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TECHNO-HUMAN :

EXPEDITION OF ALTERED HUMAN
BY TECHNOLOGY
FROM SCIENCE-FICTION CINEMA
TO THE POST-INDUSTRIAL WORLD

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<p>Tiivistelmä – Abstract</p> <p>This thesis defines techno-human as a new notion to describe altered human body and identity by technology following its expedition from the fictional world of science-fiction cinema to non-fictional world of post-industrial society. Science-fiction cinema has always significant role as an art form to define and discuss the future of interaction between human and technology.</p> <p>In 1993, Scott Bukatman has studied this reformed human figure in SF cinema with the notion of terminal body and identity, after ten years, Giuseppe O. Longo (2003) use the term homo-technologicus define the human being of the 21st Century. In addition, today, almost ten years later than Longo, combining the study of Bukatman for science-fiction cinema and the study of Longo for the actual life, this thesis, so the concept of techno-human, discusses the cyborgs, artificial organs, prosthesis, information and communication technologies (ICTs), the Internet, cars, cyber and virtual space, automated homes and such in both fictional and non-fictional areas. Besides, the thesis compares the post-industrial society of today with the proclamation of science-fiction cinema about future in terms of human and technology relationship trying to find the similarities between the today and the future of the science-fiction.</p> <p>As human being is a whole existence with the body and identity, thesis includes the altered body and the identity of techno-human together with their relation considering technology and machines affects both of them. With these two features of human, further, the thesis concentrates on the space which has become significant figure in the SF films for the reason that the space is where techno-human lives, therefore; the body and identity is affected by the space in both fictional and non-fictional area.</p> <p>In conclusion, the thesis discusses physical and personal existence of human who is affected by technology and machines, using the notions of techno-body and techno-space and watching the expedition of these notions and techno-human from science-fiction cinema to today's world.</p>	
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<p>Tiivistelmä – Abstract</p> <p>Pro gradu –tutkielmani määrittelee techno-humanin käsitteen uudenaikaisena lähtökohtana kuvata teknologian mahdollistamaa ihmisruumiin ja identiteetin muutosta, sekä tarkastelee tämän käsitteen siirtymää tieteisfiktio- eli sci-fi-elokuvasta jälkiteolliseen yhteiskuntaamme. Tieteisfiktioelokuvalla taiteenlajina on ollut pitkään merkittävä rooli keskustelussa ihmisen ja teknologian välisen vuorovaikutuksen tulevaisuudennäkymistä.</p> <p>Vuonna 1993 Scott Bukatman tutki ihmiskehon uutta olemusta ja identiteettiä käsitteellä terminal body. Kymmenen vuotta myöhemmin Giuseppe O. Longo (2003) määritteli 2000-luvun ihmisen käyttäen käsitettä homo-technologicus. Tänäpä, lähes kymmenen vuotta Longon määritelmän jälkeen pyrin pro gradu –tutkielmassani keskustelemaan techno-humanin ideasta ja käsitteen merkityksestä muun muassa cyborgien, proteesien ja tekoelinten, informaatio- ja viestintäteknologian, Internetin, autojen, virtuaalimaailmojen, automatisoitujen kotien sekä muiden, niin fiktiivisten kuin tosiperäisten ilmiöiden pohjalta. Käsitteen sci-fi-elokuvaa Bukatmanin tutkimuksen perustalta, ja reaalielämän ilmiöitä puolestaan Longon tutkimukseen nojaten. Tämän lisäksi tutkielmani vertailee nykypäivän jälkiteollista yhteiskuntaa sci-fi-elokuvan luomiin, ihmisen ja teknologian yhteisiin tulevaisuudennäkymiin, pyrkien löytämään niiden välisiä yhtäläisyyksiä.</p> <p>Koska ihminen on kokonaisuus, joka käsittää sekä kehon että identiteetin, yhdistän tässä työssäni myös techno-humanin muuttuvan kehon ja identiteetin yhdeksi kokonaisuudeksi, jonka kumpaankin puoleen teknologia ja koneet vaikuttavat. Myös avaruudesta on tullut tieteisfiktioelokuvien merkittävä tekijä, sillä techno-human asuttaa tulevaisuuden avaruutta, ja koska sekä keho että identiteetti saavat vaikutteita ympäristöltä niin fiktiivisissä kuin tosielämän konteksteissa.</p> <p>Lopuksi, tutkielmassani pyrin tarkastelemaan ihmisen fyysistä ja henkilökohtaista olemassaoloa, teknologian vaikutuksen alaisena, käyttämällä käsitteitä kuten techno-body ja techno-space, sekä selittämään näiden käsitteiden siirtymää sci-fi-elokuvan maailmasta meidän nykypäivän todellisuuteemme.</p>	
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1. Introduction

“We cannot think any longer of man without a machine”

Bruce Mazlish (1972: 229)

“Technology and the human are no longer so dichotomous”

Scott Bukatman (1993: 5)

Cinema has always been an art form which reflects what and how has happened in this world from the human point of view using various way of audiovisual communication to interact with the viewers; with us, therefore, the questions and answers that people ask about everything have always been important for the cinema. Considering every film genre asks the questions and gives the different answers; according to Vivian Sobchack; science-fiction is “a film genre which emphasizes actual, extrapolative, or speculative science and the empirical method, interacting in a social context with the lesser emphasized, but still present ... in an attempt to reconcile man with the unknown” (Sobchack, 1997: 63). In the light of Sobchack’s idea about the relationship between man and the unknown; in the post-industrial society, technology has become the unknown figure affecting our daily life and our future. In this sense, as technology and science improve rapidly; every day, there are new machines and tools that we have to be exposed. For this reason, mainly, the role of SF genre has become exploring how these developments and tools affect human and what kind of interaction there is between human and technology. In other words, science-fiction cinema has had significant role as an art form to define and discuss the unknown and possible future of interaction between human and technology. As science-fiction cinema promises, today, in the non-fictional world, human being is exposed by machines; computers, mobile phones, the Internet, television, cars, prosthesis and any other machines. Obviously, there are very important similarities between the human of post-industrial society and the represented human in the world of SF cinema in terms of physical body and personal identity. According to similarities of these two converted human concepts; this thesis aims to examine representations of altered human body and identity by technology in science-fiction cinema and how these representations have become real in non-fictional post-modern society today. In addition, the thesis explains and uses a new term “techno-human” to define new hybrid human version which has similar identical and physical features with the represented human from science-fiction cinema and the real world of today. In

the book “Terminal Identity” (Bukatman, 1993), Scott Bukatman claims significance of altered human figure by technology in SF cinema using his own term *terminal identity* which is related with the identity of techno-human and Bukatman says: “terminal identity is a form of speech, as an essential cyborg formation, and a potentially subversive reconception of the subject that situates the human and the technological as coextensive, codependent and mutually defining” (Bukatman, 1993:22). Considering the definition of Bukatman, there is a strong relation between two human figures in SF cinema and the actual world; both are modified and their autonomies are awakened as Bukatman emphasizes the same idea for his *terminal* concept. Besides, to define the human of the post-industrial society, Giuseppe O. Longo uses the term *homo technologicus*: “a symbiotic creature in which biology and technology intimately interact” and he explains this term as “homo sapiens transformed by technology” which is a new transformational type in a new space (Longo, 2003: 23). In this regard; in today; techno-human is the version of *homo technologicus* and considering these both definitions of Bukatman and Longo; -Bukatman’s is for SF cinema and Longo’s is for the non-fictional world- techno-human links these both notions concentrating on the alteration of body and identity by technology of human comparing with representation of the human in SF cinema. Furthermore, in structural meaning, techno-human does not only belong to the world of today or the world of SF cinema, it belongs to both of them; its area and time are also hybrid as its identity and body.

Notion of hybrid “techno-human” includes implanted, virtual, extended, mobilized and modified bodies, virtual and digital identity. Explaining and analysing of all these features of techno-human will show the process how and what kind of changes human being is exposed by technology during the late 20th and the 21st Century referencing to the SF cinema. Additionally, techno-human may be considered similar with the posthuman notion, but the studies on posthuman comprise many different perspectives and analyses to explain causes and consequences of the human kind of modern era such as; sociological, psychological, environmental, historical and scientific. In this regard as all post- studies are the big subject matters, I will refer these notions to the previous studies of my subject and I will explain these previous studies in the following part to emphasize the differences and also the similarities between my subject and these notions.

Besides, the thesis brings the contradiction question about the interaction between the science-fiction cinema and the non-fictional world. SF cinema has always been affected by the non-fictional world and also has brought extra cultural, environmental and humanitarian concerning for what and how the future world might be. For the reason that SF cinema has

always been there and it will be, it makes more important to analyse and examine the relation between SF cinema and reality, considering and covering the subject of how human and the real world might be affected by SF cinema. Moreover, predicating these features on the examples of science-fiction cinema, the thesis claims how cinema -especially science-fiction cinema- is important and successful to understand any possible situations which the human, the society and the environment might be involved in the future through technology.

On the following part, this introduction chapter includes the methodology which I use during my research, reading, film analysing and writing processes of the thesis. On the second part, for the background of my thesis, I discuss general terms and approaches using previous studies which are studied in the similar subjects related with the subject I study. In addition, the last part includes reviews and analyses of main notions which are involved the area of my subject; science-fiction cinema, body, identity, cyberculture, post- studies, digital media and culture, terminal identity, image, penetration and flesh.

1.1 Research Methods and Structure

Including film, (new) media, post-modern and cyberculture studies, my research is a multidisciplinary subject to examine each study field according to its own theories and terminology. For each study area, the research involves qualitative and exploratory research methods. These methods bring my study to identify new alterations and problems reviewing SF films, especially the films beginning from the 1980s until the recent day such as; *Terminator 1, 2 and 3* (James Cameron, 1984 & 1991; Jonathan Mostow, 2003), *Robocop* (Paul Verhoeven, 1987), *the Matrix* (Andy & Lana Wachowski, 1999), *Blade Runner* (Ridley Scott, 1982), *Back to the Future II* (Robert Zimcekis, 1989), *Artificial Intelligence* (Steven Spielberg, 2001), *Equilibrium* (Kurt Wimmer, 2002), *Avatar* (James Cameron, 2009), *Repo Men* (Miguel Sapochnik, 2010), *TRON* (Steven Lisberger, 1982) and others which are listed in the film list. Furthermore there are referee articles and books which are related with my subject methodologically and contextually. My materials that I use to reach the idea of techno-human, generally, has the common methodology to study the SF cinema and human in the view of modern period relating the subject with the film analysis and reviewing. Moreover, I have references which research the human and technology relationship in terms of modernity and post-human emphasizing the human body and identity is altered. The research includes different set of rules for each area for examination process. For film reviews; critical analysis involved in film criticism and theoretical approaches which are screen, dystopian and realist

film theories observing futuristic life forms and society, subjectivity of elements on the screen, content and reality relations. For instance, methodologically, analysing a SF movie, representation of the situation of altered human and the environment is important related with how this representation is showed using the cinema screen. Further, all the characters, machines (devices), spaces, clothes and even the music are the elements of the screen which are being analysed as the same elements of actual world are being analysed in articles and books. In the articles reviews, the method is to underline of qualitative method for the body, identity, cyberculture, media and post-industrial study subjects, understanding the relation between these terms and propounding their links to the idea of techno-human. On the whole, close analysis; including close reading and visual analysis, is the main methodology of my thesis as I concentrate on audiovisual elements of films combining, comparing and relating with the written materials, and both sources; visual and written are included descriptive observation.

Structural content of the thesis presents four chapters with introduction chapter. Following three chapters are separated according to main subjects of the research; surrounded and exposed body, altered identity and conclusion to compose significant elements to summarize the main subjects of techno-human and the thesis. Body and identity chapters compare each concept considering from different angles dividing each chapter to specific and substantial sub titles according to featured elements in SF cinema and post-modern society for human and techno-human.

Chapter 2: “Surrounded and Exposed Body” explains physical transformation of human being is exposed and analyses the process of how human becomes techno-human, comparing with the represented body of human in SF cinema. The chapter examines how technology penetrates to human and how human penetrates to technology in physical way; prosthesis, artificial organs, regenerative machines and so on. Moreover, the chapter reflects how machine terminates the human body (car accidents, guns) and also changes the duty of limbs (voice as on/off button, hands as pen). In addition the chapter focuses on how exterior part of the body interacts with the machines; mobile phones, mp3 players, earphones, cars and computers. In the last part of the chapter 2, thesis concentrates on redefinition of the mind and memory of techno-body and the process of this redefinition.

Chapter 3: “Altered Identity” studies how human identity is affected by technology and this affection created the new identity of techno-human. The chapter evaluates digitized identity of new human being through the Internet, virtual space and reality, media -television-, and social networks. Furthermore, the chapter includes, how human being, personally becomes alone and crowded at the same time, involving effects of new space on the identity. Considering

the issue of technophilia; the chapter explains the love of human being to the all devices; from mobile phones to cars; and the identification of human being with the machines, how they feel as a machine.

The last chapter, summarizing the general ideas and claims of the thesis, defines the relation of technology, today and SF cinema creating the triangle of these notions, and locating the techno human in the middle of this triangle, it declares the significance and existence of techno-human using the consequences of the thesis.

1.2 Background / Previous Studies, Approaches and Terms

1.2.1 Science-fiction

For the area of SF cinema, there are different approaches and previous studies to examine and use as references in the area of film studies. However, related with my thesis, I more concentrate on previous studies which have substantial claims and observations subjecting body and identity perspectives. One of the studies of Vivian Sobchack (1991) approaches post-futuristic environment of SF cinema mentioning simulated space, reformed consciousness, recruiting stations, the relation of space and time, temporal body and public spectacle (Sobchack, 1991: 223-281). Fredric Jameson (1982 & 1991) speaks about encountering of SF and postmodern culture in the post-modern period and he argues SF and postmodernism are not detached saying about SF “the estrangement and renewal of our present” (1991: 285) and he claims SF transforms our present to past (1982: 152) as I claim in this thesis, similar with Jameson, SF cinema effects our present as the past of the future and the existence of techno-human in today and in the world of SF cinema is the significant proof of this approach. Moreover, according to Jameson, video became dominant in culture and television is a reflection of real existence in society in the 1980s, and today, for the reason that all the environment and space have been changed entirely and rapidly, video and television have been replaced by their improved versions: screens, the Internet, and computers. Therefore, in terms of Jameson’s claim about domination of the video, today, more than what video provided in the past, screens allows techno-human to penetrate virtual world of the Internet, video, television, games and any other elements of new media. Every other day, screen and its contents are becoming dominant one in the new space, environment and society affecting the identity and the body of human. In this regard, from the beginning of the 1980s SF cinema has represented the all environment of future with screens and visuality as it was discussed by Scott

Bukatman in terms of *society of spectacle* (Bukatman, 1993), further there are SF films which use the *spectacle* as the main material of the society and space such as; *WALL-E* (Andrew Stanton, 2008), *Minority Report* (Steven Spielberg, 2002), *Blade Runner* (Ridley Scott, 1982), *The Fifth Element* (Luc Besson, 1997) and such.

Film and media scholar, Constance Penley states science-fiction cinema as the figure of postmodern period and he claims post-industrial society and SF cinema is connected. She observes the *Terminator* (James Cameron, 1984) and the machines in the movie in terms of sexual differences, time travelling and tech noir¹ considering the body as a subject and altered identity (1989: 197-211). Forest Pyle is another scholar who studies body and cyborg figures in SF cinema. His study includes analyse of cyborg and human relation in the *Terminator* (1984; 1991) and *Blade Runner* (Ridley Scott, 1982). He argues SF cinema has more popularity since the 1980s and SF movies have thematic and formal focus for hybrid of human and machine; and he emphasizes the movies such as *Terminator* and *Blade Runner* distorts the borders between human and inhuman -which I call the machines- (Pyle, 2000: 124-137).

