and consists of the philosophical approaches to water. The water element as perception, the sea and ocean, as meaning and

feeling, might help us to develop ideas about the water space. The following is the experience of water, in other words, swimming and diving, being in bodily 'contact.' To be in touch or contact with water is the key term to understand Char Davies' notion of immersive virtual reality. In this respect the physical body gains meaning, as space is experience with and by this body.

3.1 Water Space as Virtual

Starting from the definition of water space in diverse cultures, my aim is to arrive at the definition of 'oceanic feeling,' that strongly coincides with the adjectives related to Char Davies' virtual reality artwork Osmose. In this sense, this part of the chapter starts by the geographical approaches, aiming to specify the Pacific Rim. The Pacific Rim is defined as an imaginary space and it is the key point to explain the oceanic feeling. This discussion opens up another question that is related to elemental factors, as defined by Gaston Bachelard, a different meaning attached to the properties of water. After a brief review of the existing literature on the sea and ocean, this study moves to the body, in particular the Pacific body.

3.1.1 Geographic Approaches

> Nature is the first standpoint from which man can gain freedom within himself, and this liberation must not be rendered difficulty by natural obstructions. Nature as contrasted with Sprit, is a quantitative mass, whose power must not be so great as to make its single force omnipotent (Hegel 80).

Among geographical approaches, Friedrich Hegel's <u>The Philosophy of History</u> is unique in terms of defining the spatial dimension of the water including its geographical boundaries. According to Hegel, the water has a variety of meanings for different cultures and civilizations, and carries various adjectives, unifying versus dividing, and limiting versus delimiting, etc. Different forms of water, such as rivers, seas and oceans, are associated with diverse meanings in different cultures. To summarize his ideas, the concentrated regions are classified as: the Mediterranean, the Old World; America, the New World; and the Pacific Ocean.

The Mediterranean Sea unifies its surrounding lands rather than limiting and separating. As Hegel has stated in the following pages, The Old World, placed around the Mediterranean Sea, lies opposite to America, and separated from it by the Atlantic Sea. The three continents, Asia, Europe and Africa that compose it have as essential relation to each other and constitute a totality. The Mediterranean is thus the hearth of the Old World. It has a mythological character, as the civilizations emerged from this region.

Setting aside the Mediterranean Region, which is united by the sea, the Americas and the Pacific Rim have similar characteristics, as the ocean divides them. As stated by Hegel, the water, especially the ocean bears the meaning of dividing. Especially the Pacific Ocean forms a border between the Old world and the New World; it divides geographically the America, The West, and the Far East. It is the spot where the "Far West becomes Far

East" (Hay, qtd. in Connery, 299). As stated by Hegel, Pacific Ocean is the end, the limitation of the land: "It looks boundlessly innocent, submissive, friendly, and insinuating; and it is exactly this submissiveness which changes the sea into the most dangerous and violent element" (91). Hegel says that:

> The sea gives us the idea of the indefinite; the unlimited, and the infinite, and in feeling his own infinite in that Infinite, man is stimulated and emboldened to stretch beyond the limited… but the sea carries him out beyond these limited circles of thought and action (90).

Hegel's belief in historical determinism and the inability of individuals to break free from the processes of history is one way to look at the philosophy of the history of water. As his study is attached to history, his writing remains limited, as it does not include the later development in the world history. Including both the geographical and philosophical approaches, a more recent study, Christopher Connery's discussion on water is significant in terms of analyzing the oceanic feeling. Christopher Connery, in "The Oceanic Feeling and The Regional Imaginary," defines the term ocean feeling by explaining geographical relations and characteristics of Pacific Rim. By the advent of globalization, the expansionism of US, the disappearance of depth, the general flattening out, the Pacific Rim became the unique newly imagined space. Setting aside the territorial character of the ocean, the Pacific Rim has become the space of imagination. This character is the result of the ocean, more exactly of the space defined by the Pacific Ocean. As stated by Connery, "ocean as a source and ocean as destiny figure in the ocean's mythological temporality; it is both life-giving mother and final frontier" (289).

3.1.2 The Element

> Liquid is always the problem element-shapeless but not
> abstract; temporal; changeable (Connery, 290).

There has been a tendency to draw parallels between nature and freedom, especially water and liberation, -ever since Gaston Bachelard published Water and Dreams. Bachelard established phenomenological studies of the imagination. Following his previous study, The Psychoanalysis of Fire, that focused on the epistemological question of how the imagination works; Water and Dreams is a look at the imagination through water. In Water and Dreams, Bachelard changes the way of looking at the material world. This is a transformation difficult to describe to someone who has not shared the experience of water, nevertheless one might say that our imagination expands in a new way. Bachelard illuminates a joyous way to regenerate the imagination and teaches us to read images centrifugally, pressing our interior space outward. Bachelard defines water, which functions primarily as a transitory element, as follows: "Water is truly the transitory element. It is the essential ontological metamorphosis between heaven and earth. A being dedicated to water is a being in flux" (Bachelard, 1983: 6).

The water as an element constitutes the essential part of his work. As stated by Joanne Stroud, in the foreword of Water and Dreams, water -like fire, earth, and air- is an element in a pre-Socratic sense and is therefore both 'inner' and 'outer.' By water, Bachelard means actual ponds and streams, as

well as bodies of water that inhabit our dreams and reveries. Setting aside the epistemological questions on the imagination, especially on material imagination, his classification of water is significant for questioning the water space and meanings attached to it. Bachelard urges us to take the lessons of the water to heart and to see by the means of water. Water calls for a seeing in depth and also a seeing beyond: "The lake or pool or stagnant water stops us near its bank. Its says to our will: you shall go no further; you should go back to looking at distant things, at the beyond" (Bachelard qtd. in Stroud: 1983, ix).

In his categorization of water, Bachelard assumes three major categories: clear waters, springtime waters and running waters; deep waters, dormant waters, dead waters and finally violent waters. The first group is the clear waters, sparkling waters that produce 'fleeting and facile images.' Rivers, springs and waterfalls in other words, the waters of movement might be accepted under this classification. He assumes that coolness and clarity make them 'primitive water.' Because of movement, although one might treat them as chaos; because of the unity of the element; these images are ordered and organized (1983: 11). Bachelard states that:

> To disappear into deep water or to disappear toward a far
> horizon, to become a part of depth or infinity, such is the
> destiny of man that finds its image in the destiny of water
> (1983: 12).

His second classification is deep waters, dormant waters and dead waters. He assumes that the running water, is destined to slow down and to

become 'heavy water.' All living water, such as the clear water, springtime water and running water is on the point of dying or becoming heavy water (1983: 47). Heaviness is related to depth, 'watery depth.' In this classification, water is still pure water but not dynamic as in the case of lakes, ponds, etc. To summarize, he states that "water becomes a kind of universal home; it peoples the sky with its fish" (1983: 51).

After defining the *eaux-vivants*, his first two categories, his attention moves to the third category: violent water. Bachelard defines it as a form of anger; thus he assumes that violent water becomes water, which causes violence. It is the case of "flux and reflux of an anger" (1983: 15). Here on a new level, is the conquest of a duality inscribed in the element, a new sign of the basic value of an element of the material imagination. He adds to the definition that, when the seaman or a swimmer has a battle with water, he wins through constant contact with violent water. Water turns out to be malevolent.