In the book *Terminal Identity* (Bukatman, 1993), as he examines identity in science-fiction, Scott Bukatman claims significance of SF cinema as an art form. Bukatman claims SF cinema reaches mass society generating important recurrence because it is a part of mainstream cinema (1993: 12). About the meaning of SF cinema he says: “the meaning of SF films is found in their visual organization, and their inevitable attention to the act of seeing, the significance of special effects begins to emerge” (1993: 13). Thinking the techno-human, especially its body, Bukatman signifies the relation of body and SF and he mentions the body meets with new space, it is modified and its autonomy is awakened (1993: 16). However, when the effects of SF cinema on the society and human are studied today, –almost 20 years later than Bukatman– the awakening and modification of the body through SF needs a new perspective to research the new subject of the body considering casualties and efficacies between new human being and former one since non-fictional life became the reflection of SF cinema considering the similarities between the represented space and human being in SF cinema since the 1980s and today’s real world. Additionally, because of general dystopian conjectures of SF cinema, Bukatman claims being human is utopian in SF movies, because, for the future, it is difficult to imagine pure humanity; there will be more aliens, androids and evil computers than human if SF cinema has been justified (1993: 16). At this point, I believe that the future which Bukatman emphasized is our recent day as it has become to difficult to define human being separated from

¹ Tech noir is a term which combines science-fiction and film-noir genres. Also the term used as a bar name in *Terminator* (1984).

its technosized environment. In this regard, all critics and analysis which I have mentioned about SF cinema, forms the initial point for my subject techno-human, in terms of the alteration which has been in the fictional world in the triangle of human, technology and SF cinema. Further, when this triangle has become real in the triangle of human technology and real world of today; this expedition of human from SF cinema to the post-industrial society proves how SF cinema is important with its representations to compare the reality of the actual world with the cinema's fiction.

1.2.2 Body

The body has been examined by different and various study areas; such as sociology, psychology, biology, politics, literature, semiology and generally in humanities. Distinctively, the body figure that I use for my thesis is more related with -new-media, cinema, information and communication technology (ICT) including post-industrial, cyberculture and science-fiction studies. In the book *Mediating the Human Body* (2003), Leopoldina Fortunati, James E. Katz and Raimonda Riccini edit and collect articles about the process of how body is mediated through technology in general; mobile technology, television, cars, the Internet, prosthesis and such. They mention technology becomes the end of natural human body, manipulating and diversifying it and the relation between body and technology is defined as: “the body as natural technology has been falsely replaced today by technological innovation, which, as innovation, always presents itself as being better than what it replaces” (Fortunati et al. 2003: 3). In addition, for communication technologies, ICTs extend the limits of the body and expand the content of the body to transfer information and interpenetrating; technology infects the whole body (Fortunati et al. 2003: 4-7). In his article *Body and Technology*; Giuseppe O. Longo uses the term *homo technologicus*: “a symbiotic creature in which biology and technology intimately interact” and he explains this term as “homo sapiens transformed by technology” which is a new transformational type in a new space (Longo, 2003: 23). The idea of homo technologicus combines with my techno-human idea but just there are differentiations about identity perspective. Longo puts the body in the centre of his idea but my suggestion is to think the human as a whole concept. The body and identity are connected as the main and important parts of human being. The body is the proof of physical existence of being human and identity is what human being is in sociological, psychological, ideological and personal aspects. Therefore, it is serious for me how body is studied, but I cannot ignore the connection of body and identity referencing the previous studies which have been studied body and identity separated.

As Scott Bukatman defines the new identity aspect of the human in SF cinema as “terminal identity”, for the body perspective he uses “terminal flesh” term which is reformed by technologized environment of SF films mentioning other terms called “techno-organic” and “hyperbolic body” and as reported by Bukatman, the body has been composed substance of science-fiction (1993: 19). There is a strong connection between the body of techno-human and Bukatman’s *terminal flesh* in the context of embodied mind, body and memory as a defined subject of SF. Bukatman says: “the narratives of terminal flesh offer a series of provisional conclusions wherein the subject is defined, at different times, as its body, its mind, or sometimes its memory” (1993: 20). Furthermore, Bukatman remarks in the world of SF movies, body and soul are denied and everything we need can be found in technology; everything is mechanic (1993: 287-288).

Editors of the book *Posthuman Bodies* (1995); Judith Halberstam and Ira Livingston study posthumanity from standpoint of the body saying that;

“Posthuman bodies are the causes and effects of postmodern relations of power and pleasure, virtuality and reality, sex and its consequences. The posthuman body is a technology, a screen, a projected image [...] a contaminated body, a deadly body, a techno-body; it is, as we shall see, a queer body. The human body itself is no longer part of ‘the family of man’ but of a zoo of posthumanities” (Halberstam & Livingston, 1995: 3).

Moreover, Halberstam and Livingstone claim posthuman bodies do not belong to continuous timeline, they are the bodies from past and future but they live in today as present time catastrophe (1995: 4). In addition to this approach, the body of techno-human as a concept which includes represented human body in the future of SF cinema from the past time and the human body in the recent world of today is strongly related with the posthuman concept as the both notions bodily exist in hybrid times; past, present and future.

Stelarc, as a performance artist and scholar, considers the body is extinct and it needs to be shifted from its physical realm to its extended cyber and hybrid version saying: “the body must burst from its biological, cultural and planetary containment” (2000: 561). However, the body is already exploded from its traditional boundaries and it cannot live without the outer accessories and assistants. Stelarc contemplates more on extension of the body through prostheses and plug-in devices; extra ear, laser eyes, the third hand, fractal flesh, virtual body and artificial intelligence. Those devices which he studied and his art works (ping body, parasite, touch screen interface, exoskeleton and amplified body) remind the machines that we can see in SF movies, for instance; *Johnny Mnemonic* (Robert Longo, 1995), *Brainstorm* (Douglas Trumbull, 1983), *Minority Report* (Steven Spielberg, 2002) or *Robocop* (Paul

Verhoeven, 1987), moreover, there are very similar devices and machines that human body wears, carries or is implanted to develop the boundaries of the body or to fix the body to become complete such as; prosthesis, artificial organs, portable devices and such.

In brief, each scholar defines the body related with their own study area and the general idea they agree the human body has been changed. On this occasion, when Bukatman emphasizes the body representation as an altered realm of human existence in SF, in his artworks and articles, Stelarc compares the body and machine as two different competitors of real world of modern period. Furthermore, when the scholars such as Longo, Halberstam and Livingston try to define the new altered version of body using the notions such as *homo technologicus* and posthuman body, Stelarc claims that human body is obsolete considering the rise of the machines (Stelarc, 2000). According to these discussions, the body is not same as it was before the post-industrial and post-technosized society, for this reason, combining and comparing all these ideas and studies of scholars this thesis aims to create a new explanation for the body which is exposed by technology; that is the techno-body which comes from fictional world to the real one.

1.2.3 Identity

The root of my subject is connected to Scott Bukatman's (1993) *terminal identity* which he defines;

“Terminal identity is a form of speech, as an essential cyborg formation, and a potentially subversive reconception of the subject that situates the human and the technological as coextensive, codependent and mutually defining” (Bukatman, 1993: 22)

Bukatman examines *terminal identity* through science-fiction literature and cinema and his study involves; terminal image, terminal space, terminal penetration and terminal flesh referencing the human figure. In addition, Bukatman mentions human and technology becomes a whole figure and they are connected rhetoric and phenomenological way. Therefore, this new figure becomes the subject of science-fiction and this subjectivity comprises the centre of *terminal identity* (Bukatman, 1993: 2). According to time when Bukatman used the term *terminal identity* in 1993, there were examples of science-fiction to support his idea, but until today, there have been many developments in technology in post-modern world, therefore, now, there is possibility to study Bukatman's terms also for non-fictional world.

Alternatively, Sherry Turkle's *Second Self* should be considered as terminal identity for a non-fictional world. Turkle examines, identically, how people grow up with computers,

personalize the computers with themselves, love it and think themselves as machines (Turkle, 1984). She tries to define the new computer culture concentrating identical alteration of the human. Additionally, Turkle studies identity of the culture of simulation in “Life on the Screen” discovering reconstruction of the identity and aspects of the self through the Internet from virtuality to artificial life (Turkle, 1995).

1.2.4 Postmodern / Posthuman

The study area of postmodernism with other terms of the area; post-human and post-industrial, tries to define new notions or new version of existed notions; determining the new meanings. Postmodernism uses binary oppositions such as male/female, homosexual / heterosexual, (so called) east / west, right / left (political), imperial / communal and human / nonhuman. Therefore, defining the techno-human in SF cinema and in non-fictional world, it is impossible to neglect the relation and influences of postmodernism in the both area for the reason that the world of today and SF cinema include combination of postmodern binary oppositions that I have mentioned. In the SF films and today, we live in the environment that has the oppositions together and we try to make distinctive definitions for the world we live and for the world we see in the films. Both world are formed by the oppositions; for instance; we discuss the east and west as there are economical, sociological and cultural differences in both sides, or we have to define ourselves according to our sexual orientation, political views, wealth and such, in addition, since the 1980s, with the growing technology, machines (technology) has become binary opposition of human in the list of post-industrial society’s binary oppositions; and previously; this subject has been represented in SF films, and then it has become real, therefore, in the actual and fictional life, postmodern period has started consecutively.

According to N. Katherine Hayles, human is surrounded by technology and new space and the human is enlarged, extended and improved, therefore, post-human symbolizes this new version of human and additionally Hayles separates the idea of post-human ignoring the reality of human had before; meanings of life, environment, identity and body are redefined through post-human, thus, it may be called death of the human but obviously, post-human does not mean the death of human; it is the next level; it means more power, embodiment, extension and more intelligence with machines (Hayles, 1999: 283-291). In this regard, techno-human is an idea for this new human version connecting components in the context of post-human and for this reason, techno-human should not be considered as extension of those notions, it is something alternative. It is not the death of human and it is not the next level of the human, it is

behind of post-human, regenerated version of post-human considering the similarities between represented human in SF cinema and today's world.

In the study of *Postmodern Theory* (1991); Steven Best and Douglas Kellner examine postmodern period and its theoretical details from multiple directions; philosophy, humanities, cultural and politics aspects and compare the aspects of modernity and postmodernity. They claim modernity brought new elements to everyday life; new technologies, new art, new modes of transportation and communication, therefore, modernity became the reason of postmodernity; changing the way of life, behaviour, communication, identity and society. This situation comprising computers, media/new media, new forms of knowledge produced a postmodern social formation (Best & Kellner, 1991: 1-32).

Jean Baudrillard is a sociologist who concentrates postmodernism and post-structuralism and studies media and communication in general. He claims, in the modernity, production is conducted by the industry and in the postmodernity, the area of simulated information and signs; models, codes and cybernetics are dominant and controllers of the human and society (Best & Kellner, 1991: 118). Baudrillard observes the postmodernity is the era of subject which is the terminal of multiple networks (Baudrillard, 1983: 128). Baudrillard comments on the system of postmodernism and posthuman; "we are in a system where there is no more soul, no more metaphor of the body" (1988: 50-51). As stated by Baudrillard, postmodernity is the era of simulation and simulacra of human being in hyperreality (1988: 166, 184); on this occasion; as television has been a specific example for the simulacra in the time of Baudrillard in the 1980s; for today, the Internet has become the alternative of television with its multi-functional features and the form of television, especially the media and new media has moved from home to the space with screens, therefore this new form of media and the Internet can be counted as the part of simulation of the postmodern era.

1.2.5 Cyberculture

Jakub Macek, simply defines cyberculture as cultural issues related to *cyber-topics*; cybernetics, cyberspace, cyborgization (cyborgs), cyberdelic¹ or cyberpunk-more related with literature-² (Macek, 2005). Lev Manovich's more distinctive definition for the cyberculture is; arising culture with the integration of computers networks, online communities, new media, the Internet and other communication and information technologies (Manovich, 2003: 13-25). Adversely, Mark Dery and David Bell have convenient cyberculture definitions for both SF

¹ Cyberdelic is the combination of cyberspace, cybernetic and psychedelic.

² Cyberspace, cyberdelic and cyberpunk are my addition.

cinema and postmodern era. Mark Dery claims; “Cyberculture is divisible into several major territories: visionary technology, fringe science, avant-garde art and popular culture” (Dery, 1992: 509). For David Bell; “cyberculture is a way of thinking about how people and digital technologies interact, how we live together” (Bell, 2007: 5). Considering these definitions of cyberculture, techno-human is relevant with cyberculture for the reason that techno-human is one of the elements and consequences of the relation between human, technology and science including popular culture, new media and the Internet as the virtual space and network. Moreover, the consequences of this relation have been emphasized in the SF films using the elements such as cyberspace, cyborg (cybernetics) –hybrids of human and machine-, robots, artificial organs, prosthetics which almost all are available today. Therefore, it is possible to say that; partially, techno-human is formed by cyberculture as formed by post-industrial culture in the both fictional and non-fictional area.

Donna Haraway’s *Cyborg Manifesto* examines the social and gender issues through the notion of cyborg and she explains the main ideas and definitions to constitute critical manifestation. She emphasizes cyborg, cybernetic organism, is the combination of machine and organism, a kind of hybrid and cyborg exists in the actual world (Haraway, 2000: 291). This definition of Haraway is a supportive reference for me to move the techno-human from the fictional world of cinema to the real world that Haraway discusses in her manifesto. Furthermore, for the cybernetics, David Bell mentions cybernetics is a science and notion combining communication sciences and control in human beings and machines (Bell, 2007: 3). In addition, the way of controlling human beings by communication sciences is related with the techno-human, whereas the control creates affection between human, technology and science changing the nature of human being, the body and the identity.

Virtual Reality (VR) is considered as the part of cyberculture -more of cyberspace- and postmodern era, for why it is form of the interaction and junction of human and computer reality, generally in computer space. About VR, David Bell emphasizes “VR has become more useful conceptually, in terms of troubling ideas about what is ‘real’, as well as being widely depicted in science-fiction and cyberpunk.” (Bell, 2007: 19). According to Michael Heim, virtual reality is to be part of virtual world; he says: “VR is an event or entity that is real in effect but not in fact” (Heim, 1993: 109-128). Therefore, I will use the VR for physical and identical perspectives of techno-human; how human body is inserted to virtual space and environmentally the body is surrounded by the imaginary space; considering how human identity is recreated in virtual space and the perception of reality is distorted. However, I will not discuss VR and virtual space (or cyberspace) as a space which human penetrates with

gloves or plugs in with a cable or physically transported such as in the movies; *Johnny Mnemonic* (Robert Longo, 1995), *The Matrix* (Andy & Lana Wachowski, 1999) or *TRON* (Steven Lisberger, 1982) because today, techno-human interacts with the virtual space not like the way as it happens in these movies. “Yet”, there are not any plugs on human body, not any special gloves in common use or we cannot be transported into our computers yet, however as human, today, significantly, we use our body; our limbs, our movements; and there are parts of the machines that we use when we control or enter into the machine –not physically but identically-; keyboard, sensors, (remote) controller or touch screen. Therefore, in my subject, I use the notions of VR and virtual space for the technological environment that we use commonly today, such as; the Internet, computers, game consoles (Nintendo Wii or XBOX), mobile phones, tablet PCs, television, domestic electronics, any kind of vehicles and such. In this regard, any virtual interface and space of a machine or network might be the VR of techno-human. In addition, previous studies that I have mentioned about VR and cyberculture help me to understand differences and similarities of the reality and virtual reality of techno-human understanding the representation of VR and cyberculture in SF films, further, it is possible to say that even the VR and cyberculture are not completely same in SF films and non-fictional world, to clarify the environment of techno-human, I will use the terms technosized space and culture where techno-human has settled.

2. Surrounded and Exposed Body (Body of Techno-human)

2.1 Body with Machine; Techno-body

“Man merges with machine: we have arrived in a zone without borders”

Bukatman, (1993: 268)

The human body is reconstructed through technology in the post-industrial society, -specifically in the last two decades in real world-, and Stelarc explains this reconstruction as reposition of the body from the psycho realm to the cyber zone of interface and extension and he claims that the body needs this transformation to become the hybrid of human-machine (Stelarc, 2000: 560). In addition, to be exist and integrated in the world of techno-culture/space, one needs to improve his/her body but the nature does not help to regenerate the body,

therefore the human is constrained to use the advantages of the new technology to accommodate the body for our own time and for the future. Thus, in the way of becoming techno-human, interpenetration between body and technology; one allows technology to penetrate into the body so in this regard, the body is implanted, extended and altered by machines. The main reason of this penetration is that the body is also considered as a machine, but the natural one; then it has been necessary to enhance it with the artificial limbs and any other devices to develop and generate the capacities of availability for a cognitive and an operative sense (Fortunati, 2003: 61)¹. Furthermore, Stelarc mentions that redesigning of the body altering, implanting and extending it ends with the redefining the human saying; “it is no longer meaningful to see body as a site for the psyche or the social, but rather as a structure to be monitored and modified (...) the body is an object for designing.”(Stelarc, 2000: 562). In addition, making the body as an object redesigning it with technology and machines; electronic and robotics; as a result, body loses its characteristic features. However, at the same time, attiring the body with mechanical parts, it makes the body feel immortal and irrevocable. In this sense, techno-human exists to be a machine or machinelike, because, even the human being has possibility to change his/her own body in a natural way, the science and technology exceed the possibilities what people can do to their own body. Thus, technology allows human to create a better body in the shape and situation which human wants, in this case, with this excitement of the human to make penetrate technology into the body, bio-technological evolution starts with this desire (Longo, 2003: 25-26-29) and in another sense; when artifacts machines are transported inside the body, technological evolution starts (Somalvico, 2003: 37). However, it is necessary to decide that; does bio-technological evolution become in positive or negative way? Or is it an evolution in literal? Different than Longo, Leopoldina Fortunati emphasizes the penetration of technology causes devolution of the human, saying;

“The technology that penetrates our bodies often saves our lives, returns us to health, broadens our means of communication, or gives us control – but technology always, paradoxically, results in our devolution. Technology modifies us radically in ways that inevitably cause some type of suffering or limitation” (Fortunati, 2003: 83).

This is what I also discuss for the differences between the human body and techno-body; when the techno-body has better conditions and advantages to live in the technosized environment, however, it has also destructive limits and results depending on the technology around and inside of it, and it moves the human body to next level which the body is devaluated too, it

¹ Fortunati cited the first part from Longo, 1999.

means natural body is decomposed. In this regard, merging the ideas of Longo and Fortunati, techno-body is both bio-technological evolution and the devolution of the body. The body of techno-human embraces the positive evolutions and negative devolutions combining them into one's body and for this reason, literally, I think it would be better to see techno-body (also techno-human) as a revolutionist notion accepting positive and negative results of the technological invasion on the body and the relation of body and the machine through changing of conditions, attitude, modifications and operations.¹ In other words, technology revolutionizes the body in a good and bad way, and in conclusion, the body of techno-human is created by technology and the nature.

Obviously, Stelarc's *obsolete body* idea is another perspective to look at the machine and body relation through the human body and techno-body in terms of "-lution" concept which I have mentioned. Stelarc claims that the human body cannot survive the lack of food, water and oxygen and cannot compete with the technology in terms of form and function, because it has new environment and its performance is not enough for its own age today, for this reason the body becomes obsolete and cannot improve by itself, it needs all implantation and extension by technology; in addition Stelarc's brief claim is that "evolution ends when technology invades the body" (Stelarc, 2000: 561, 562, 563). On the contrary; considering the terms of bio-technological evolution or devolution of the body, it proves that the alteration of the body is still in the process; therefore, Stelarc's idea *obsolete body* becomes imaginary in the conditions of today. In fact, the body is considered as the organic machine and it does not change the fact that it needs inorganic machines. However, I think, calling the organic body as an obsolete one, does not change the fact that we still need it to not forget that we are human. Therefore, the organic body just needs to be improved to be techno-body, not to be junked. Furthermore, during the improvement process of human body with the all technological invasion, with the revolution as I have claimed, for sure; the body loses its own natural form and concept, but it still needs to protect the organic parts which come from nature not to isolate the body from the nature. Additionally, if the body is obsolete, all machines which are created to improve the organic body would become useless for the reason that there will not be organic body to put the machines on and without a doubt; all machines are here because the body is still here and the body needs them. For this reason, body still exists and this is the reason why I use the term techno-body which does not ignore the human body completely and its technological

¹ My definition for techno-body as a revolutionist notion is referenced from the literal meaning of revolution which is (not only political sense); a dramatic and wide-reaching change in conditions, attitudes, or operation (http://oxforddictionaries.com/definition/revolution?rskey=1Kq18Y&result=1#m_en_gb0707660)

revolution, and conversely, the term techno-body, also techno-human, is used for the combination of mechanic and organic parts of the human; physically and identically. Thus, the organic body is involved in my subject and it is still there. Obviously, not only techno-body, other terms such as posthuman body and cybernetic body also include the organic body in their definitions for the reason that they cannot ignore human organism and human nature when they use the body as a domain/realm to alter and invade. It is clear that the body is changed through the revolution that occurs with the technology and its tools when the body is “dominated, destroyed and mutilated” (Berthelot, 1991: 392). On the whole, the body is not completely *obsolete* yet, but it is changed for the reason that being a body is not enough for the human of today; therefore, the techno-body becomes something which the human should have, in a sense the human body is born to be organic and improved to have inorganic. In addition, the revolution of this new owned body has the technology as a component, so its physical appearance changes, in Stelarc’s term; architecture of the body is changed, thus its perception is adjusted and extended (Stelarc, 2000: 562, 563); in brief; the organic body is technosized revolutionary through techno-body.

Evidently, through the revolution of the techno-body; technological invasion is happened in two different ways; one is to improve the body making the body more powerful to connect and communicate the body with its outer environment; and another one is to complete the body fixing its vanished parts. Likewise, similar with these two ways, Marco Somalvico describes the first of these invasions with the wearable technology to reach outside and the second one as implantation technology into human body to carry out disabled functions; to enforce and automate the body (Somalvico, 2003: 31). According to these definitions and division of the body and technology relation, the invasion and surrounding of the body by machines/devices is done through any kind of technological products such as: artificial organs, micro-organic devices, prosthesis, wearable computers, nanotechnologies, sex toys, security and safety equipment, plastic surgery, arts / body arts and so on. Additionally, in the late 20th Century, with the all these agents, the body also has become the main ground for the information and communication technologies (ICTs) to conquer making the body less unknown and hidden. In this regard, when the body becomes a communicative object through ICTs, it also involves the content of the communication systems; production, exchange and consumption (Calefato, 2003: 163). Besides, after the designing the new body, the former body has become weaker, and the period of the techno-body starts in the way of improving and altering the body alienating it from its pure natural form. In this regard, since the technology

has invaded the body, the body could not protect its natural simplicity and this new body –as I named techno-body- that is under the effect of science and technology for the reason that “the discourse of science transforms human to machine” (Bukatman, 1993: 246) and it is said for the technology too, considering interrelation between science and technology; as both area support each other to help finding new ways to change human life positively and negatively.

Significantly, it is important to mention the *cyborg* idea of Donna Haraway, *the cybernetic organism* (2000: 291) if techno-body is considered as a hybrid notion in the context of combination of natural organism and machine in the area of bio-technology. The body of this new bio-technology might be considered similar with the *cyborg* concept which is generally defined as a presence which is a union of the cybernetic and organism at once, and also a blend of flash and inorganic (Neiger, 2003: 57). Similarly, techno-body is a human body which is converted by technology, a new form of the human body, therefore, it is possible to say that cyborg is related with the techno-body and there is an interaction between both. However, considering the origins of both terms according to the SF cinema, I think these both terms have different origins. I mean they both involve the elements of human and machine, and both have commonly studied altered human body in terms of fictional and non-fictional world. In this case, the definition and the components of cyborg as a notion has been used and analysed through the SF cinema; such a few examples; T-100 in *Terminator* (James Cameron, 1984), the replicant of *Blade Runner* (Ridley Scott, 1982) or the cyborg cop; Motoko Kusanagi of *Ghost in the Shell* (Mamoru Oshii, 1995) have always been analysed with the cyborg point of view and all these characters have been named as cyborgs. These cyborg examples are produced as the combination of the organic body and cybernetics; therefore, they had never been human and never had only organic human body. They were *born* as the cyborgs, on the contrary, techno-body approaches the machine and body relation involving the organic human body as the origin of the body, it is the initial point to discuss the techno-body in the conditions of the both fictional and non-fictional world, thus, this is the point that I have mentioned both notions' origins are different.

According to its origin, the cyborg term has been used since the 1980s, commonly in the 1990s, however, for today, for the reason that there is not any creature yet which is born or created as a cyborg in its beginning, to explain the human body which is born naturally organic and then altered by technology; the term techno-body is better to describe altered human body. Therefore, techno-body as an idea and the definition comes from the human body. In this occasion, Tomas Maldonado also emphasizes the need of hybrid notion without

separating the terms for the exchange between machine and human referring to the thesis of Georges Canguilhem, and Maldonado says;

“The thesis put forward 30 years ago by Georges Canguilhem (1971)¹ about the continuity between life and technique, between the organism and the machine, seems to be meeting with definitive confirmation. We do not have androids on the one hand and nonandroids on the other. Exchanges between them are now intense and frequent, and phenomena of (near) hybridization and symbiosis are the order of the day.” (Maldonado, 2003: 19)

On the whole; as cyborg is represented in SF cinema with its body and machine combined body; techno-body is the hybridization of androids (machines) and nonandroids (human) that Maldonado claims and also it addresses the altered and technosized human body of both fictional and non-fictional world. In other words, techno-body was an organic body at first, and then it has become hybrid; it has become a cyborg, not created as a cyborg.

Similarly, with the parallel of non-fictional life, the evaluation of the body in SF cinema has also strongly been emphasized with the notion of cyborg and in many SF movies; the content of cyborg is used as an alternative to human. Besides, SF cinema also applied its theories and predictions on the realm of cyborg to reach a specific and unique idea of this new artificial alternative version of human body. In this regard, Patrizia Calefato places the cyborg to similar condition through science-fiction as I claim, saying:

“The cyborg, an invention of narrative fiction and cinema in the 1980s, illustrates the triumph of organic and inorganic accretions to the body and the growing influence of the ‘machine’ over life, ranging from the contact lenses to artificial limbs and organs, to personal computers. The suggestiveness of the cyborg lies in its representing a tangible form of science-fiction: the infinite enhancement of bodily functions and the biological incorporation of a ‘second nature’, to the point almost of mutating life itself. The cyborg has grotesque implications, too, the salient features of which are an emptying and opening of the body, an abasement and inversion of meaning, and a meta-stability of the body as perceptual and cognitive deception.” (Calefato, 2003: 164)²

However, during the 1990s and the 2000s, SF cinema has not only used the idea of cyborg to emphasize the invasion of technology on human body. It also has used the human body itself as a ground to apply its vision for the futuristic body. As I have mentioned the cyborg and the human body are not exactly same construction according to their origins; cyborg is a being that already cybernetic existence when it is created, it is already a partly mechanic, but the human body comes from the pure nature in the beginning and then it is exposed by the technology later on. Considering this, in today and in SF cinema; techno-body

¹ Canguilhem, G. (1971). *La Connaissance de la vie* [The knowledge of life]. Paris: Vrin

² Calefato cited from Calefato, 1996.

is much more like *homo technologicus: Homo sapiens transformed by technology*, definition of Giuseppe O. Longo (2003: 23), therefore, its long history comes from the human body origin and cyborg is the newer kind of existence. For the case of discussing the relation of cyborg and techno-body, the posthuman body is another alternative which symbolizes the techno-body in the real world of today. N. Katherine Hayles emphasizes the notion of posthuman and she defines posthuman as configuring the human being which is the enunciated with the intelligent machines and there are not any delimitation between the body and computer, mechanism and biological existence (Hayles, 1999: 3). In addition, if the posthuman is considered the next level of the human, it makes the techno-body and posthuman body similar as they also come from the same origin. Likewise, Leopoldina Fortunati names the body of posthuman using a *post* notion again; *post-modern body* and defines the notion as;

“... a physical and psychic entity; it is our first extension in space; it is a powerful and natural means of communication; it is an instrument of seduction; it is the first barrier between our subjective world and objective world; it is the seat of our capacity to work and of our inner dimension” (Fortunati, 2003: 72)¹

Similarly, Raimondo Strassoldo emphasizes the 21st Century as the world of posthuman, the world which “the individual, the person, the subject, the body is not the part of the sociotechnical system” for this reason; the human should be regenerated and improved by machines (Strassoldo, 2003: 43) to be a part of new sociotechnical system of post-industrial society. Thus, the world of posthuman is also the world of techno-human in this matter; it is necessary having a techno-body for one to be integrated with the society of the 21st Century.

On the other hand, as a result of meeting of machine and body in the fictional world, there has been two different body type of human; one is techno-body or we can say cyborg, and another is just human body itself with its all organic parts. Thus, the relation between these both body types has not one way of interaction as they are not only together but they also compete. This situation is very similar with what Stelarc has done in the last decades, trying to compare machine and human body power, and improve the human body to struggle with the power of the machine. In this sense, to show preliminary competition between human body and machine, SF cinema has produced the new human body together with the cyborg (e.g. *Blade Runner* or *Ghost in the Shell*). This new body is improved with implants, prosthesis, wearable computers, and ICTs as it happens to the techno-human of today and the body of techno-human has competed with the machines using technology and it brings us to the time of machine

¹ Fortunati uses the references of *L'universo del corpo* [trans. *The Universe of the Human Body*] 1999; Marx 1953, 1957; Volli 1999.

versus body contradiction. Besides, this possible competition has increased popularity of science-fiction as a genre; and the genre becomes more critical than before, because of bringing the machine vs. / with body issue to thematic and formal place and speculating the borders between the human and non-human for the competition “war” and for the integration (Pyle, 2000: 124). Additionally, other than theme of body competition between machine and human, SF cinema has also represented a future which technology is terminated on the human body; penetrating and surrounding it, therefore, with the cyborg theme, the body has become an empty canvas, an experimental subject for SF cinema to apply its future predictions on interaction between the human and the machines. In this occasion, considering the body as a realm, a surface¹, a subject of SF genre, Scott Bukatman says;

“The subject is the body, mutable and mutated ... The body in science-fiction can be read symbolically, but it is a transparent symbol, an immanent object, signifying nothing beyond itself. It is literally objectified; everything is written upon its surface ... the body has become a machine, a machine that no longer exists in dichotomous opposition to the ‘natural’ and unmediated existence of the subject” (Bukatman, 1993: 244).