As quoted by Connery, Bachelard finds that the fresh water, living water has the mythological character, whereas the sea is "inhuman water, in that it fails in the first duty of every revered element, which is to serve man directly" (1983: 6). The value of purity is accepted as the highest value that the human mind has claimed. Water draws to itself all images of purity (Connery, 290).

After the categorizations, in "Maternal Water and Feminine Water" Bachelard assumes that the pure water has maternal characters; whereas the seawater defined as violent water is male. To show the capability of water he uses the term 'material marriage,' realizes the naïve or poetic imagination nearly always the attributes of feminine characteristics of water. In terms of defining the maternal and feminine water, Bachelard assumes that water is the most receptive element, thus it has strongly feminine characteristics. He states that water is the spring of being, in other words motherhood. Water flows, its constant movement responding to the environment and to possibility. While the masculine sea calls for tales of adventure; the rivers, lakes, and streams evoke reverie. It is the liquidity in our eyes that causes us to dream. Bachelard claims water as his own 'oneiric' element" (Bachelard qtd. in Stroud: 1983, ix).

3.1.3 Oceanic Feeling

In his book, <u>Civilization and its Discontents</u>, Sigmund Freud described the oceanic feeling as a sensation of 'eternity,' a feeling of something limitless, unbounded or 'oceanic.' This feeling he believed, was the source of religious energy. Having borrowed the term from Romain Rolland, he uses the oceanic feeling, childish feeling of boundlessness and limitlessness to explain the adult ego's adaptation to the neurosis of 'civilization' (Freud, 1-2). Without going through Freud's psychoanalytical approach, the use of the term 'oceanic feeling' might be explained using Bachelardian terms.

As discussed earlier, the Pacific Ocean is the last frontier of the land. It is the zone associated with the ocean, beyond and outside the terrestrial real. In "The Oceanic and Regional Imaginary," Christopher Connery questions whether the ocean is a "prime activator of the trope of the sublime: limitless, unfathomably deep, infinite" (289). He defines the ocean as a pure void that activates the terrestrial symbolic system, a real beneath the floating discontinuousness of the land (290).

Starting from literature, Connery says that the ocean has been an inspiration for various writers. An example is Emerson whose inspiration is 'oceanic sublime.' According to Emerson, "the only sea is limitation," whose shores will always disappoint and deject. Equating the ocean to the universe, he assumes that there are no fixtures in nature, and the universal ocean is 'fluid and volatile,' the 'flying Perfect.' Connery states that "the memory of an initial liquid state, a watery oneness with nature that is precisely the oceanic feeling is conceptually well beyond Emerson's liquid imaginary in 'Nature'" (296).

In defining the life of man comparatively to the ocean, Emerson says that life is "a self-evolving circles which, from a ring imperceptibly small, rushes on all sides outwards to new and larger and larger circles, and that without end."

In the literature, two principal books containing sea myths are significant. The first is La Mer by Jules Michelet, and the second is Moby-Dick by Herman Melville. Besides explaining the whaling industry in the mid nineteenth-century, they are both filled with the materiality of ocean water. Melville's ocean varies in shape and color, its local characteristics "in landless alone resides the highest truth, shoreless, indefinite as God" (115). Michelet's ocean is primitive fearsomeness, its alienating difference. Showing the nourishing character of the ocean, Michelet uses the term *l'élément universel de la vie*-universal element of life, and this element is not simply nutritive outside, but a reorganized, chaotic version of the body itself, where bones, blood, marrow, and human energy are simply divided up and redistributed among the various life elements of the sea. Nourishing ocean is "the globe's great female, whose tireless desire, ceaseless procreation, and child birthing never end" (Michelet, 74).

As Michelet claims in his book, that the ocean is equal to maternal femininity. Michelet's ocean water is maternal, but for Bachelard, only *eaux-vivants*- fresh water, has a maternal and mythological character. Bachelard's ocean is a "dynamic environment that responds to the dynamic quality of our assaults" (1983, 167). For Bachelard, the ocean is wild and changeable, whereas for Michelet, the ocean is calm, and like a mother's womb. For Bachelard, the seawater is beyond theory. He claims that the sea is the state of disorder, from which the civilization has emerged. He means that this continuous transformation from order to disorder composes a dynamic

balance to recreate other civilizations. He defines the end of time as the time when "there was no more sea" (Auden qtd. in Connery, 291). For Michelet, ocean water is not water per se, but more than water: *La Mer de Lait*- 'The sea of Milk.' His seawater is mucus: slimy and teaming with life. The ocean is sublime slime, uncanny and sublime at once (Connery 292).

In Giblett's <u>Philosophy and Sociology in Wetlands</u>, within the definition of 'geocorpography of modernity,' the ocean does not appear, although sun, fire, earth, city, land, and mass all do. In this chart, in one category are "primal slime, wetland, abjection, soft, writing, trace, feminine, vacancies, id, Hell, infinite temporality, eternity." In another category, are "liquid, water, river, depth, flow, masculine, conscious(ness), temporality" (Giblett qtd. in Connery, 291). There is nearly a single peace that does not include identification of the ocean with a maternal femininity. Including Bachelard with his definition of fresh water, the ocean is mostly identified with a mother. As stated by Connery, the ocean "can never be filled in. Like a mother, it can never be forgotten: it is a primary and extensive an element as sky" (292).

The oceanic feeling is nostalgia of our stay in the amniotic water of our mother's womb in a state of hydraulic suspension, characterized by a preconscious unity or symbiosis with the environment. This feeling of 'oneness' in the Mother's womb can be equated to the feeling of 'oneness' with Mother Nature. This sense of self-floating in the great ocean is the

source of the energy driving the environmentalist movement. The universal solvent water is a universal symbol of purification.

3.1.4 Body in Pacific Space

In <u>Call Me Ishmael</u>, his dissertation on Melville's Moby-Dick, Charles Olson, takes through Shakespearean influence on <u>Moby-Dick</u>, Melville's struggle with belief, and the importance of place. Olson, in "The Conclusion: Pacific Man," explains the importance of the Pacific for Herman Melville, that is a new discovered space that relate past and future: a comprehension of Past, a confirmation of Future. Explained from the American geographic position, placed in the eastern frontier of the Pacific Ocean, Olson claims that for Melville, Pacific is a new experience of space, becoming the new center of the world. Pacific is a carrier; it gives the sense of immensity. As claimed by Olson, "She is HEART SEA, twin and rival of the HEART LAND" (114). Moreover, Pacific is both a comprehension of the past and a confirmation of the future. According to Melville, as quoted by Olson, The Pacific Ocean was older than America and Asia. In Moby-Dick, Melville speaks of 'ocean's utmost bones': "to have one's hands among the unspeakable foundations, ribs, and very pelvis of the world; this is a fearful thing" (Melville qtd. in Olson, 115). Until the discoveries in the East, the Pacific remained unknown, because of the limited transportation. Mediterranean remained the center of the world, till the discoveries of the New World. Afterwards, Pacific became the center "between the Baltic and the Mediterranean and thrust out the New World." The Pacific opens out the New History. As quoted by Olson, "It rolls

the midmost waters of the world, the Indian Ocean and Atlantic but its arms"
(Melville qtd. in Olson, 117).