As the result of showing the experimental interaction between the technology and the human on the body subject in SF cinema; today, the techno-human easily has internalized the invasion of the technology into the body and also SF cinema helped to imagine how the future body might be through technology, positive or negative, dystopic or utopic. For this reason, in the latest century, it is less shocking than the past to receive the machines and devices around and inside of the body (Fortunati, 2003: 64) because it has showed, applied and been predicted. In this regard, having a techno-body has become new phenomenon for human of the post-industrial society which has been already created in the science-fiction of cinema.

2.1.1 Implanted and Extended Body

As I have discussed the machine and body relation, it is also important that in which way these two forms of our recent world are physically interrelated and for this reason, implantation and extension of the body by technology to construct the techno-body can be separated into two groups. The reason of this separation bases on the idea of Mike Featherstone about the body in the consumer culture, considering the techno-body as a component of the consumer culture; forwhy Featherstone divides the body into two groups upon maintenance and appearance of it.

¹ Bukatman claims “the return of the body could actually be understood as an obsession with the surface of the body” (Bukatman, 1993: 261).

As *the inner body* includes the maintenance, health, repair and optimum functions of the body; *the outer body* is about the appearance, movement and control of the body in the space (Featherstone, 1991: 171). According to this separation; in the conditions of today, I prefer to divide the technological invasion on the body as; *the inner body* is invaded by the implants and *the outer body* is exposed by the machinery extensions. In other words, the implants symbolize relation between *the inner body* and machine, and the machinery extension illustrates *the outer body* and machine relation. Further, *the inner* and *outer body* have been changed dominantly by the technological developments in the last 20 years since the technology has become the dominant one in the post-industrial. Besides, these two part of the body and the ways of technological invasion are also combined through consumer and techno-culture as it is claimed; “the prime purpose of the maintenance of the inner body becomes the enhancement of the appearance of the outer body” (Featherstone, 1991: 171). Evidently, this enhancement becomes through technological perspective of the body and it is defined by Fortunati as one of the consequences of the *last stage*¹; the stage that the technological investment on the human body (Fortunati, 2003: 74); the investment that I point out as the techno-body. In fact, this investment is predicted by SF cinema when SF cinema has already started to show imaginary future; the future which is the last stage in term of Fortunati’s idea, and evidently, the implants and technological extension are used commonly in SF cinema using the body as the realm which is surrounded and penetrated by machines. In this regard, if there are similarities between the represented body with machines in SF cinema and the altered body of today, I name both as techno-body.

2.1.2 Belongings of Techno-body: Regenerative Machines and Artificial Organs

As there are various technological elements which invades the human body, to make it useful again; in this occasion; regenerative implants are common group of the products which are used to complete and fix the body, such as; prosthesis, artificial organs, plastic surgery and hormonal / chemical medicines; and in fact, these regenerative implants improve the capability of the body, and change the communication of the body with its environment. In addition, sometimes these implants bring the doubts, isolation (exclusion) and irritating noise (Neiger, 2003: 57), on the other hand, sometimes they bring the acceptance, capacity and superiority

¹ Fortunati describes the first stage is the term that machine comes into our space, more in domestic life, the second stage is that machines, especially ICTs, enters into the everyday life, and the last stage is that investing technologically in the human body (Fortunati, 2003: 73, 74).

depending on which kind of regenerative implants you have on your body. Therefore, to examine the content and the effects of regenerative technologies on techno-body; the significant body and machines interaction process from SF cinema to non-fictional world of today should be analysed through regenerated body; techno-body.

Regenerative implants are generally get involved in the combination of medical science and technology which is very common application field to recreate and reconstruct the body when it becomes deficient and, it also might be one of the first ways which introduces the human body with the non-human entities, such as; heart pacemakers, dialysis machine, valves, probes, drills, especially prostheses and artificial organs (Sim, 2003:11 & Fortunati, 2003: 84). In this case, Donna Haraway claims all these medical technologies are the beginning of questioning the machine and body relation emphasizing her definition for the cyborg notion (Haraway, 1991: 150)¹. This relation is different than the organ transplantation between two people; this relation becomes through the acceptance of the machine by the human body on purpose and also this acceptance is compulsory when the continuity of the body is in need of the machine. Additionally, the implant has a vital role in the part of the physical system of the body. In some circumstances, the body cannot continue to live without the implant. In this occasion; artificial organs are very important for the integrity of the body and there are various artificial organs which have significant role on the system of the body, such as; limbs, liver, eye, lungs, ear, bladder, heart and brain.² Among these artificial organs, first of all; I think brain and heart are more important than others as they are the main essences of the human body. The brain keeps and controls the all system of the body, and heart delivers the blood which is the source of life to the all parts of the organism. In addition, brain and heart are always considered as the most important and indispensable parts of the organic machine. In other words, brain works as the operator and mainboard, and heart works as the power supply of the body if we talk in technological terms of computing technology to define organic body. As the computer does not work without an operator and power supply, it is same for the body that cannot exist without brain and heart. Therefore, because of their crucial functions on the body; heart and brain are the organs that a body must have, artificial or natural ones. Thus, when an artificial organ is implanted, the components of organic body have been changed becoming hybrid but not the functions of the organs. For instance, in the conditions of today as well as in the SF cinema, the human body still needs a heart but the heart might be the machine one. Therefore,

¹ I cited from Sim, 2003: 30.

² There is not brain which is completely artificial but there are implants which support brain to function such as pacemakers including deep brain stimulators and cortical stimulators to keep the brain in process.

the important thing is that the organs should be in the body to make their functions in the whole body system. However, when the fact of the body is changed; from pure organic to hybrid of inorganic and organic as I have mentioned, it means that the techno-body can carry the organs which do not belong to organic human body, so it becomes something new, a techno-body. This hybridization brings the problem of the body's belonging. When the body loses its original-organic parts; do the new implanted organs still belong to the organic body and its owner? In this situation, techno-body becomes a body which is separated from the owner; a body is beyond its owner since there are machines which belong to the outer world of technology in it. In this matter; the artificial organ becomes a part of the body when the body owner receives it, but if the machine organ is made by another human using the technology; who is the real owner of the artificial organ? Does the techno-body still belong to its owner completely?

In this case, the SF movie; *Repo Men* (Miguel Sapochnik, 2010), adapted by the novel of Eric Garcia, discusses the paradox of belonging and having the artificial organ in the near future which does not seem so far from today. Significantly, I choose this movie for the reason that it argues the artificial organs from the human body point of view. We see the artificial organs inside of the human body, not inside cyborg body as in the previous SF films such as; *Blade Runner* (Ridley Scott, 1982) or *Ghost in the Shell* (Mamoru Oshii, 1995). In these films, with the human, there are cyborgs and their bodies are made of organic and inorganic materials, and artificial organs are used as one of those materials as the symbols of being a cyborg and cyborg is represented through their artificial parts including organs but the human is represented with the only organic body. In this matter, Bukatman claims that "the separation of (rational) technology and (slimy) biology is very nearly a structuring principle of the science-fiction film" (Bukatman, 1993: 266) and it proves that, the human and cyborg are generally represented as two opposite / different subjects. In this regard; significantly, *Repo Men* approaches the issue of artificial organs from the human body point of view, not using the term; cyborg. In the film, the human body and its artificial parts become the subject as the techno-body; therefore, *Repo Men* draws more realistic picture of the possible future for the integration of the artificial organs with the human body. In addition, the version of the body in the movie is intimately related with the techno-body. In the represented future of *Repo Men*, one buys the artificial organs as same as today, and also if one does not have money; he can buy the organs with credits from a company. The buyer pays the instalment every month and if he does not / cannot pay the instalment, "repo men" take the organ back from him and he dies. This situation

brings the question that I want to discuss about belonging of the body with the artificial organs. Considering the movie, implanted body of techno-human does not belong to oneself concretely; and also personally, one cannot feel that the mechanic part of the body belongs to him since that part is made by another man and it is not the original part of the body even one pays the price of the organ, it does not change the fact that the organ is new attached property of the body. Therefore, people buy organ as they buy a house, a car, a computer, a mobile phone or etc. and as every machine has, the artificial organ has the name of the company and place where it is produced in written on it; a brand and a location. This future situation of the movie gives the idea that organic body and organs are free gift of the nature but the artificial organs are the products of the big companies in the post-industrial system of the global world. If you have techno-body with the artificial implants, you cannot feel that your body does not completely belong to you like when you were born. Inside of your body, there is something you have; something which makes you have a techno-body; it is something implanted by technology, not by nature. Therefore, physically, you are different than you were before. At the same time, today, maybe people do not buy the artificial organs with the credit yet and there are not any *repo men*; however, people have these implants inside or on their body, and they pay for them, they carry them. Thus, people have the same paradox between their human body and their new techno-body. Every other day, the industry grows and more people are penetrated by the inorganic organs; in this regard, as people get used to lose their own organs, they are getting used to have artificial ones inside of their body which makes them have techno-bodies that belong to themselves but also belong to the technosized/machined world of post-industrial society.

2.2 Circle of Techno-body: Human Creates, Machine Destroys, and Machine Creates

Prosthesis as an extension of body to complete its missing limbs has a very old long historical background since the Egyptian history as an idea and during the centuries it is applied and improved through larger parts of the body and also the all developments in the area of science and technology has affected this process of prosthesis and this affection has related the prosthesis and technology; improving the prosthesis as the machine. For instance, in the 16th

century, one of the first iron prostheses made¹ and then the prosthesis has been considered also as a machine with its iron / metal substance which had supplied with the possibility of technology of those years and the prosthesis has become more strong than the organic limb itself since it was more resistant than the organic but not practical and functional in that time. After that, with the big wars in the world; the World War I and II, the research of prosthesis has been grown rapidly to help the war veterans firstly and then with the support of technology, the prosthesis usage has become more public when the new developed prosthesis has become more functional and practical. Further, there are more realistic prostheses have been produced with their appearance during the 20th Century, therefore, the relation of prosthesis and technology has been never broken off until the recent day and strongly, it has been consolidated. In this regard, the scientist has peregrinated and explored new grounds on the area of prosthesis, and today, we have fully automated, ergonomic, realistic and humanlike artificial prosthesis devices which cover, fix and complete the human body. In this subject Tomas Maldonado emphasizes the role of the prosthetics on the human body mentioning the body as a technosized subject:

“In recent times the body has become assisted by the prostheses of all kinds. Nevertheless, the prosthetic body, the body that functions as a technical (or technicalized) subject, is significant not only in terms of performance or therapy but also in cognitive terms. This is for the simple reason that equipping a body with prosthesis usually implies a notable increase on our knowledge, both of organs in question and of the techniques required to produce the prosthesis.” (Maldonado, 2003: 16).

Thus, prosthetic body is one of the components of the alteration process of body from pure organic one to the techno-body. Moreover, besides the physical affection, prosthetics evoke a new perception of the body in the techno-society and this evocation involves the experiences of the real life and also the fictional scenes of the screen. In this regard, for the prosthetic body; if we talk about the relation between the human body and machine, it is a observable subject matter to discuss the representation of the prosthetic body in fictional and non-fictional areas correspondingly; such as the arguments in SF cinema since the 1980s, and the actual timeline until the recent day. Thus, this is the point that I start to discuss prosthesis through machine and body relation in terms of techno-human comparing the two parallel worlds in this subject matter.

As I have mentioned for the artificial organs, the prosthesis also has been the symbol of the cyborg body in SF cinema, in addition, all the robots characters / figures and their bodies in SF

¹ The well-known iron prostheses made by German mercenary Gotz von Berlichingen
(<http://www.karlofgermany.com/Goetz.htm>)

cinema since the 1980s have been represented as the united version of prosthesis and organic body part by part. For instance; in the movie *Artificial Intelligence (AI)* (Steven Spielberg, 2001), all the robot figures' bodies have the bodies which are made of combining of the artificial limbs that are very similar to the technology and appearance of the robotic prosthetics today. For instance, the limbs of today's popular robot such as; TOPIO 3.0¹, even its whole body, particularly matches with the skinned body appearance of *mecha*² in *AI* as many skinned *mechas* might be seen in the flesh-fair³ scene of the movie. Similarly, in the movie *I, Robot* (Alex Proyas, 2004), the year 2035 brings the humanlike robots into the social life and the body surface of the robots have very much alike under skin body of the *mechas* and aesthetically the bodies of *mechas* and TOPIO are not so different from the prosthetics of the 21st Century like C-Leg⁴ prosthesis. For instance, it becomes confusing to realize the differences between the leg of the robot in *I, Robot* and the prosthetic robotic leg for a human body today. Therefore, the process of the recent technology and SF films on the human body explores and represents new robotic body parts simultaneously. At this point, this concurrent process can be observed on specific examples of machine prosthesis in SF movies. In this regard, I choose the movie *Robocop* (Paul Verhoeven, 1987) as a story of how the whole human body can be recreated with the mechanic prosthesis; and differently, as I have mentioned techno-body as the presence of SF cinema and actual world; I do not want to apart from the human subject. In fact, in the 1980s, there were other popular SF films such as; *Terminator* (James Cameron, 1984) and *Blade Runner* (Ridley Scott, 1982) which bring the example of prosthetic body through cyborg but these movies represents the human and machine relation in terms of cyborg. For instance; *T-100* (Arnold Schwarzenegger) in *Terminator* comes from the future with his mechanised prosthetic body under his humanlike organic skin, and the *replicants*⁵ of *Blade Runner* are also

¹TOPIO is the human-like robot as its company defines and it has; Recognition of very fast moving objects, artificial Intelligence, low Inertia mechanical system, fast and accurate movement control, balanced bipedal walking (<http://topio.tosy.com/about.shtml> / <http://topio.tosy.com/gallery.shtml>)

² Mecha is the term which is used instead of the robot in the future which is represented in the movie *Artificial Intelligence*.

³ In *AI*, flesh-fair is a place where people watch the machines to be destroyed in different ways; burning, crashing and etc. so it is possible to see under skin of the *mechas*; metal face of their machine body.

⁴ C-Leg is a prosthesis technology which is explained it works with "the revolutionary microprocessor that controls the C-Leg receives feedback from multiple sensors 50 times a second, anticipating your next move and making adjustments in real time. This keeps your knee stable when you weight it, free-swinging when you step through—and always ready to support you if you stumble" ... "power is supplied by a lithium-ion battery with a capacity of 40 to 45 hours depending on the intensity of use. You can easily charge the prosthesis at night from a standard outlet – and, if required, also from a 12-volt car cigarette lighter plug."

(<http://www.clegstories.com/index.php/howitworks>),
(http://www.ottobock.com/cps/rde/xchg/ob_com_en/hs.xsl/7071.html)

⁵ Replicant term is used for the biogenetic robots (cyborgs) in the movie *Blade Runner* and the term is found by the screenwriter of the movie; David Peoples at the instance of the director Ridley Scott. The movie is based on novel "Do Androids Dream of Electric Sheep" by Phillip K. Dick and in the novel; Dick uses the term "android"

a cyborg representation, further, both concepts are created as the human-machine hybrid in the beginning; therefore, their bodies should be examined through the idea of cyborg, not as extended human body with prosthesis. In this case, *Robocop* with his recreated human body with machines is more related subject of techno-body including the organic human body. Following this; *Robocop* might be the symbol for the both fictional and non-fictional world for the reason that the protagonist of *Robocop*; police officer Alex Murphy is human whose body is recreated with the machine prosthesis. *Robocop* had human body before having a techno-body, not created as a cyborg such as *T-100* or *replicants*; therefore, *Robocop* movie can find its reflections and feedbacks on the real world immediately. I mean, the viewer who watches the movie in the 1980s might consider that his/her body has always possibility to have a body of *Robocop* in whole or partly. The reason is that, the movie shows the viewer, us; we have always risk of having similar body as police officer Alex Murphy when our organic body is destroyed or damaged, therefore, the movie is very successful to make the viewer identify with the protagonist in the context of being only human before having techno-body.