In "Oceanic Feeling and Regional Imaginary," Connery talks about
the Pacific Man defining him as "egoless, post-humanist, collective,
constantly nourished by the sea of milk, filled with the oceanic feeling, is a
fish" (304). He states that with the practice of swimming, and other bodily
and spiritually practices such as tai chi, meditation, the body of the Pacific
man has become a body without extremities. This brings the unity of the
body with universal space. Starting from the ocean swimming that is an act in
unimagined space, the body is 'a post-individual fish/cyborg.' Thus, Pacific
has become a space that is to free one self. Ocean, namely the Pacific Ocean
is universal, millenarian. At that point we may refer to Gaston Bachelard that
defines the body-space relation in terms of water:

> Thus water will appear to us as a complete being with
> body, soul, and voice. Perhaps more than any other
> element, water is a complete poetic reality. A poetics of
> water, despite the variety of ways in which it is presented
> to our eyes, is bound to have a unity. The unity with the
> element (Bachelard 16).

All the discussions above may be summarized under the term 'water
space.' Whether violent or feminine, dead or living water, meanings are
unified when we consider the 'contact' with water. When a body is in or
under water, it is united with the surrounding, detaching the boundaries
surrounding the body.

3.2 To be in 'Contact:' Immersion into the Water

In order to enlighten the concept of water space, having 'contact' with water element is essential. In this sense, the 'immersion' into the water helps us to dissolve previous categorizations of water. The very essential activities of swimming and diving, the very basic forms of 'immersion' allow the body to interact with the environment. This immersion is explained gradually, starting from swimming, then diving. The last step is analysis of water space-body relation by the concepts of breath and balance. The primary point here is the expression of the body in this different space and the contact with the water element. Moreover, by breath and balance, the diver body becomes united with the element, dissolving the boundaries of object/subject, inside/outside. These adjectives and phenomenon have similar effects to Osmose, the virtual reality artwork of Char Davies. As it is stated in the previous chapter, the essential body contact of Char Davies, such as breath and balance is analyzed in order to connect the real body into the virtual water space. Aside from these two essential acts of Osmose, this chapter will include the spatial concepts attached to the body, especially by the help of Irigaray's text.

3.2.1 Swimming

Darwinian theory assuming the evolution of man from the amphibious living is the popular hypothesis of the western naturalism: an aquatic origin for all life. Starting from this point, Connery assumes that, the exploration of the ocean is not only a journey beyond but also a return back to the origin.

Humanizing the inhuman element, the ocean becomes an absolute horizon. Digby argues that 'art' and 'science' of swimming is 'natural' to humankind. Yet the strangeness of its suggested means for entering water indicates that the conceptual boundary between the terrestrial and aquatic activity is still somewhat mysterious. Connery defines swimming as a "transcendental experience, a spiritual, originary, mysterious or purifying exercise" (294).

In <u>Haunts of the Black Masseur</u>, Charles Sprawson, a swimming devotee, investigates man's ambivalent relationship with the water. This significant study includes the cultural and literary history of swimming, bathing, and the social meaning of water from ancient Greece to modern Olympics. The way man's enthusiasm for swimming has flowed away through time is fascinating. Staring from the Homeric dimension of swimming, he moves to the Olympics as a competition of swimming.

Through the history of swimming, English swimmers were most significant as they have an 'imperial mission.' English swimmers tended toward maximum immersion, taking dogs and frogs as an example. Sprawson expresses this maximum immersion as the 'feel for water.' This bodily contact with the water surrounding the whole body is a total immersion. As stated by Sprawson, this is "the love of the sound of water, the feel of it on his hands and legs" (14). In order to intensify this feel for water, some swimmers started shaving the body. What really are aiming for is the

maximum immersion and feel for water, without any obstacle. It is the touch of the water, or in other words, the bodily contact with the water.

Talking about the swallow dive, Sprawson mentions that "the immediate sensual awareness of the water as he dived in, the feeling that he was suspended, united with the element" (14). If we refer back to Bachelard, this unification is to become one with the element. Sprawson mentions that "No doubt in diving she experienced the same 'exaltation' as she claimed to derive from dancing, the "feeling for the flights of the human soul divorced from the person" (251).

When man could experience nature's motions by being immersed in them and responding with his own movements, every particular motion bore the coloration of a particular element: violent water. The spatial analysis of sea and ocean implies the notion of water space, whether sea or ocean, the different rules of water space brings forth the same highlighted issues as Char Davies' Osmose. Liberated from gravity, with different physical laws than on land, water space opens up a new dimension.

3.2.2 Diving

Bachelard, in Poetics of Space, tries to make on the correspondence between the immensity of world space and the depth of 'inner space.' As referred by Bachelard, Philippe Diolé, the author of *Le Plus Désert du Monde* makes use of desert images to explain his inner space and later relates it to

the water. In his earlier books, Diolé shares the invasion of the intimacy of the water. As he has experienced deep-sea diving, the ocean has become a form of 'space.' Under the surface of the water, he discovered 'absolute depth,' depth that is beyond measuring, and would give no greater powers of dream and thought if it were doubled or even tripled. By means of his diving experiences, Diolé really entered into the volume of water that is recognized as a one-dimensional space. In this 'one substance space' – 'one dimensional space,' one might feel so remote from the earth and life on earth, that these dimensions of water bear the mark of limitless. In this limitless water space, that is unified with its substance, to try to find high, low, right or left is meaningless, as these definitions of spatial orientation is from the life on the earth. Diolé proposes to live by the rules of this new world that is conquered by diving (Bachelard: 1964, 205).

In deep water, the diver loosens the ordinary ties of time and space and makes life resemble an obscure, inner poem. At the end of the book, Diolé concludes that "to go down into the water, or to wander in the desert, is to change space, neither in the desert nor on the bottom of the sea does one's spirit remain sealed and indivisible" (Diolé qtd. in Bachelard: 1964, 206). This change of concrete space can no longer be a mere mental operation that could be compared with consciousness of geometrical relativity. Bachelard states that: "For we do not change place, we change our nature" (1964, 206).

Bachelard uses Diolé's argument and says that: "I once wrote that a man who is familiar with the deep sea could never be like other men again" (Diolé qtd. in Bachelard: 1964, 207). Diolé continues with his experience of desert, saying that his mind is "filled the desert landscape with water." Above Diolé gives a psychological technique which permits to be elsewhere, in an absolute elsewhere that bars the way to the forces that hold imprisoned in the 'here' Diolé transports us to the elsewhere of another world.

Bachelard's interpretation of Diolé serves to create the relation of imagination and water. Bachelard claims that: "in my imagination I flooded the space around me while walking through it. I lived in a sort of invented immersion in which I moved about in the heart of fluid, luminous, beneficent, dense matter, which sea water, or rather the memory of sea water… I dreamed that my bodily weight reposed on this imaginary water" (1964, 207). Bachelard adds to the definitions of Diolé by saying: "I did not imagine that limitless could be so easily." Later with the publication of Water and Dreams, he goes further in the matter of imagination. He claims that the imagination invents "a new life, a new sprit; it opens eyes which hold new types of visions" (Bachelard: 1983, 16).