Additionally, officer Murphy and his new body is a strong reference to explain my approach for techno-body which is created by one of the important reasons as killer / victim / saviour arranged relation of body and the machine. Accordingly, taking *Robocop* as an initial point; I want to discuss body and prosthetic relation in terms of killer / victim / saviour process in the context of the machine and techno-human interaction from SF cinema to the actual life. I believe that this process will help me to explain one of the contradictions which techno-body has. In this situation; Scott Bukatman has examined the subject in terms of “terminal flash” expressing the different representation of the cyborg and human body integration and interrelation in science-fiction genre emphasizing de-forming of the human body which has been retooled and modified. It is needed “to retain the body’s presence in the world and refigured in technological terms” (Bukatman, 1993: 244, 247), furthermore; in general, Bukatman discusses the “terminal flesh” issue questioning that with extended body. Human is still human or becoming a machine to improve the capacities of the body with external and internal prosthetic devices referring his idea to the works of Stelarc mentioning “Stelarc has amplified his body’s functions, enhanced its abilities, and worked toward ‘the body’s transcendence of all conventional boundaries’¹” (Bukatman, 1993:260). Moreover, Bukatman explains Stelarc’s works bring the new perspective to the interrelation of the body and machine

not replicant.

¹ Bukatman cites from: John Shirley, “Stelarc and the New Reality,” *Science Fiction Eye* 1, no. 2 (1987), 59.

extending and enhancing it more than formulating it as a new realm; in this process, Stelarc uses the electronic technology in his works such as; *Third Hand*^{1/2} (Bukatman: 1993: 260), *Exoskeleton*³ and his more recent work; *Muscle Machine* (2003)⁴; the works which Stelarc proves the successful combination of prosthetic technology and body; reaching the new techno-architected body beyond the boundaries of the organic human body.

Evidently, the interrelation of human and machines does not always involve friendly and positive interaction; so it is possible that there is incoherence between the human body and prosthetic machines bodies when they interact in the area of SF cinema and actual life. In this occasion, Forest Pyle mentions the deconstructive affection of bodies and machines in SF films *Terminator* and *Blade Runner*, which I deeply relate with the techno-body. According to Pyle, deconstruction of the body starts with encountering of human and inhuman (machines) as the opposite presence in both films and they try to destroy each other. When *Blade Runner* tries to kill replicants, *Terminator*'s aim the human *Kyle Reese* and in this situation, deconstructed point is being started for the reason that the human is the creator of those machines (Pyle, 2000). The dystopic imaginary of SF cinema deconstructs the master / slave or creator / created relation between the human and machine; thus, the viewer is affected by this contradiction that the machines get out of control, as Pyle claims "the films take the technological threat to the human" (2000: 127). In addition, for the viewer as a candidate techno-human, it becomes dangerous to accept a prosthetic machine on his/her body; in a sense, the prosthetic machine which is represented as a kind of enemy on the screen becomes a need of the body to be complete human physically. Besides, Pyle claims, as a human, we are affected what we see on the screen; therefore, considering the replicants of *Blade Runner* and *Terminator*, our distinctive definition for the relation of human and machine has been altered seeing the hybrid

¹ Stelarc defines each of his works as an effect which "alters the architecture of the body adjusting and extending its awareness of the world". For instance, about *Third Hand*, he emphasizes "it is interplay between physiological control and electronic modulation, of human functions and machine enhancement" (Stelarc, 2000: 560-576).

² *Third Hand* is completed in 1980 as one of the most popular Works of Stelarc and he defines the work "A mechanical human-like hand that is attached to my right arm as an additional hand. It is made to the dimensions of my real right hand" (<http://stelarc.org/?catID=20265>).

³ *Exoskeleton*'s first installation was in 1992 and the performance in 1998. Stelarc defines the work "A six-legged, pneumatically powered walking machine has been constructed for the body. The locomotor, with ripple or tripod gait, moves forwards, backwards, sideways and turns on the spot. It can also squat and lift by splaying or contracting its legs ... It is human-like in form but with additional functions" (<http://stelarc.org/?catID=20227>), (http://stelarc.org/media/pdf/Stelarc_Performances-Projects-Exhibitions-and-Presentations.pdf)

⁴ The work *Muscle Machine* is defined as "a six-legged walking robot, five metres in diameter. It is a hybrid human-machine system, pneumatically powered using fluidic muscle actuators. The rubber muscles contract when inflated, and extend when exhausted ... the interface and interaction is more direct, allowing an intuitive human-machine choreography ... Once the machine is in motion, it is no longer applicable to ask whether the human or machine is in control as they become fully-integrated and move as one ... The appearance and movement of the machine legs are both limb-like and wing-like motion." (<http://stelarc.org/?catID=20231>)

bodies and human as enemies in the subjects of the films (Pyle, 2000: 125) and this is eventuated with examining our own and other people's prosthetic bodies as something new such a cyborg as the films present. Further, *Terminator* has another role on the opinion of the viewer when the cyborg *Terminator* is unmasked and the inhuman machine body of *Terminator* as an integral of prosthetic parts is seen; the viewer faces with the reality (Pyle, 2000:129); hence, obviously, it is frightening to see the metal machine which is hidden under the skin of *Terminator*, and also it explains why scientists work on every prosthesis technology to create prosthesis which looks humanlike and very realistic to reach the original appearance of the body parts. People do not want to see their prosthesis like a part of a robot / cyborg, or as an enemy which is represented as killing machine, harmful and dangerous on the screen.

On the other hand, *Robocop* brings a different perspective recreating the human body with machine prosthesis without masking it under human skin/body and also the movie shows the reasons and results of having a new machine body. The movie tells the story of police officer, Alex Murphy, whose body is recreated with the all prosthesis machine body after he is almost dead in the shootout with a gang; he loses his body and only his head can survive, then the government uses him as a subject in the "*Robocop*" project, then, he continues his life as cop-robot and all of his body is made of metal, mechanic prosthesis. *Murphy* does not only come back to life, he also has improved and strong body than before so other police officers call him as "super-cop" also. In addition, without his new machine body, he also cannot live anymore, so he is obliged to his new body; he must have the techno-body to survive and his new body will not completely die for the reason that it has machine parts. This is also one of the contradictions of techno-human for any prosthetic parts of the body will not be vanished but the human will die and the human body will be rotten. Therefore, it is a contradiction of one is wearing something which will exist longer than one's body. Additionally; the shape of *Murphy*'s new body is not different than his former body. I mean, functionally, it has still human body appearance with his two legs and two arms because the main reason of recreating his body is not to produce a new existence; the aim is to make a human body which is stronger than the organic one. Thus, he does not become inhuman at all, he just becomes a hybrid and his new human shape body also bring the functional advantages to him. For instance; when *Robocop* fights with another machine; a stronger one which does not have legs and arms, he beats the machine with the advantages of his human-shaped robot body. He can climb up and come down stairs, however, the another machine cannot and it falls down; therefore, it means that it is important for *Murphy* that he still has the body which is in the same shape of his

former body to control it and also to be accepted by the public as a person, he needs the humanlike body. Likewise, in the society of today, if one has prosthesis, he/she is not very comfortable to take attention in the public because of the prosthetic part of the body. Therefore, the prosthesis technology has to imitate of the organic body as well as the real and original one not to alienate the person from other people and from the society. For why, it is difficult to wear a prosthesis which looks like very different than the organic body because even just wearing the prosthesis has already possibility to make the body a scary object in public such as it happens when the skinned body of *Terminator* is seen on the screen as an alienated subject reality. Obviously, *Robocop* can be accepted by the society easier because he is the saviour and he is a cop, but considering a usual person with prosthetic techno-body today, it might be more difficult to be accepted by society.

In this case, the difference is very distinctive between the movies *Terminator* and *Terminator 2* (James Cameron, 1991) as Arnold Schwarzenegger performs the villain (antagonist) cyborg against human in *Terminator*, he performs the protagonist; the saviour of man-kind in *Terminator 2*. Thus, the first *Terminator* reveals the negative reaction on the viewer against the machine; the second one becomes a hero with his machine body and even a humour subject; so the viewer may ignore the frightening machine body of him as it is same for *Robocop*. Moreover, in *Terminator 3* (Jonathan Mostow, 2003), the hero figure of Schwarzenegger has become stronger, however, in *Terminator 3*, the villain cyborg character is represented with a beautiful woman *T-X* (Kristanna Loken) and with the figure of *T-X*, the third movie brings the idea that technology is harmful but also it might be beautiful. Besides, when we follow the villain and hero figures of all three parts of the series, there is a schema of human, technology and gender relation correspondingly with the real life. In *Terminator*; there is a human and a cyborg male fights, in *Terminator 2*, two male cyborgs are involved in the story and *Terminator 3* shows the fight of a male and female cyborg. Therefore, the series follow real time improvements between human and technology relation using the binary oppositions of post-industrial society such as human vs. machine and male vs. female.

As I have mentioned before, the last and I think the exclusive subject that I concentrate for the prosthetic body is the killer / victim / saviour circle interaction of the human body and machine as this interaction has become strongly significant and contradictive subject for cause and effect relation of the question; why does human body need prosthetic? Why do we have to have a techno-body? I think this circle is applied for any other relation of body and machine including the medical technology that I have already discussed. For example; in

Robocop movie; officer *Murphy* is killed by gangsters who use the gun which is one of the oldest mechanic machine weapons. Obviously, a machine is used to destroy his organic body. In this regard, in a sense, technology becomes the killer agent of his natural body, and *Murphy* is the victim. However, after *Murphy*'s body is destroyed by machines, again technology, the machines, save his life and recreate his body, therefore, he comes back to life with stronger body, and in this point technology becomes a saviour agent. Thus, the big contradiction is that the killer and the saviour agent of *Murphy*'s body is the same thing. Likewise, another contradiction is that the both machines, killer and saviour ones, have been invented by the human to be used as the agents; even, it does not change the fact that *Murphy*'s body is still the victim in the middle of this circle and the alteration becomes on his body. For the same circle, another example is the protagonist of the movie, *Crash* (David Cronenberg, 1996); *James Ballard*. His leg gets broken on a car crash and then he has metal prosthesis on his leg until his leg heals. In this situation, the circle is same for the reason that car is a killer agent and *Ballard*'s body is the victim, and at the end prosthetic heals his leg as the saviour. Similarly, in the recent day, considering all accidents which involve human and machine; such as industrial work accident in the factories, traffic accidents, all the wars and battles with bombs and guns, home accidents with domestic machines; the nuclear accidents affecting the internal and external human body; all these disasters with/by the machines make the organic body lose its inner and outer parts, and then, the machines of technology help to fix the body technosizing it with the prosthesis, artificial organs, intensive care unit machines and so on.

On the whole; prosthetic techno-body is an altered body created by technology; it is an altered body which is created as the result of victimisation of the human body in relation to machines (inhuman); moreover; it is also survivor saved by technology. Besides, considering Stelarc's works, prosthesis is needed to improve and redesign the new body and build new technosized architecture around the human body not to lose its validity. As the human body continues losing its important parts, prosthetic body will be needed to make the human feel having a completed body; even it is technosized. Every new technology and the figures we see on the screen make us adjusted to see the whole machine body of *Robocop* or prosthetic techno-body of a random person on the streets of today. Therefore, experiencing the techno-body as victim and creator, techno-human has déjà vu of the cinematographical represented future of the screen in the society today accepting the fact that human creates the machines and the machines are there to destroy and save us in unending circle.

2.3 Medium and Mobile Techno-body

The body is the physical proof of human existence and the only appearance which human can carry everywhere. In addition, as the body has unique appearance for each person, it also has identical features and these features help the person to communicate with others and environment. Since the first human existed, the body has always been there and in time, its functions have also changed. When the environment and the conditions have been modernized, human has used the body as a tool to communicate, a tool to decorate with other tools, such as clothes at first and then external and internal devices. Further, the body is defined as a natural machine and “the first and the most immediate technological tool” (Fortunati, 2003: 62) considering the body as the first physical object which human had and still has. In addition, it is the first and the oldest medium to express one’s ideas, feelings and identity like oneself as a whole existence. Moreover, the environment has changed during the all times separated from and out of control of the human and the body has always become a tool which has belonged to human since the human being has landed on earth, then it has been used as a medium to control, to impress, to present and to perform oneself in the society and the environment. For this reason, human needs a new way of communication with its environment but the fact that does not change is that the body becomes a medium again to be used in this new way. As the body communicates with its natural five senses of perception (hearing, taste, sight, touch and smell), in today’s possibilities, there is an external effect for the body to percept and also to express its identity and feelings; that is technology. In addition, today is the time that body is used as a medium different than its natural capacity; there are technological devices (computers and machines) which are tools between the intercommunicative relation of human and the environment.

Historically, Anna Poli mentions that the first external tool for human body might be eyeglasses in about 1285¹, however as a wearable machine the first examples might be pocket watch by John Harrison in 1762 and wristwatch by Alberto Santos-Dumont in 1907 (Poli, 2003: 169). In this case, in the beginning of wearable machines, the first reason was to gather information, information of time equipping the body, and until today, it has not changed, but with the possibilities of technology, communication has also become another reason to attach the machine on the body. In the course of time, the body has equipped with other machines as

¹ Poli uses reference: Maldonado, T. (1994, November 19). Gli occhiali presi sul serio [Taking eyeglasses seriously]. Contribution to the cycle of lectures “Sapere e narrare. L’uomo e le macchine” [Knowing and narrating. Man and machines”], Florence.

technology develops, and there have been more complicated and multifunctional machines which the body can carry and also the machines have become smaller and thinner. With the new small devices, the body has become as mediated surface, it also should be reachable anywhere as a medium and it should carry the tools in easier way; more than one tool at the same time. Therefore, devices for the body have had more compatible sizes. In this situation, besides being a medium, the body has mobile (portable) function for the tools attached on it. In terms of today, I significantly mean the information and communication technologies (ICTs) and wearable computers such as; mobile phone, mp3 players, personal computers (Tablet PCs), video calls, television, the Internet, portable game consoles, intelligent textiles and even wrist-watch (I will use “tools” for ICTs and wearable computers) and with these tools the body becomes a technological (technosized) medium between one and everything around. However, I do not include the prosthesis, artificial organs or any other regenerative machines in this part for the reason that as I have noted, those machines are generally used to fix, complete and improve the body on non-informational or communicational way. Regenerative machines work for developing the power of the body and sometimes they are used to save the permanence of the body imitating the organic functions and appearance of the body, however, adversely ICTs and wearable computers are external tools which are different than the physical appearance of the original body and provide communication between the body, the other people and environment, moreover, the concept that I mention as the wearable computers and ICTs create “a body area network”(Danese, 2003: 152) using the body as communicative and informative medium. Therefore, this chapter is more about the tools that body uses and wears intentionally to communicate and get information and, definitely, this is the another aspect of what the meaning of becoming a techno-human and having a techno-body is.

Obviously, the interaction between the tools and body in SF has been always one step further than the actual life and it is possible to say that in some manners, the real life has imitated the SF cinema on this area of technology. I will discuss this subject in details but I want to give some general examples for the body and tools relation in SF cinema because even there are some differences of the representation of the body and the tools relation between non-fictional and fictional world such as; both worlds have different time periods and the way of representation for the effects of the tools on body is different, however, the affection of the techno-body is similar and this is more important for the techno-body as an affected medium in both worlds. In this occasion, when we look at the SF cinema, there are some specific general tools which have been seen and used in more than one in SF films and significantly I chose the

subject movies, considering the representational similarities between the movies each other and also between the movies and today. On the contrary, there are movies which represent the human body which is removed from the all technological devices, and these movies also help to understand the differences between techno-body and the body which is lack of technology approaching the reasons for why body should be removed from the tools. However it should not be forgot that the body of human today has been already equipped with the tools and there is no possible future body without tools.