Char Davies defines the spatial characteristics of ocean by saying:

> Ocean space is not empty but enveloping and sensuous, not horizontal but vertical, often beyond measuring. At depths of 100-200 ft of water over a 6000 ft abyss, the ocean takes on the quality of pure limitless space, fluid, enveloping, interior, embryonic…Distinctions between near/far and inside/out become blurred… Divers float free

from gravity, using subtleties of breath and balance to ascend and descend. Buoyancy control is an essential skill that enables divers to hover motionlessly in 'mid-air' and move subtlely and sensitively, literally approaching the world with ~acr (Davies).

Hidden in the passage above is a mapping of her influence of diving. Davis claims that her initial steps to <u>Osmose</u> are after a diving experience in Bahamas, hanged on a thin rope and a nearby buoys helped her to keep the sense of direction from being lost in this watery void. As quoted by Davis, she claims that "diving out over an abyss, where you don't have a ground or coral heads to look at, you can get a very abstract and pure sense of space. (Davies qtd. in Davis)" Beneath the surface of the water, Davies experienced the water space that is defined above by Bachelardian terms. She further moves to her reaction to this experience, that leads her to an altered state of consciousness:

It was the first time in my life that I entered a space where there was nothing to see, no separations between inside and outside. If you saw a little tiny speck, you didn't know whether it was the glint in a barracuda's eye, or a little jellyfish, or a misfiring of a rod in your retina. I guess I started accessing endorphins or something, because I really got into a trance (Davies qtd. in Davis).

The underwater environment is quite different than the above in various aspects. The feeling of gravity governs many relations between the body and its surroundings when on land, due to the fact that human body consists of water. The weight of the body is carried by the skeleton and muscle of the body when on land. However, as the person is immersed, the body is in similar structure with its surroundings. The individual is supplied

with air at a pressure appropriate to the surroundings, thus he becomes united with the element.

With the setting achieved this way, the underwater experience becomes one that is visual to a great extent. The only sound heard by the diver is mostly his / her own bubbles caused by the exhaled air. With closed or semi closed breathing equipment, even these bubbles can be eliminated, leaving the diver with the purest form of experiencing the underwater world. He or she becomes another 'resident' member of the underwater world, not as if a temporary visitor.

The extra lifting effect of the neoprene material of the diving suit is roughly balanced by the addition of lead weights and finely balanced by the inflation and deflation by the diver of the buoyancy-compensating jacket. Thus the individual gets rid of the pull of gravity, possessing a mostly horizontal positioning of the body, utilizing leg muscles with the fins for thrust. All the utilization of additional gear and more up to date equipment brings the underwater experience a more isolated, comfortable, relaxing and thus 'virtual' quality.

Contrary to the life on land, the underwater surrounds the individual with a much more dense environment, the relatively coolness, relatively stillness of the underwater world brings a much more relaxing and maybe even meditating effect on the individual's perception of the underwater

world. Distortions in the perception of the underwater world should be carefully eliminated, and the evaluation of the correlation between virtual reality and the underwater world should be much more precisely performed in a detached manner.

What makes the underwater experience exhilarating for the individual could be briefly summarized as the loss of the pull of gravity, the elimination of the ambient noise of the land, the transformation of the colors into a different spectrum. The body is freed from the gravity and it receives a position quite proper for a feeling of meditation and freedom.

The water is not only changes the position of the body but also the colors. The water is not equally permeable for different colors of the spectrum; the blue remains alive while red color disappears the earliest as the individual dives deeper. In terms of perception, although the visual quality of diving is important, the sense of touch is the key to understand the spatial character of water. In The Silent Word, Cousteau not only explains the discoveries in this 'New World,' but also, he includes his perception by saying:

> Liberated from the gravitation, I was like flying in three-dimensional space. With unworried body gestures, I ascend, descend, and hover in middle water exactly as I want, by the help of my new lungs. My speed was as fast as a man walking on land. By swimming above, I could reach my air bubbles. A childish happiness forces mo play with water. I was feeling as if I was dancing with the nature (Cousteau, 13).

To sum up, the underwater experience could be defined as a bodily experience including not only the visual effects but also the whole body immersed. Considering the conceptualization of underwater environment, there are two main highlights to the issue. The discovery of the World's ocean raise questions about the water space, as in the case of The Silent World and Luc Besson's cult underwater movie Big Blue. Taking the dream-like point of view in these two popular cultural artifacts, what awaits the visitor of the underwater space is pictured to be in a total 'freedom.' For instance, in the deep blue scenes of Big Blue; seen through the blue filter of the water space or persistently mystic music of Eric Serra, Jacques Mayol not only lose the spatial dimension of real life but also feels only free when he is underwater.

Big Blue is a movie about a magical mysterious sea. The main two protagonists, Jacques Mayol and Enzo are both in love with skin diving, but for Jacques, the unknown depths of the sea are not only the ultimate test for their courage but the only place that he enjoys to be. He appears less and less able to cope with social demands, and he more and more prefers to stay in the water accompanied with the dolphins. He becomes increasingly obsessed with going deeper and for longer than ever. Fernie, in his review on Luc Besson's cinematography, states that:

> Jacques Mayol is happiest when he is underwater. He is often ill at ease when having to deal with others, and prefers the company of dolphins to that of men. (...) He does it because he loves diving. (...) His spirit belongs to the sea. The sea is his home and there comes a point where he must choose between "acting" in a society in which he feels uncomfortable, and following his instincts. (Fernie)

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Having this thread on one side, the other possibility that people would dive into the water space, that the water space would have a spatial configuration –though as virtual as it can be- exposes an escape from the reality that is above. This idea of an escape that would relieve us off our places in actuality, and would allow us to step into another space of different physical laws, where we might even leave our bodies behind expands the virtuality that we are already in. Yet Cousteau, who is the first scuba diver, disconnecting the demand of air, by the invention of first aqualung regulator, in order to have no relation with the above water, defines this kind of a water space again. This concept of escape from the above experience actually suggests a debate of virtuality; or put it more effectively: the virtuality of the water space. One important point is that this differentiation of the above and underwater spaces forms a great challenge for the way we perceive; offers us a new mode of perception. One fine example of this new mode of perception is in the last sentences of Enzo, in *Big Blue*: "You were right, it is much better down there." His 'being' in underwater environment is the definitively 'being' in virtual space.

But concerning this point we were missing yet another: Setting to one side the visual perception, how does the body in underwater space perceives that he or she is in a different spatial environment? As stated in <u>The Silent World</u>, the bodily movements in underwater space are achieved by breath and balance. This allows the body to be united with the space, blurring the borders of inside and outside.

3.2.3 Breath

Breath and balance is used in <u>Osmose</u> in terms of unifying physical body to the cyberspace. In addition to other aspects in diving, breath and balance is the most essential act, as described above. Moreover, breath and balance act as the navigational tool in this watery space of virtuality. The lack of the use of joystick or other manipulable navigational tool deepens the sense of subjective embodiment. What makes this works atypical is the lack of the orientation toward a goal. This means that breath is an autonomous act, which is task-free.

Starting from philosophical background of breathing, Irigaray's book <u>Between East and West</u> is significant in terms of explaining Char Davies' use of breath in <u>Osmose</u>. As stated above, Davies' attempts to bring the physical body in virtual space is achieved partly by breath. The breath, in a way, is to feel the touch of the inner space, a corporeal abstraction and the visual dominance.

Irigaray´s focus on breath in <u>Between East and West</u> is a natural consequence of the attention that she has given in her previous books to the elements of air, water, and fire. By returning to fundamental human experiences such as breathing and sexual difference, she finds a way out of thinking the body embodied in the culture. She identifies the birth with being independent, taken away the 'socio-cultural placenta.' This study is focused

on the breath rather than the sexual differences but it quite clear that gender is one aspect that we must deal with in order to explain the argument.

According to Irigaray, "breathing corresponds to the first autonomous gesture of the living human being" (2002: 73). She assumes that to be a human being is by being able to inhale and exhale by himself. This detachment from the uterus, where we breathe through the mother's blood is to be one being with the mother. This state can be called as a pre-autonomous state as we are not born yet.

Irigaray says that we are not aware of the air that surrounds us, unless we have a problem, meaning that this elementary need is realized when we do not have air. This is called symptom, in Zizekian term. Symptom is a part of a system, unidentified unless we have problem in the system. Zizek claims that "a symptom, however, is an element which (…) has to remain an exception, that is, the point of suspension of the universal principle: if the universal principle were to apply to this point, the universal system itself would disintegrate" (Zizek, 127-167).

Covering both Eastern and Western understanding of breathing, Irigaray brings another look to the essential act of life. She claims that the body of East has a sense of unification with his environment. The Eastern body allows more attention to the education of the body and of the senses. It reverses in a way the essential and superfluous.

She claims that the practice of respiration reduces the darkness or shadow of Western consciousness. For Western thinkers, spiritual forms, such as words, texts, and works of art, are the essence of culture, and the physical acts help to achieve these essentials. The physical body is a kind of embodiment for the mind to exist, whereas in Eastern thinking, "the body itself can become sprit through the cultivation of breathing" (2002: 7).

Yogic tradition, according to Irigaray, can provide an invaluable means for restoring the vital link between the present and eternity -and for re-envisioning the patriarchal traditions of the West. Western, logocentric rationality tends to abstract the teachings of yoga from its everyday practice - most importantly, from the cultivation of breath. Lacking actual, personal experience with yoga or other Eastern spiritual practices, the Western philosophers who have tried to address Hindu and Buddhist teachings have frequently gone far away of the meaning. It is not the case for Luce Irigaray. Incorporating her personal experience with yoga into her provocative philosophical thinking on sexual difference, Irigaray proposes a new way of understanding individuation and community in the contemporary world.

> In the East it is more common to remember that living is equivalent to breathing…. This breathing remains closer to nature –to the mother, to woman, to the family- or closer to culture- to social or civil life, more tied to the father, to the masculine world in our tradition (…) In a way, we are divided between two breaths, the natural breath and the cultural breath (…) Thus we are born and have grown up in the perspective of a separation between corporeal life an spiritual life, the life of the soul, without understanding that the soul corresponds to the life of the

body cultivated to the point of acquiring the autonomy
and spiritual becoming of the breath (2002: 75).

The Western thought imposes us to separate body from the mind, the soul from the body, but in eastern thinking, the way to reach the mind or soul or nirvana is to educate or train the body so that it is detached from the body, in a way as in Osmose. If we return back to Char Davies' concept of breath, we realize that the breath is the essential link to the three dimensional virtual worlds. It is not only an act, but also the essential movement in this fictious environment.

As stated by Mark Hansen, in "Embodying Virtual Reality: Touch and Self-Movement in the Work of Char Davies" the attention toward the control of breath let the 'immersants' feel both angelic and fleshy: "while you float dreamlike, unencumbered by the drag of gravity, your actions are syncopated with your breathing in away that makes your bodily presence palpable, insistent" (Hansen). He argues that by breathing, the boundaries of inside and outside are blurred, in other words, the 'immersant' feels the "dissolution of the hard boundary of the skin." This interchange with the surrounding space lets the immersant have the experience of spatial navigation penetrate into its body via the inhalation and exhalation. By the control of breathing, the immersant has navigation in this virtual space.

To sum up, the unification of the mind and body, the inclusion of the body within space are highly achieved in Osmose. Dissolving the boundaries

of Cartesian dualisms, breathing is cultivation of the body by the mind. As stated by Irigaray, it is nearly impossible to appropriate breath or air, but "one can cultivate it, for oneself and for others" (2002: 79).

Moving is breathing in Osmose. Like an underwater diver, the immersant regulate the position by breath and balance. These single acts of body creates a feeling of 'being there' unlike any other experience in the virtual world.

3.2.4 Gravity and Balance

In his lecture notes on philosophy, Hegel, the great Idealist philosopher, exhibited a strong historical sense, put 'Spirit' as opposed to 'Matter' at the heart of the historical process, and stressed the role played by great individuals:

> The nature of Spirit may be understood by a glance at its direct opposite - *Matter*. As the essence of Matter is Gravity, so, on the other hand, we may affirm that the substance, the essence of Spirit is Freedom. All will readily assent to the doctrine that Spirit, among other properties, is also endowed with Freedom; but philosophy teaches that all the qualities of Spirit exist only through Freedom; that all are but means for attaining Freedom; that all seek and produce this and this alone. It is a result of speculative Philosophy, that Freedom is the sole truth of Spirit. Matter possesses gravity in virtue of its tendency towards a central point. It is essentially composite; consisting of parts that *exclude* each other (17).

Hegel states that the world history goes on with the realm of Spirit. As opposed to Spirit, the term 'world' includes both physical and psychical nature. Physical nature does play a part in world history, and from the very beginning we shall draw attention to the fundamental natural relations thus involved. But Spirit, and the course of its development, is the substance of history. He states that we must not contemplate nature as a rational system in itself, in its own particular domain, but only in its relation to Spirit. Entrapped in the dualism of spirit and matter, Hegel's attention in Gravity is significant in terms of discussing the space without gravity.

In <u>Absent Body</u>, Drew Leder proposes a remarkable glance at the bodily basis of life. He claims that our bodies are absent in daily life. Leder's description and analysis of 'absence' as dysfunction, is related to the "forgotten, alien, uncontrollable and obscured" physical bodies. His ideas are an original critique of Cartesian dualism, arguing that is based upon, but misinterprets our everyday experience. He invites us to rethink the bodily basis of our life. He investigates the depth of human being-in-the-world in intensely illuminating ways. His analysis of the close connections among the structures of the lived body and their cultural elaborations is especially rewarding. Leder states that:

> Balance is a question of centering. When we are properly centered, our experience of Being is in equilibrium. Being well centered, we can encounter other beings in a more open, receptive way. Being well-centered in Being is therefore at the very root of *Gelassenheil*, that 'way of being' in virtue of which according to Heidegger, we are

going to be most favored with a deeper experience of
beings, and the presencing of Being as such (178).

As diving is an anti gravity environment, can we say that diving is
freedom? Retained from the laws of physics, diving might be accepted as an
act of freedom. Setting aside the hardware of the diving, it is the only place
on earth that you interact with this environment freely. The movement in this
space is not limited to horizontality but to verticality as well as we are free
from the gravity forces.   Similarly, in virtual space, the freedom of
movement exists. It is partly achieved by the programmer, but at the essence
of virtual space, there are no physical laws. In "Antitectonics: The Poetics of
Virtuality" William J. Mitchell, discusses oppositions such as, materiality
versus virtuality, material realizations versus electronic realizations, local
versus local, façade versus interface and tectonics versus electronics.
Mitchell advocates an approach to new forms of architecture based on digital
models and techniques based firmly in the realm of the virtual. This will
enforce my argument for a digitally based approach to virtual reality
technology using different analogies from the computer and electronic world
to reinterpret existing models of thinking on this subject:

> There is no gravity (unless a programmer chooses to
> simulate it), so weights and loads do not create a rationale
> for member sizes, shapes, and proportions. Ideas of
> structural expression and honesty lose all meaning. Indeed,
> there is no necessary distinction between up and down, or
> between vertical and horizontal elements (Mitchell 207).