2.3.1 Technology is a Dress

The dressed body has different meaning than the naked body and when body is dressed, dress becomes a medium too covering the body and representing different meaning. Further, the dressed body starts to communicate. Additionally, it might be considered as dressed body is the component of body in social communication and today, the communication which dressed body provides is very similar with a computer interface for the reason that both are communicable (Calefato, 2003: 164)¹. For this reason, in every time period, technology of textile and clothing changes by the possibilities of technology, therefore, clothing technology (textile technology) as old as the human being has started to get dress and it has developed and changed many times in different perspectives, but I will discuss the subject as intelligent textile and clothes technology which we wear today and have been used by SF cinema. 8 years ago, Giorgio Pacifici and Paolo Girardi claimed in 2003, it is studied to produce clothes which provide the information such as; shoes that teach how to dance, T-shirts as a tourist guide, gloves to penetrate into the virtual world; and they said “these products will be on market in very near future” so they probably mean today’s world (Pacifici & Girardi, 2003: 143). In the last decade, as Pacifici and Girardi have mentioned; in the area of wearable technology, there have been new developments and some products were introduced. For example, in 2004, Rosner and Infineon Technologies AG introduced the multimedia jacket called “mp3blue” which has the functions of built-in mobile telephony with Bluetooth and MP3 player.² Wearing “mp3blue”, one can listen to music and also has possibility to communicate with anyone connecting the Bluetooth function to a mobile phone, and there is a keyboard on the left arm to

¹ Calefato uses reference to her former work: Calefato, P. (1999). *Moda, corpo, mito* [Fashion, body, myth]. Rome: Castelvechi.

²<http://www.infinition.com/cms/us/corporate/press/news/releases/2004/132017.html>,
<http://www.gizmag.com/go/3039/>

control all functions of this electronic textile and all these technologies are carried on the body. This jacket uses the body as a medium to provide the information and communication to its wearer. Besides, another version of electronic jacket was used in *Back to the Future II* (Robert Zemeckis, 1989) which the main character *Marty McFly* travels to the year 2015 and he wears a jacket which is automatically fits to the body and also dries itself when it gets wet. However, both jackets are products of the idea which tries to make the body comfortable, reachable and portable machine improving it for the better conditions which the body has not got before. When a jacket does not need to be brought to dryer machine and tailor, another jacket saves the wearer from carrying the extra MP3 player and Bluetooth device. Not only the jackets, today we have the examples of T-shirts which are equipped with a digital watch (named as digital T-shirt or digital clock T-shirt¹) and graphic equalizer (named as show off T-shirt or equaliser T-shirt) which is built-in sound sensitive EL (Electro Luminescence) panel screen which works depending on the sound of the wearer environment². These products are still not in commonly use but they are available to buy. Thus, it is possible to think these products as examples of wearable technology and the important effect of these products; they provide communication between the body and the society through the wearer's body. Further, the products reflect the personal statement of the wearer in terms of new aesthetic perception of electronic clothing; similarly, Pacifici and Girardi mentions that technosized clothes bring the new perception and understanding of beauty and personal statement (2003: 144). Further, I will explain the personal statement in the following parts through ICTs, but also I want to emphasize that wearing T-shirts and jackets that I have mentioned, create a new perception on society for the wearer.

Additionally, defence industry develops many different multifunctional electronic clothes for the soldiers and police officers to improve their abilities and also to make their role more powerful in the public with equipped body. Further, besides very developed guns, there are new tools which are invented to gather information and provide communication between the worker and security systems. In this case, helmet camera becomes common use in the last decade, especially by police departments of the countries. For instance; in the last 1st of May 2011 Labour Day, in Istanbul, for security reason, the police officers used helmet cameras which can scan and identify people's faces controlling from the government database and to record the

¹ http://www.latestbuy.com.au/digital_clock_tshirt.html, <http://www.coolest-gadgets.com/20060502/digital-t-shirt/>

² <http://bimbambanana.com/index.php?side=soeg&soegeord=t-shirt&submitknap=Search>, <http://2dayblog.com/2006/07/10/the-show-off-shirt/>, http://www.latestbuy.com.au/el_equaliser_tshirt.html

data. Also since 2007, police officers in the UK have used the helmet cameras¹. This situation reminds the *Robocop* as a robotic-cop with his helmet which provides the extra sight ability to him. Further, it is one of his all prosthetic body parts and also it is one of the reasons for calling him *Robocop*, different than a usual cop. Therefore, the police officer of today is partly reaching to the situation of *Robocop*, not completely yet, –already, the police officer becomes more similar to *Robocop* with the bullet-proof jacket, the gun, baton and radio hanging on the belt–. In addition, the police officer uses his head and helmet for another reason different than just protecting his life; his body is used to supply and collect the information and to provide communication between him and the central office sharing and recording his experiences visually during the work time. Moreover, another recent technology; Modular Tactical System (MTS) has been produced by Black Diamond Advanced Technologies² especially for soldiers to carry all ICTs on their body. MTS includes the devices such as; a universal display (kind of computer); to control all functions of MTS and also it works as a small computer, as mission controller which provides “radio control and data protocol translation, computing power, data storage, security, and power distribution”³ with a hub which has capability of input/output, audio and power supply, and GPS (Global Positioning System) module which supplies geographical information and communication for the wearer. All these devices are carried by a tactical vest which is also produced by same company, and it is declared that the vest also will available for public use in near future⁴. I think the idea of MTS, especially the vest, brings full possibility of communication and information inside of the clothes, and the body becomes a centre of communication and information of oneself. Wearing the MTS, the body leaves its organic meaning and it gives the message that it is improved, powered and connected as a medium to the source of information. Relevantly, in the post-apocalyptic human versus machine future of *Terminator* (James Cameron, 1984), human warriors equip their body with the tools like MTS to make war against the machines because the human body is not enough just itself to battle against machines, and they technosize their body with clothes to carry all needed tools for the war, and they uses the body as a carrier medium to improve the capacity of their bodies.

On the other hand, the technology does not only become wearable as a device, also the functions and fabric of textile that we wear today is affected by technology. In fact, when the

¹ <http://www.guardian.co.uk/uk/2007/jul/12/humanrights.ukcrime>

² <http://www.bdatech.com/mts/>

³ <http://www.bdatech.com/mts/tactical-mission-controller/>

⁴ <http://gizmodo.com/5806329/a-wearable-computer-for-when-youre-being-shot-at>

numbers of devices which our bodies need to carry increase, the dress that we wear also is adapted to these new devices, and the dress has to have extra parts or pockets to carry the tools easily, as the tactical vest carries all MTS in whole parts on it. Therefore, different than traditional clothes, the new clothes of techno-human have new functions such as; trousers, bags and jackets with full of pockets to carry mobile phones, MP3 players, tablet PCs and such. (Calefato, 2003: 166). Further, there are new accessories to make easier to carry the devices; belt and neck strap (or hanger), textile and plastic cases for various ICTs, and specifically functional accessories such as; arm strap for sports exercises. The producing reason of all these new clothing products is to make body equipped; therefore, the body can be multifunctional with its clothes. Additionally, as the functions of clothes have changed, the textiles of clothes have changed too for the reason that textile industry is the one which is affected by technological developments. Additionally, fabric and colours of our dresses are related with the representation of oneself with technological content. In this matter, Elda Danese says;

The technology is not hidden; it becomes an aesthetic option as garments exhibit a high technological content. Previously, the brightness and metallic reflections of textiles came from gold and silver, and distinguished the richness and prestige of people wearing them. Today, the iridescence and the brilliance of the coat spattered with titanium or of stainless steel-speckled organza –fabrics that protects against electromagnetic waves and infrared or ultraviolet rays, and that are soldered instead of sewn– reveal the seductive side of technology and represent a new form of luxury” (Danese, 2003: 149)

Frankly, metallic colours, synthetic fibers, titanium and steels have become the material of the textile in the last decade and the body that wears these textiles is represented in the futuristic perspective. The main reason is that all these new fabrics are produced with computerized technologies such as fibers and fibers bring new options for interconnection between the body and clothing, and also new technosized textiles change the way of dressing, so the relationship of one with the body has been changed (Poli, 2003: 170) representing the new period and era that belongs to recent day or as the body belongs the futuristic style. For instance, in *Back to the Future II*, *Dr. Emmett Brown* comes back to 1985 from 2015 with his silver coloured titanium-like eyeglasses and golden coloured shiny cape and the future is represented with these materials on *Dr. Brown's* body, because as a viewer, we do not have any other clue to understand that *Dr. Brown* comes from the future; therefore, his body becomes an only object to explain to the viewer that *Dr. Brown* is dressed in the future. Furthermore, *Dr. Brown* gives a jacket and a pair of shoes to *Marty* in the future. The shoes are white-silver coloured Nike which also has automatic power laces and the textile of jacket looks like a synthetic material with plastic. Similarly, *Griff Tannen* as the antagonist of the movie wears a metal-like and

silver-coloured helmet just as an accessory in 2015 and this situation claims the machine looked-like clothes will be common for people as a part of the society in the context of fashion. Besides of these specific examples, in the movie, all clothes in the future are made of synthetic, polyester and plastic materials which are the products of textile technology and the body is used as a medium to show these technologies. Therefore, as we come very close to the future of the movie, just we have 3 years more, maybe we do not have power laces yet but the colour and substance of our clothes have already become technosized representationally and our body becomes the medium of this representation as it happens in the movie.

2.3.2 ICTs and Body

As body has always been a medium with external tools from the body to its environment, the information and communication technologies (ICTs) have changed this one way relation and ICTs also have used body as a medium to reach the individual from environment to the body. Therefore, there is an interrelation between the body and ICTs. This interrelation does not only involve the body as a medium, the body has also become a mobile with its technological tools. This situation is also available for the wearable computers that I have mentioned but I think ICTs and mobility of the body is strongly related considering the common and popular use of ICTs in the society of today. Additionally, the reason of calling the information and communication technologies together is that when we get information, we communicate with that information or anything we receive from outside. Obviously, when we are communicated by something, general reason of communication is that gathering information from a source. Therefore, the popular personal technologies of today generally involve the information and communication features together such as; mobile phone, television, the Internet, tablet PCs and such. However, even if these popular tools gather both functions, it should be defined well the communicational differences of the tools. In this case, James E. Katz et al. groups personal communication and non-communication technologies in their research (2003: 75 – 86); however, today it is more complicated to separate personal technologies by their communicational and informational features because; a wrist-watch might have mobile phone features, or one can use the Internet through his MP3 player or portable game console. For this reason, in terms of today, the word ICT is used in literal integrating the both technology features on different tools.

The reason of surrounding of body with ICTs devices is that the communication has become very important in the conditions of the recent day; and one need to contact with the world and gather information in anywhere and anytime. In this regard, ICTs (portable machines) make the body more effective in its relation with the world (Poli, 2003:169). The body is the only physical entity which is the proof of where we are; and our bodies move everywhere we go as our mobile carrier; therefore, ICT devices have to be connected to the body to provide their information and communication every possible time and place. In this situation, physical mobility of the body is used as technosized mobile surface, mobile hanger for the tools. Besides, when body becomes mobile, it is always reachable through ICTs; one who wears ICTs, does not lose the communication with the outer world until he/she removes the tools from the body. In brief, the role of techno-body is to provide communication to us using its mobility and carry ICTs as a compatible surface. In this occasion; Patrizia Calefato explains;

“Communication ‘sticks’ to the body, where it acts as both transformer and transformed. The body allows a given communication medium to dislocate and fluctuate. Today the body wears objects, not just clothes or conventional accessories, but mobiles, Walkmans, global positioning systems, digital barometers, watches controlled by space stations, ski-gloves with a microchip ski-pass.” (Calefato, 2003: 163-164).

In this regard, techno-body is associated with ICTs and without technosizing body; one can lose the contact with the society and cannot receive any information. It means that, techno-human gets more reachable and communicative as much as he/she carries ICTs with the body. Therefore, it becomes obligatory having techno-body to reach the information and to transform the information from one to public, or from public to society, or from society to every individual. In this sense, as techno-body communicates with the environment, its boundaries are extended (Calefato, 2003: 164). For instance, one does not need to be at home to watch TV since it is possible to watch TV on mobile phone or on tablet PC anywhere and anytime. Moreover, one can reach to the furthest place on earth to receive the information or communicate with others using a mobile phone which is carried by the body. As the main reason of this situation might be that techno-human wants to be reachable anywhere and anytime; therefore, in the recent day, people prefer to give their mobile phone numbers instead of home numbers, or their e-mail addresses instead of their home addresses. It means that, techno-body has become mobile home of techno-human; the home which is equipped by ICTs, fabrics and clothes which all try to protect our body, help to make it social and improvably reachable (Calefato, 2003: 166).

2.3.3 Car is a Mobile Dress

As I mentioned before ICTs and other wearable computers are the machines providing mobility to techno-body. The biggest mobile machine; the car (another name is automobile) should be discussed in this matter considering its increasing popularity and mobility transporting human body since it was invented. Nowadays, the car is probably the only machine which techno-human uses in everyday life to move in the space and it should be considered as a wearable machine. That is because it is used through our body and the one cannot drive a car without a body. On this occasion, Jorge Frascara mentions the car as an apparel and says

“The car is apparel. Wearing a 1,500 kg magic costume that transports us at 100 km per hour ... we wear the car like a costume: for some of us it's a warrior's armour; for others, their team shirt; for others, a sexy expression of their lifestyle” (Frascara, 2003: 195-196).

Besides providing physical mobility, Henry Ford realised that one model and one colour car could not be successful in the market and this has made the position of the car more different. Especially advertisement of the car with different features has made the car a communication device (Frascara, 2003: 196). Therefore, as many other wearable machines, the car has become communication object with its colour, model, size and technical specifications. Hereby what kind of car we have, and how we use the car has become affective as a personal statement. On the other side, because we drive the car, the car has also become a device between our body and the environment. When we drive the car, we carry also our personality to where the car takes us. Furthermore, on each car advertisement design and technical features emphasises some concepts such as freedom, speed and, new technology. Significantly, as an important point, SF cinema and the car have become related in terms of human and machine interaction. As other wearable devices have been represented in the movies, the car is also another figure symbolised by SF cinema in the futuristic view using the mobility opportunities and physically technological expression that the car can provide.

In SF films, the car has been represented in various ways and also become the significant symbol of the futuristic prediction. Mainly, every protagonist of SF films has met with and needed the car in different circumstances and he/she wears it for different reasons such as; to travel, to run away or to catch the enemy or as a part of his/her job. Further, there has been always a relation among car, time, technology and the characters of the movie. For this reason,

the representation of these notions connects the world of SF cinema to the real world. In this regard, it is important to analyse these representations in some specific SF films for the subject matter of the cars as a mobile machine and a device of human body. Moreover, the different representations and predictions of the car in imaginary future of SF films, bring the possibility to see similarities of how and what kind of relation there is between the human and the car in today's world. As an illustration for this analyse, although I generally concentrate on SF films after the 1980s, I want to mention about one of the old-popular SF movies; *Metropolis* (Fritz Lang, 1927) for the reason that the movie was produced after the mass production of the car in the beginning of the 20th Century, therefore, it is possible to see the effects of car in public considering the *Metropolis* as a reflection of big cities at that time such as New York. When we look at the vertical over ground settlement of *Metropolis*, we do not see crowd of people, but crowd of the cars which are used as the representation of human, extension of the body. The movie uses the car as a symbol to express the complication of a city in the 20th Century instead of human body. By this observation, we can say that just after the mass production, the car became an object which was directly related to the physical existence of the human body. In another sense as Fritz Lang claims that we do not need to see people to understand there are many people in the space. Therefore, it is enough to see overloaded highway with the cars to understand there are people inside their cars; not walking but moving faster and mobile. This situation shows how rapidly the car has invaded in everyday life and enclosed the human body just after the mass production.