Osmose, using the balance to guide the movements in this virtual
space is significant. Because of the nature of cyberspace, there is no such

thing as gravity. As stated by Hansen, the immersant let experience of spatial navigation penetrate into your body via the immediately felt physiological modifications produced by the inhalation and exhalation that triggered your vertical movement "and the body leaning that triggered your horizontal movement" (Hansen). Balance that is achieved by the body itself, is a way to center the body in this space. To center the body, is centering both the physical and spiritual body. Thus body becomes the subject. But as it is united with the environment, it becomes the object at the same time.

4. CONCLUSION

The aim of this thesis was to problematize the virtuality in contemporary discourses, as an attempt to overcome the boundaries of cyberspace that is supposed to be expressed only by technology, in terms of body and space. Contrary to the common understandings of virtuality as a problematic spatial category, in this thesis, it is argued that the space of virtuality has always been explored in 'other' spaces and that the water space allows us to redraw the boundaries. The significance of Char Davies' work for the inquest of this study is that her integration of technology and nature with transgressions of virtual reality technology (VR) have provided powerful insights in which to rethink the experience of space outside of the dualist logic.

In virtual reality, the subject is represented according to the basic oppositions of the dualist logic such as body/mind, inside/outside, subject/object, form/matter, masculine/feminine, etc. <u>Osmose</u>'s spatial representations undermine all these oppositions, by achieving the immersion of body and its journey within the same place. Davies challenges the set of boundaries that shape the body in virtual space and sets free the fundamental limits of the body within that new space. <u>Osmose</u>'s inclusion of the body is what challenges the cliché. In other words, in <u>Osmose</u> the space as the Novakian

space, dislocates any pre-existing structure within which it can be represented, and leads from the cliché towards the fluidity. It is a shift from conventional technological virtuality to fluid cyberspace in a Bachelardian sense: "we do not change place, we change our nature."

While Bachelard addresses the poetics of space, he does not deal with questions of gender; however water is usually associated with the feminine. Numerous feminist writers read it as the freedom of the female body to the realness of the land.

In the third chapter, Davies' argumentation on the immersion of the body is expanded over a discussion on the set of relations between freedom, water and embodiment. The bodies in Osmose announce a radical challenge to the classical notion of virtual reality (VR) as well as the patriarchal assumptions of cyberspace. Placing the human bodies into the site of the virtuality, Davies assigns them a transgressive character. She challenges the set of boundaries that shape virtual space, and in so doing, brings out or rather sets free the fundamental dualism carried onto virtuality. She conceives of Osmose bodies as acting out of virtual space, that leads them towards a non-technological pure presence of nature.
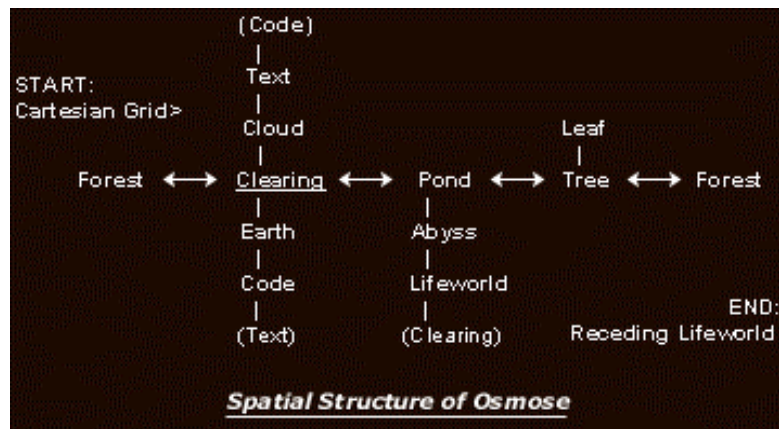
The space of Osmose indicates a breakdown in the conventional sufficiency of 3-D computer graphics. The virtual space in Davies' virtual reality (VR) is stripped of any representational functions assigned by the popular discourses on technology. In that respect, Davies does not invent a new

mode of representation of space but rather a strategy for the rethinking of nature. In other words, she draws from the technological space towards the fluid space.

The main argument of the thesis was based on the characteristics of water space, which may be a tool to understand the virtuality. Instead of serving as a proof of the similarities of underwater and virtual environments, the aim of the study was rather to propose another look to the notion of cyberspace through water. Unconstrained from the Cartesian dualisms of conventional virtual reality technology, Char Davies' <u>Osmose</u> served as a significant example of 'fluid cyberspace' to clarify the statement of the corporeality in virtual spaces. By observing the connections between water and cyberspace, especially as embodied in the work of Char Davies, it is explained that virtuality is not only articulated in context and constraints of technology but also in nature.

Throughout this thesis, various topics related to virtuality have been discussed to better understand how technological and natural spaces cope with their spatial surrounding and how this process can be improved or made easier. Especially the water space helps us to have another look through water. It helped to better understand many aspects of being in virtual space and in water space, and provoked a feeling of fluidity with all the different meanings attached to it. This study reminded once again of the water, the importance of which is often neglected by contemporary writing.

APPENDIX A

```
                    (Code)
                      |
                    Text
START:                |
Cartesian Grid>     Cloud                      Leaf
                      |                          |
      Forest <--> Clearing <--> Pond <--> Tree <--> Forest
                      |            |
                    Earth        Abyss
                      |            |
                    Code        Lifeworld
                      |            |                 END:
                    (Text)     (Clearing)       Receding Lifeworld

            Spatial Structure of Osmose
```

> **The spatial structure of Osmose**

Osmose (1995) is an immersive interactive virtual-realty environment installation with 3D computer graphics and interactive 3D sound, a head-mounted display and real-time motion tracking based on breathing and balance. Osmose is a space for exploring the perceptual interplay between self and world, i.e. a place for facilitating awareness of one's own self as consciousness embodied in enveloping space.

Osmose Immersant, video image from Osmose installation (1995)
©1995-2000, Char Davies/Immersence Inc. & Softimage Inc

Osmose Immersant Wearing Interface Vest, Osmose (1995)
Courtesy of Jacques Dufresne.
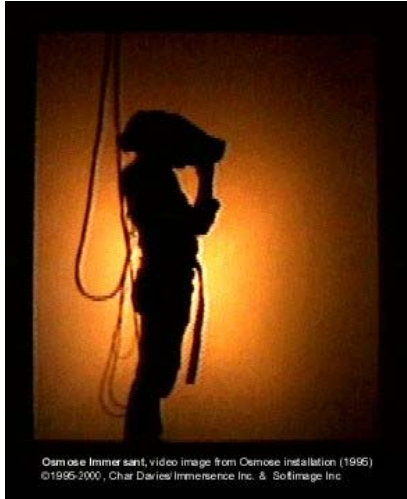
| **Osmose Immersant** | **Osmose Immersant Wearing Interface** |

Immersion in Osmose begins with the donning of the head-mounted display and motion-tracking vest. The first virtual space encountered is a three-dimensional Cartesian Grid, which functions as an orientation space. With the immersant's first breaths, the grid gives way to a clearing in a forest. There are a dozen world-spaces in Osmose, most based on metaphorical aspects of nature. These include Clearing, Forest, Tree, Leaf, Cloud, Pond, Subterranean Earth, and Abyss. There is also a substratum, Code, which contains much of the actual software used to create the work, and a superstratum, Text, a space consisting of quotes from the artist and excerpts of relevant texts on technology, the body and nature. Code and Text function as conceptual parentheses around the worlds within. Through use of their own breath and balance, immersants are able to journey anywhere within these worlds as well as hover in the ambiguous transition areas in between. After fifteen minutes of immersion, the LifeWorld appears and slowly but irretrievably recedes, bringing the session to an end.

In Osmose, Char Davies challenges conventional approaches to virtual reality. In contrast to the hard-edged realism of most 3D-computer graphics, the visual aesthetic of Osmose is semi- representational/semi-abstract and translucent, consisting of semi-transparent textures and flowing particles. Figure/ground relationships are spatially ambiguous, and transitions between worlds are subtle and slow. This mode of representation serves to 'evoke' rather than illustrate and is derived from Davies' previous work as a painter. The sounds within Osmose are spatially multi- dimensional and have been designed to respond to changes in the immersant's location, direction and speed: the source of their complexity is a sampling of a male and female voice.

Based on responses from approximately 7,500 thousand individuals who have been immersed in Osmose since the summer of 1995, the after-effect of immersion in Osmose can be quite profound. Immersants often feel as if they have rediscovered an aspect of themselves, of being alive in the world, which they had forgotten, an experience which many find surprising, and some very emotional. Such response has confirmed the artist's belief that traditional interface boundaries between machine and human can be transcended even while re-affirming our corporeality, and that Cartesian notions of space as well as illustrative realism can effectively be replaced by more evocative alternatives. Immersive virtual space, when stripped of its conventions, can provide an intriguing spatio-temporal context in which to explore the self's subjective experience of "being-in-the-world" -as embodied consciousness in an enveloping space where boundaries between inner/outer, and mind/body dissolve.

The user-interface is based on full-body immersion in 360 degree spherical, enveloping space, through use of a head mounted display. In contrast to manually based interface techniques such as joysticks and trackballs, Osmose incorporates the intuitive processes of breathing and balance as the primary means of navigating within the virtual world. By breathing in, the immersant is able to float upward, by breathing out, to fall, and by subtlety altering the body's centre of balance, to change direction, a method inspired by the scuba diving practice of buoyancy control. Whereas in conventional VR, the body is often reduced to little more than a probing hand and roving eye, immersion in Osmose depends on the body's most essential living act, that of breath -not only to navigate, but more importantly- to attain a particular state-of-being within the virtual world. In this state, usually achieved within ten minutes of immersion, most immersants experience a shift of awareness in which the urge for action is replaced by contemplative free-fall. The experience of being spatially enveloped, of floating rather than flying or driving is key to the work. Being supercedes doing. Solitude is a key aspect of the experience; as the artist's goal is to connect the immersant not to others but to the depths of his or her own self.

Public Installation of Osmose

Osmose: The public installation of Osmose includes large-scale stereoscopic video and audio projection of imagery and sound transmitted in real-time from the point-of-view of the individual in immersion (the "immersant"): this projection enables an audience, wearing polarizing glasses, to witness each immersive journey as it unfolds. Although immersion takes place in a private area, a translucent screen equal in size to the video screen enables the audience to observe the body gestures of the immersant as a poetic shadow-silhouette.

Technical Specifications: SOFTIMAGE® 3|D modeling, animation and development environment; Silicon Graphics Onyx2 Infinite Reality visualization supercomputer; Mac computer, sound synthesizers and processors, stereoscopic head-mounted display with 3D localized sound, breathing/balance interface vest, motion capture devices, video projectors, and silhouette screen.

Team Credits: Concept, direction, art direction by Char Davies,

Custom VR software by John Harrison,

Computer graphics by Georges Mauro,
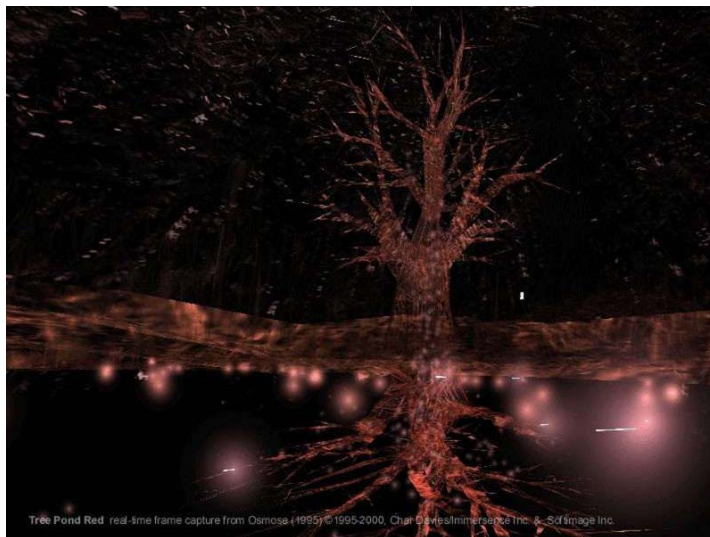
Sonic architecture/programming by Dorota Blazsczak,

Sound composition/programming by Rick Bidlack.

APPENDIX B

Real-time frames captured from Osmose:

Forest and Grid real-time frame capture from Osmose (1995) ©1995-2000 Char Davies/Immersence Inc. & Softimage Inc.

Forest and Grid

Tree Pond Red real-time frame capture from Osmose (1995) ©1995-2000 Char Davies/Immersence Inc. & Softimage Inc.

Tree Pond Red

| Tree | Rose Tree |

Rocks and Roots

REFERENCES

Bachelard, Gaston. <u>The Poetics of Space</u>. Trans. Maria Jolas. New York: Orion
    Press, 1964.

- - -. <u>Water and Dreams: an Essay on the Imagination of Matter</u>. Trans. Edith R.
Farrell. Dallas: Pegasus Foundation, 1983.

- - -. Foreword. <u>Water and Dreams: an Essay on the Imagination of Matter</u>. By
Joanne H. Stroud. Trans. Edith R. Farrell. Dallas: Pegasus Foundation, 1983.
vii-x.

Baudrillard, Jean. <u>Simulacra and Simulation</u>. Trans. Sheila Faria Glaser. Ann
    Arbor: University of Michigan Press, 1994.

Benedikt, Michael. "Cyberspace: Some Proposals." <u>Cyberspace: First Space</u>.
    Ed. Michael Benedikt. Cambridge: MIT Press, 1991. 119-224.

<u>Big Blue</u>. Dir. Luc Besson. Perf. Rosanna Arquette, Jean-Marc Barr, and Jean
    Reno. Columbia/Tristar Studios, 1988.

<u>Blade Runner</u>. Dir. Ridley Scott. Perf. Harrison Ford, Rutger Hauer, and Sean
    Young. Warner Studios, 1982.