Additionally, with the development of technology, the car has also been improved to meet the human needs in daily life. While the human body has been exposed by ICTs, the cars has been equipped with every new technology; such as; radio/music and DVD players multimedia computers including the Internet), GPS, air conditioner, digital control panel / trip computer and such. Therefore, more than a vehicle, the car has become multifunctional computer as a dressed body in the space technosizing itself. Obviously, in the post-apocalyptic future of the movie *Equilibrium* (Kurt Wimmer, 2002), it is forbidden to feel any feelings therefore all communicational and informational devices which may make people feel something are removed from the public use, including the car. The car is only in use for the officers who work for the government in order for them to investigate and catch the criminals. However, even they can use the car, the whole colour of the car is only white and there are not any equipment and devices, except only a steering wheel and gear shift. That is because the car is also considered as an extra device for people to have communication through and gather information.

Therefore, it is removed from everything extra and used only to provide physical movement of people. In this regard, comparing the car of today to the world of *Equilibrium*; as an effective device, it makes clear that how important the car is with all its colour, design, and extra machines and ICTs inside. Further, it shows that how the car changes the surround and the mediation of our body not only transporting the body, it also make people inform and communicate. Besides, in all series of *Back to the Future* (Robert Zemeckis, 1985), the car is used as time-machine to travel between different time periods; in this case, more than travelling in the space, the car has become a mobile dress to travel in time. When we consider the car carrying the body in time, this situation might be interpreted the car changes the communication of how people interact with time. As a dress, it helps the body move faster than its own capability. The human gathers information faster on travelling by car, as they get more information per minute by what they see through the window. The sense of time is faster than the normal with the car as the body receives the environmental information faster. Moreover, DeLorean (DMC-12 model) car was produced in the early 1980s and it was not commonly used in the public except being a time-travel machine. It took attention of the director Robert Zemeckis in terms of its futuristic interior design with leather fabricated and outer design with gull-wing opening doors and silver wheels. Therefore appearance of the DeLorean adjusts the flexibility of a time-machine for any time period. Vivian Sobchack emphasizes that using DeLorean as a time machine “defunct ‘futurist’ car which itself signifies the instantaneous transformation of the ‘new’ into the ‘classic,’ the future in the past” (Sobchack, 1991: 248). The car can be designed, functioned and developed depending on the time and opportunities of technology. It is also combined with the body for any place and any time, therefore, we can define the car as a vehicle which carries, changes, exposes, transfers and transports the human. For this reason, the car might be used as a time-machine, as an important point, there were not any other machine that people wore to travel in the 1980s. Hence using the car also brings more realistic perspective to the movie since the car has been used by people many years and it has been one of the most developing technologies that people wore, wear and will wear.

As I have mentioned that the car is a mobile dress of techno-human, it might become a life-long accessory of the body and a friend of the human. As many other machines we interact, being inside of the car and feeling that it is our so called cave and carrier in the space, we easily identify our personalities with it; touching it, controlling it and moving with it. For this reason, the technology has tried to change the communication between the human and the car to expand the way of interaction. Further, the car has been vitalized such a machine that has

capability to know its wearer. For instance, in popular TV series *Knight Rider* (Glen A. Larson, 1982-1986), the protagonist *Michael Knight* is a hero with his speaking-car *KITT* (Knight Industries Two Thousand) and the story of the series is about the adventure of these two characters. Hereby, *KITT* becomes more than a car for its wearer; talking with him, protecting and helping him. Similarly, in the movie *Demolition Man* (Marco Brambilla, 1993) the car is a speaking-machine in the future, even it is not as identified as the *KITT*, it communicates and informs the wearer with a voice. Further, it has capability to realize who the driver is and changes the physical settings depending on its wearer's body such as; it sets the position of steering wheel and the seat according to the body size of the driver. In these two examples, the car has become an intelligent dress informing the driver and as communicating with the outside world. Besides, the body communicates with the car itself. Furthermore, not so later than these examples, in the real world, we have the car that works with the voice command of the driver; such as one of its kind "yet" a cop car in Oklahoma City¹ and also the car with voice recognition developed by IBM². It does speak to the driver, and answer the driver's questions about the traffic, addresses, weather temperature, nearest places then notify the driver about new e-mails connecting the Internet. I believe that my examples might be the guide for new research about this area and introduce the car as a device has ICTs inside and communicate with us. Further, more than our recent limbs in use when we drive a car (arms, hands, legs, eyes and ears), we use many parts of our body and our voice to control our big dress, the car. Therefore, in SF examples and today, the car and the body relation deepens in every new technology, as the human body use more body parts to use the dressed-car. Therefore, body becomes more technosized inside of the car; in addition the car brings more information and communication to oneself through the techno-body.

On the other hand, the car has always been the most dangerous machine that body wears and controls. Obviously, car accidents have become a big problem in populous cities and countries; for instance; in North America, 20 people lose their body parts per an hour because of car accidents and leave the hospitals with missing foot, hand, or on wheelchair. Additionally Jorge Frascara emphasizes that 97 per cent of the population do not have any trouble about driving. However, the numbers are not important at this point, as the human suffers anyway; even it is just 3 percent (Frascara, 2003: 196). Therefore, when the car protects and helps us to interact within the public, it also keeps us in the risk of danger during the time when we wear it.

¹ <http://www.cbsnews.com/video/watch/?id=4834319n>

² http://feedroom.businessweek.com/?fr_story=FRsupt217351

Moreover, using the word “accident” does not help to ignore the contradiction caused by the car. Despite the accident is considered ordinary event, the result is generally not ordinary and the human is a driver is the only one who is responsible in accident. Even we have the licence to drive a car; the accidents are caused by uncontrolled and careless driving of us. Therefore the car has also become the medium of our ability to drive, to wear a machine well or bad. For this reason, the car might be considered as a machine which can be killer or saviour and so the driver is. Significantly, not only the driver’s life, but also the other passengers’ lives belong to the driver during the travelling, so, wearing the car needs more responsibility than wearing any other wearable machine. When the size of the car gets bigger, the responsibility of the driver becomes more serious; such as buses, and other vehicles; plane, ship or train.

The last important discussion for the car as a mobile dress is that it has become a mobile mirror of the identity covering the body with all equipment and features of the car that I have discussed. I mean the appearance of the car is the reflection of its wearer’s identity and it is also affected by the space and time in the same way as the body. This situation shall be proved by the help of some examples from SF cinema. For example, in *Brazil* (Terry Gilliam, 1985), generally the car is designed for one person so it is very personalized and also outer design of the car looks like a machine that comes from the old times with its dirty surface and old-styled parts such as wheels, doors, windows. Further, when we look at the space of *Brazil*, it is also dirty, foggy (smoky) with small houses and narrow streets like the inner space of the car. Moreover, the fashion of what people wear in *Brazil*, the style of clothes and the design of the car is very compatible. In addition, in *Blade Runner*, as same as dystopic future of *Brazil*, the design of the car is related to what people wear, and in both movies, the space, the clothes and the design of the car are affected by cyberpunk as a sub-genre of science-fiction. On the contrary, in utopic SF films such as; *Minority Report*, *Demolition Man* or *I, Robot*, as the space and the dress are removed from the effects of cyberpunk and represented with the metallic and shiny colours with clean cities and high-tech machines; the car is also in very developed design, features and any various colours. It moves faster and even it can fly. Therefore, obviously there is a strong and very direct relation between the time that we live, what we wear and the design of our big machine dress. That is because our body is affected by the time and space. Our clothes have been also affected, and if the car is affected too, it is the proof of we wear the cars as a big mobile machine. Our technosized and mediated bodies are reflection of our identities too.

2.4 Modified Techno-body

Examining the relation between machine and body through SF cinema and real life of today, certainly, results in redefining and altering the aspect of the body.. It refers the body has also been modified with the external machines around it. I mean limbs and sense organs have been used different than their functions on the organic body. This is possible by assembling the machines which have capability to sense in to the human body in different ways such as seeing, hearing and implanted machines and they change the function of our body parts (Ricco, 2003: 177-178). Eventually, on one side this situation has assigned the new duties to some body parts, on the other some body parts have lost their functions, therefore, gestures and language of the body have been modified by the machines around us. Additionally, the whole body has become important for the interaction between the human and machine; in this sense, when controlling the machines, human being has had new behavioural alterations to interface the machines.

On this occasion, as I have mentioned about the car, similarly, we have voice recognition technology on many different areas of daily life such as telephone banking (or any other companies' costumer services), computing or mobile phones. Recently, when we call the customer service of a bank or any big company, there is a recorded operator voice on the line and it asks questions and we answer yes/no or the voice asks for some information and we answer again speaking. It is different from the past when we used buttons of the phone to select a menu to reach the information or costumer service officer to receive help. For another example, mobile phone technology of today allows us to use our voice instead of our fingers. When we want to call someone, we just need to identify our voice to our phone and then just need to say the name of a person whom we call. Obviously, this voice command and recognition technology has been used in SF cinema in different concept and various different representations I will give some examples from SF cinema to emphasize that we are not unfamiliar with this technology since it has been showed in the cinema. As an illustration, Dina Ricco also discusses the changes of speaking to a machine depending on the way of our speaking ability, intensifying the situation as a science-fiction atmosphere and she says:

"The use of automatic speech recognition, whether applied to an automatic dictation device, to an answering machine for information, or to any vocal interface implies a considerable change in our usual way of speaking. This is ... because of the almost science-fiction atmosphere in which we give verbal orders to a machine and then have them executed. It is especially because, in much more concrete

terms, speaking to a voice recognition device requires particular attention to world articulation, pronunciation speed, volume and so on, so as to make our language compatible with the perceptive skills of the machine.” (Ricco, 2003: 178).

For instance, in the movie *Colossus: the Forbin Project* (Joseph Sargent, 1970), Dr. Charles Forbin invents a machine, *Colossus*, to control defence system of U.S.A. and the machine works with voice command and answers in writing. Further, as Ricco emphasizes, scientists use more simple and comprehensible language when they talk to the machine, to make the machine understand them in the right way because speaking to a machine is different than speaking to a person; the limit of the language is determined by understanding capability of the machine.

Moreover, there are SF films that bring the voice recognition technology in our home and everyday life. In the future world of *Minority Report*, Chief John Anderton comes home and he says “I’m home” then lights are switched on. He does not need to use the light switch with his hand; just a couple of words is enough to control the lights and so the electricity inside home. On the other hand, in *Demolition Man*; Lenina Huxley says to John Spartan that “everything is voice coded, so if you need something just ask, lights” when they come home and then lights switch on. This is deeply related with the technology of home automation (smart homes) today for the reason that we have the technologies which we have seen in the SF films. For example, an air conditioner can be switched on/off by a short message from the mobile phone.¹ Additionally, as the voice commanded switch technology has been used in SF cinema in various times, at the same time, historically, one of the first versions of machines working with the voice recognition technology might be switch on/off devices which work with the sound of clapping and it is generally called *the clapper*² which has been in public use since the 1980s and this technology could be connected various device to control switching on/off functions. Therefore, when using the clapper, different than pressing the button, one needs to make the sound of clapping. Similarly, in this technology, we need to use our hands again but using the voice of hands, not itself. Besides, today, we have sensor switches which can analyse our physical movement in the darkness and then they are automatically switched on/off. The sensor switch technology is used especially in the stairs part of building or parking places for the reason of saving the energy. In this regard, it is possible to think that in the development process of controlling way of switches so the devices; today, the body is still needed with its hand, clapping, voice or move as there cannot be any human voice, move or hand without a human body. Technology of today needs our body and its gestures but in a different way,

¹ <http://www.behance.net/gallery/Vestel-Smart-Plus/1740782>

² http://www.amazon.com/s/ref=nb_sb_ss_i_0_7?url=search-alias%3Daps&field-keywords=clapper&sprefix=clapper

therefore, as we use our body and its gestures to interact with technology. Only technological implantation is not necessary to make the body technosized, if the usage of body is changed by technology; we have techno-body in terms of its usage and functions.

Further than recognizing our voice, the new technology has possibility to identify people through their body in every area of the life. We have computers which can identify us scanning our faces or fingerprints when we sign in, ATMs which we can withdraw and the car that we can drive using our fingerprints¹ and security systems scans our eyes' retina and fingerprints again. All these devices make our body more important presences and set up a relation with our identity. On the other hand it might become dangerous using the body to identify oneself for the reason that the body might be harmed, lose the parts or be imitated. In *not-distant future*² of *Gattaca* (Andrew Niccol, 1997), people are divided by their genetic types and they work depending on their genetic level. In addition being defined as not-genetically good *Vincent Freeman* takes place of *Jerome Morrow* who has perfect genetic features but paraplegic because of a car accident. However, *Freeman* needs *Morrow's* fingerprints, blood and urine sample to take *Morrow's* place as the company controls workers' identities each day collecting urine samples and checking the fingerprints and blood at the entrance of the company building. Hereby, the movie predicts a future in which the body is more important than the personality. I mean, the one is a person as much as the body allows, and it is because of the technology which can sense the identity of the human through the body. As a next example; in *Back to the Future II*, fingerprint of resident is enough to unlock the door and the machine voice says welcome with your name. Further in *Minority Report*, the security cameras have capability to scan people's eyes and identify them. I gave these examples because the body becomes more important for the new sensory technologies produced in SF cinema. However, in today's world, it causes a problem of complication when one loses parts of the body. The previous technologies of sensory machines such as the key for locks and cars, using magnetic cards to withdraw money or enter to a building, the keyboard and passwords to sign in to computers and any other systems are replaceable. If the key or card is lost, it might be reproduced or at least there are always spare ones of these products. If the password is forgotten, there are various ways to remember the password. However, conversely, with the sensory machines, if one loses the part of the body, fingers and eyes, or if the part of the body

¹ The all machines which work with fingerprints, has become popular and common recently.. There are various companies which produce this technology and the technology also known with different names such as finger vein recognition system, biometric machines, bio-identity machines or finger vein detection.

² This definition is used in the beginning of the movie.

is changed such as face, how one can use the sensory machines. Furthermore, if a thief wants to rob the house of someone, steal a car or the money from someone's account; he/she does not need a key, a card or password anymore. The thief will need someone's eyes or fingers to steal and this situation puts the body in a dangerous space. For instance, in *Demolition Man*, the antagonist *Simon Phoenix* rips off the scientist man's eyes then he shows the eye to the sensory security machines to open the doors to escape from the prison. Maybe for now it is just an example from SF cinema but as we have the similar technologies today, there are more possibilities to have problems like that. When the body has become more important with its modified version by sensory machines the human is in more complicated and dangerous situation of losing the parts of body and losing the access to the machine.