Connery, Christopher L. "The Oceanic Feeling And The Regional Imaginary."
    <u>Global/Local: Cultural Production and the Transnational Imaginary (Asia-
    Pacific Series)</u>. Ed. Rob Wilson, Wimal Dissanayake. Durham and
    London: Duke UP, 1996. 284-311.

Cousteau, Jacques-Yves, and Frederic Dumas. <u>Le Monde du Silence</u> (The Silent
    World). Paris: Le Livre de Poche, 1959.

Davies, Char. "Changing Space: Virtual Reality as an Arena of Embodied
    Being." <u>The Virtual Dimension</u>. Ed. John Beckmann. New York: Princeton
    Architectural Press, 1998. 144-155.

- - -. "Osmose: Notes on Being in Immersive Virtual Space." <u>Digital Creativity</u>.
    27 May 1998: 12 Feb. 2003. <http://www.immersence.com/osmose/
    os_notes.htm>.

- - -. and John Harrison. "Osmose: Towards Broadening the Aesthetics of Virtual Reality." <u>Softimage Inc.</u> 12 Feb. 2003. <http://www. immersence.com/publications/os_notes02.htm>.

- - -. <u>Osmose</u>. 2 June 2003 <http://www.immersence.com>.

- - -. <u>Ephémère</u>. 2 June 2003 <http://www.immersence.com>.

Davis, Erik. "Osmose." <u>Wired</u> 4.08 (1996). 12 Feb. 2003 <http://wired.com/ wired/archieve/4.08/osmose.html>.

Dyson, Francis. "'Space', 'Being', and Other Fictions in the Domain of Virtual." <u>Virtual Dimension</u>. Ed. John Beckmann. New York: Princeton Architectural Press, 1998. 46-61.

Emerson, Ralph Waldo. "Circles." <u>Essays: First Series</u>. 1841. 4 June 2003 <http://www.rwe.org/works/Essays-1st_Series_10_Circles.htm>.

Featherstone, Mike and Roger Burrows. "Cultures of Technological Embodiment: An Introduction." <u>Cyberspace/Cyberbodies/Cyberpunk</u>. Ed. Mike Featherstone and Roger Burrows. London: Sage Publications, 1995. 1-20.

Fernie, Stuart. "Characters and Themes in Luc Besson's 'Subway', 'The Big Blue', 'Nikita' and 'Leon'." 4 June 2003 <http://www.geocities.com/ stuartfernie/besson.htm>.

Fisher, Scott. "Virtual Interface Environments." <u>Multimedia from Wagner to Virtual Reality</u>. Ed. Randall Packer and Ken Jordan. New York: Norton & Company, 2002. 257-266.

Freud, Sigmund. <u>Civilization and Its Discontents</u>. Trans. Joan Riviere. New York: Dover, 1994.

Gibson, William. <u>Neuromancer</u>. New York: Ace Books, 1994.

Gigliotti, Carol. "Interview with Char Davies." West Vancouver, British Columbia: Canada. November 2001. 12 Feb. 2003 <http://immersence. com/bibliography/nparadoxa_B.html>

Grosz, Elizabeth. A. <u>Space, Time, and Perversion</u>. New York: Routhledge, 1995.

- - -. "Cyberspace, Virtuality, and the Real: Some Architectural Reflections" <u>Anybody</u>. Ed. Cynthia C. Davidson. Cambridge: MIT Press, 1997. 109-117.

Hansen, Mark. "Embodying Virtual Reality: Touch and Self-Movement in the Work of Char Davies." <u>Critical Matrix: The Princeton Journal of Women</u>,

Gender and Culture. Making Sense 12. 1-2 (2001): 112-147. 4 June 2003 <http://www.immersence.com/bibliography/MHansen-EmbodyingVR-N. html>.

Haraway, Donna. "A Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1960's." The Gendered Cyborg. Ed. Gill Kirkup, Linda Janes, Kath Woodward, Fiona Hovenden. Routheledge: London; New York, 2000. 50-58.

Hegel, Georg Wilheim Friedrich. The Philosophy of History. Trans. J. Sibree. New York: Dover, 1956.

Heim, Michael. The Metaphysics of Virtual Reality. New York: Oxford UP, 1993.

- - -. "The Design of Virtual Reality." Cyberspace/ Cyberbodies/ Cyberpunk. Ed. Mike Featherstone and Roger Burrows. London: Sage Publications, 1995. 65-77.

Irigaray, Luce. Between East and West: From Singularity to Community. Trans. Stephen Pluháček. New York: Columbia UP, 2002.

- - -. Marine Lover of Friedrich Nietzsche. (Amante Marine) Trans. Gillian C. Gill. New York: Columbia University Press, 1991.

Leder, Drew. The Absent Body. University of Chicago Press, 1990.

Melville, Herman. Moby Dick. London: Penguin Books, 1994.

Michelet, Jules. La Mer (The Sea). Ed. Marie-Claude Chemin and Paul Viallaneix. Lausanne: L'Age d'Homme, 1980.

Mitchell, William J. "Antitectonics: The Poetics of Virtuality." The Virtual Dimension. Ed. John Beckmann. New York: Princeton Architectural Press, 1998. 205-217.

Novak, Marcos. "Liquid Architectures in Cyberspace." Cyberspace: First Space. Ed. Michael Benedikt. Cambridge: MIT Press, 1991. 225-254.

Olson, Charles. Call me Ishmael. Baltimore, Md.: Johns Hopkins UP, 1997.

Packer, Randall, and Ken Jordan. "Overture". Multimedia from Wagner to Virtual Reality. Ed. Randall Packer and Ken Jordan. New York: Norton & Company, 2002. xv-xxv.

Pesce, Mark. "Osmose en IK/Osmose and Me." Wave. 17: 44-47. 12 Feb. 2003. <http://www.immersence.com/osmose/os_osmoseme.htm>.

Sprawson, Charles. Haunts of the Black Masseur. London: Vintage, 1993.

Stone, Allucquère. Rosanne. "Will the Real Body Please Stand Up?: Boundary Stories about Virtual Cultures." <u>Cyberspace: First Space</u>. Ed. Michael Benedikt. Cambridge: MIT Press, 1991. 81-119.

- - -. <u>The war of desire and technology at the close of the mechanical age</u>. Cambridge: MIT Press, 1995.

Sutherland, Ivan. "The Ultimate Display." <u>Multimedia from Wagner to Virtual Reality</u>. Ed. Randall Packer and Ken Jordan. New York: Norton & Company, 2002. 252-256.

Treadwell, Andrew. "Virtual Transcendence." 24 Sep. 2002. 4 June 2003 <http://users.ox.ac.uk/~engs0294/andrewtreadwell/ma/right.htm>.

Turkle, Sherry. <u>The Second Self: Computers and the Human Spirit</u>. New York: Simon and Scuster, 1984.

- - -. <u>Life on the Screen : Identity in the Age of the Internet</u>. New York: Simon & Schuster, 1995.

Varinlioğlu, Güzden and et al. <u>Basic Scuba Diving</u>. Ankara: METU-Subaqua Society, 2002.

Žižek, Slavoj. "Cyberspace, Or, The Unbearable Closure of Being." <u>The Plague of Fantasies</u>. London: Verso, 1997. 127-167.