Evidently, as many ICTs and intelligent machines surrounding the human body, for the modification of techno-body, sensor technology is one of the important technologies which are used in the several machines in our daily life. We have sensor technology from cars to game console, from mobile phones to automatic doors, and there are some specific effects of sensory machines according to their usage area. Considering the sensory devices, the main reason of sensor technology might be considered as it imitates the real life and makes people's body rescue from the physical dependence and, makes the body freer. When sensory machines imitate the real life, they attribute new meaning and functions to our body parts; they also may replace incomplete capabilities of the body. For example, colour detecting mobile phone applications are very useful for blind people to understand the colour of any item around them, or parking sensor for the cars is very useful to see back side of the car when parking. Besides, the sensor technology has become very popular and common for the video game industry so there are game consoles such as *Nintendo Wii* or *XBOX 360 Kinect*. Also on mobile phones there are games which work with the movement sensor of the phone; such as fishing game on *iPhone* or car-race games. We, as techno-human, get used to see people who move their mobile phones in different than just talking; for instance, if one plays fishing game on *iPhone*, one might shake the phone as casting movement as one does fishing in real life or one can move the phone as steering wheel when playing the car-race game. Therefore, all sensory devices make us get used to perceiving new gestures on our body and environment. When we play a sensory game, we actually move like what we do inside of the game or we behave like fishing or driving a car in real life. In addition, it does not necessary to have keypad or cabled joystick to play these games, actually on *Wii* and *Kinect*. The important device is the body to use the machines, as in the advertisement titles of *Kinect* "You are the controller. No gadgets, no

gizmos, just you!”¹ Therefore we have new gestures and this new technology alters our perception of playing game inside of our homes. We can run, play tennis or dance with the same gestures when we do these activities in actual life and it makes the sensory technology more realistic and our body as a controller whereas makes the previous technologies useless and unpopular. In this case, in *Back to the Future II*, when *Marty McFly* goes to 2015 from 1985, he sees two children when they try to switch on and play a video game *Wild Gunman* from the 1980s, and *McFly* wants to show them how to play the game. Then children see that *McFly* uses his hands to play; children say “You mean you have to use your hands? That’s like a baby’s toy”. In this regard, as *Wild Gunman* was a popular and very extreme game with its light gun for its own time, for today, we have *Kinect* or *Wii* which are interesting for us. The only difference is the freedom of the player from the cables. I mean also the joystick, light gun and video games created their own gestures on human body as the result of interaction between the body and those game devices. In the past times, just hands were using the joystick or light gun; today the one can play the game with whole body from foot to the head. In addition, I think, every new technology, especially the ones we use on our everyday life always modify the body with new behaviours and gestures. Therefore the body is modified by the technology, and again with the sensor technology, the body becomes significant presence of the human existence for the reason that sensor technology can use and sense the all parts of the body.

3. Altered Identity (Identity of Techno-human)

3.1 Identity of Techno-human: Digital Me / We²

The title of this chapter refers to the technosized identity of techno-human referring the idea of Michael R. Heim and “Digital We – Digital Me” (DW / DM) as an initial point of the altered identity of techno-human from SF cinema to the recent day. I will use the term for more general issues instead of using only as the digital environment covering the area of all technologically exposed new identity of human. With the new identity of human; the chapter includes the issue of virtual reality / identity considering also the affection of digitized body on

¹ <http://www.xbox.com/en-GB/kinect>

² The title of the chapter is taken from the article of Michael R. Heim’s “Digital We” Published in DotCopy, September 2003 / <http://www.mheim.com/digitalWe.html> / http://www.mheim.com/files/The%20Digital%20We%20copy12_1.1.pdf

this new identity. For this reason, DW is directly related to what has happened to human personality with the invasion of technology in daily life and penetration of the human into the digital world of machines. Evidently, the alteration of human identity is not caused by one way direction because when the machines exist in our daily life, we enters in their area too, hence, the identity is affected by its own environment and also the environment of machines; digital environment and virtual world. Significantly, DW has been undeniable by the techno-human of the 21st Century because we have become techno-human and SF cinema has already predicted the human of the last century as an existence that goes far from its nature day by day.

Giving the title on the poster of *Minority Report*'s (Steven Spielberg, 2002) "You can't hide, - Get ready to run" as an example for the warning of DM of new human whose data profile is adapted by the computer with credit card purchases, online shopping, e-mail correspondence, health records (Heim, 2003) and today we have become closer to the DW with the social media/networks (Facebook, Twitter) and blogs, mobile phones, video games and such. Obviously we have alternative personalities inside of the machines and networks; they identify us as we introduce ourselves to them. For official usage of the digital technologies we have to become the real us but for other areas, our digital altered identity does not have to be the exactly what we are. Therefore, DW/DM may be someone or something else different than our own. However it does not change that there are DMs and DWs even they are different as the notion of "I" is important and necessary to exist in the digital area. Heim claims that "I" is transformed to "Me" being objectified in the virtuality. In addition DM can be designed with "fake names, feigned interests, and fabricated references" hiding the real "I" behind the screen (Heim, 2003). This is very much like what *the Matrix* (Andy & Lana Wachowski, 1999) brings the new idea of the combination of real and virtual world. Even we are not being penetrated by the cables to connect to the network with DM as it happens in *the Matrix*; we connect to the network with an altered identity. We can see this at the main character of the movie; Neo is not exactly the same person in both virtual and real world and we have a digitized identity in the world of networks, or a video game. In this regard, it is possible to say that alternated identities have started to appear when the computer has changed from calculator to the multimedia machine equipped with networks, games, and even televisions (Heim, 2003). I mean digital identity of techno-human has been created by personalizing the computer and then used as an entertainment and social device. In this process the non-fictional and fictional world of SF cinema has been developed concurrently and the boundaries between the DW and the real has become more transparent.

As an illustration; in *TRON* (Steven Lisberger, 1982), the protagonist *Kevin Flynn* is transported from the real world to the cyberspace of the video game physically and spiritually. If we think about the real time technology when the movie was produced, this transition from the real self to the virtual self is something new in the beginning of the 1980s. Almost twenty years after *TRON*, *the Matrix* brings another explanation to the concepts of real and virtual world and so to the identity. Not like *TRON*, in *the Matrix*, the real body does not need to be transported to the virtual space. The real stays in the real world and the DW exists in the virtual area. Therefore, considering the technological developments in the world during those twenty years, it makes sense that we can have virtual identity without losing the real one. Obviously, the story of *the Matrix* is affected by growing usage of the Internet and virtuality on real life during the 1990s. The movie asks the question about the reality; and importantly, if there are two realities as the real and virtual one; where is the line between these realities? And finally, when we consider more recent SF films; DW has changed, again with the development in the non-fictional world. Since *the Matrix*, 1999, also the deadline of the 20th Century, the virtual spaces and machines have invaded the space, everyday life and our body rapidly. The Internet environment and virtual space has played important role in our lives and some web pages have become popular such as social networks/media, blogs, video and photo sharing sites, virtual online games, video games and so on. In addition, “avatar” as a notion has become popular in the computing terminology and it is generally defined as the virtual representation of the user as a character in the virtual area. For this reason, the meaning of DM has been changed again as it is happened in SF cinema. For instance; the recent SF films such as; *Avatar* (James Cameron, 2009), *Surrogates* (Jonathan Mostow, 2009), or *Gamer* (Mark Neveldine & Brian Taylor, 2009) generally tells the story about using the real avatars in the real world. *Avatar*, the human can control the body and identity of another existence, Na’vi, in the planet called Pandora. Therefore Na’vi people’s identity has become the avatar identity of the human. Similarly, *Surrogates* movie is about the future that people exist in the public with their surrogate robots. So people just sit on the sofa and control their surrogates in daily life and in this situation people may seem different then their physical appearance or they may have different job than their real job. Likewise, in the future world of the movie *Gamer*, people play video games controlling the bodies of real people. For instance the main character *Kable / John Tillman* is a prisoner and he works as the avatar of the young boy *Simon Silverton* in a game called *Slayers*. Therefore to become an avatar is required also working to earn money in the world of real people and real avatars. The important point is that, as *TRON* and the *Matrix* reflect the development of their own time, in these recent movies, there is a possibility to have different

identity, to become someone else using the opportunities of the technology of virtuality. In the virtual area, even in the real public space, we do not have to be ourselves to exist; we can behave like someone else using our avatars. Thus, in *TRON*, we had to lose our body and identity to be in one of the real or virtual worlds, and we did not have ability to become someone else. In *the Matrix*, we could transfer our identity into the virtual space but we were the same person in both worlds, and recently, in *Avatar*, *Surrogates* and *Gamer*; we can be in the virtual space and in the real space at the same time without losing our own body and identity. We can become someone else. Without reservation, we also have had similar levels from the 1980s until today, and considering the recent movies that I have mentioned, not completely the same but we have our avatars in virtual area; we can control our avatars as we have different personalities and can be someone else on the Internet. Michael R. Heim explains the notion avatar as “flexible and fluid identity that reveals chosen aspects of the real “I”. Avatars can range from the simple e-mail nickname with graphic icons to the animated body about in virtual worlds” (Heim, 2003). It is maybe early to say that we can control other humans’ bodies as our avatars, but we control the machines now; cars, industrial machines, computers, and also with our body we control our avatars on the game on *Nintendo Wii* or *Xbox Kinect*. However, for the issue of DW the identity of techno-human is more significant than the body, because the identity does not need to wear, touch or hear something to be changed. It is just changed from the environment. Surely, we have similar environments in the movies that I have noted. Therefore, if we behave like someone else in virtual area, we already have our DW. Maybe in the near future, it will be soon to see our DW in the actual life, just like looking at the mirror. In brief, if we finish with the words of Heim, he says; “the avatar becomes a graphic embodiment of the world citizen, the Digital Me that attains freedom through deeper engagement” (Heim, 2003).

3.2 New Space of Techno-human

Human being is not independent from environment, society and space where one lives in. Human is biologically and personally changed by the space and its society because human needs to be social and integrated with society not to lose the connection with the world. In addition, the one needs to adapt the identity to become the part of the society and the space where the society lives in. It proves that the society and the space have mutual relation; they are affected by each other. Therefore, considering the society of today, obviously, it is changed

through technological developments and the roots of these developments have grown in the fields of technological determinism which is “the idea that technology affects society ... technology is something done to society ... how people respond to technology and its effects in everyday life” (Bell, 2007: 8). In this regard, in the light of mutual relation of space and society; I think technological determinism is also applied to the space that has been altered by technology since the society has been affected by technology too. Moreover, in my opinion, when technology affects the society, the connector role of the space between technology and society should not be ignored for the reason that technology affects the space and then the society is affected by its space. So the human in the space and society is altered. Thus, as a juxtaposed circle, there is affection from technology to space, from space to society, and in the last step from both of space and society to individual. Evidently, in this circle, technology is the dominant one; it is on the top and exposes the every element of the new space and society. It surrounds houses, offices, streets, even sky and it is difficult to reject the new formation of technology around. For this reason it is necessary to explain and understand interrelation of new space with new human; as I call techno-human. For the reason that the human spends everyday life in the city, each person has a role in it and one may change the identity through city. However, the alteration has not been about the meaning of the city, it has been about where the city is and how the city looks like. In the world of today; the city might be anywhere that people meet their needs, and the space might be anywhere that the human can exist; virtual or real. Thus, if every house can become a small city with all technological equipment and every person can exist in a virtual world having a space; how should we describe the space and the city? First of all, it is better to explain the transformation progress of the space during the post-industrial period, from the early 1990s to the third millennium. Besides, this explanation will bring the specific expressions of the relation between the space and the identity

In general meaning, Michael Benedikt mentions from space as an presence which is all around us, there and here, it is substantial and invisible penetrating us; it alternates our minds (1991: 125/127). Considering this relation of the space and the human, it might be clear that, evolution of the space causes the revolution of the human identity; as the space changes, the identity is redefined interacting with the space. This is because the human receives all lifelong information from the environment; the information which makes the one a person, an individual with the experiences and knowledge from the space.

For science-fiction, space has always been an important component to create the fictional world of dystopic or utopic future. The space has been used as restrictive phenomenon for the

visual form of the scientific fictional space. According to Scott Bukatman; “science-fiction is grounded in the new ‘intolerable spaces’ of technological culture ... to permit that space to exist in a manner now susceptible to human perception, comprehension, and intervention” (1993: 130). For this reason; the space becomes an agent between the new cultural environment of technology and human, in addition, the space moves from the ordinary form to the technological form shaping new human in the boundaries of postmodern (techno) society. In this society, techno-human has been lost in the new space of the postmodernity through technology. As a result, in the term of Bukatman, the city of postmodern space, in my term techno-space, becomes a paraspace; no coordinates, no boundaries, no space and no place (1993: 169). Besides, the space of today cannot be examined separately from the space of science-fiction as they supervene on each other. This is because each day, the space and landscape becomes similar for the represented fictional spaces. For instance, the population of the machine in the spaces increases and there might be more machines than human. We have already got used to see screens every part of our daily life from home to the streets, or we work all day long in front of a computer in the 75th floor of a skyscraper which is built with latest technology including cameras, sensors and screen walls, or the machines talking talk with us and etc.. In short, evidently, as Jean Baudrillard mentions; we are in the science-fiction.¹

3.2.1 Cyber and Techno-space

In the postmodern world, since the 1980s, cyberspace has been the most common term to define new space and this term firstly was used by William Gibson in his short story *Burning Chrome* (1982). Then he has become popular with his novel *Neuromancer* (1984) and Gibson’s cyberspace refers to a new stage, fascinating improvements in the expansion of human culture and business under the control of technology (Benedikt, 1991: 1). Michael Benedikt has various definitions for cyberspace and his definitions involve different areas; in my opinion; the most explanatory definition of cyberspace, which I relate with the techno-space is:

“Cyberspace: Its corridors from wherever electricity runs with intelligence. Its chambers bloom wherever data gathers and is stored. Its depths increase with every image or word or number, with every addition, every contribution, of fact or thought...it breathes larger, it complexifies, it embraces and involves. Billowing, glittering, humming, coursing, a city; intimate, immense, firm, liquid, recognizable and unrecognizable at once.” (Benedikt, 1991: 2).

¹ Cited from Bukatman, 1993: 182.

Benedikt's and Gibson's definitions of cyberspace were mainly related with the virtual environment and the virtual space where people can interact similarly with the alternative reality. However as Benedikt has mentioned in his book "*Cyberspace: First Steps*" (1991), cyberspace did not exist, and still today, the cyberspace that Benedikt describes does not exist. In addition, surely, Benedikt claims his idea in the condition of his own time, in the 1990s. In the 2010s; it is more difficult to make definitive sentences about existence of cyberspace, but today we have the 3-D movies and games, touchscreen and multiscreen interfaced phones, TVs and any other kind of computers, domestic electronic products (remote controls, lights) and game consoles with movement sensor (Nintendo Wii, X-box Kinect), educational and industrial simulations and etc. and these technologies remind us the cyberspace as a notion. On the other hand, as alternative definitions, Allucquere Rosanne Stone explains the period after 1984 as the field of cyberspace and virtual reality and she emphasizes that this period disrupts boundaries between postmodern imaginary including technological and social, biological and machine, natural and artificial, characterizing the social and communal spaces; as nature becomes artificial and culture becomes natural. (1991: 85, 95, 110). Additionally, Marcos Novak describes cyberspace is the part of our creation and the reality of human is a version of cyberspace (Novak, 1991: 243). Therefore, as cyberspace means a big subject matter and has various definitions, moderately, from this perspective of the new space, if cyberspace does not exist yet, techno-space is more appropriate term to define these new spaces. Hence, I think, we are on the halfway through cyberspace today as technology improves rapidly since the 1990s. On the contrary; because of the visual and technological advantages of cinema, there are expressive examples of cyberspace in SF movies. As science-fiction as a genre, the mostly in the literature and cinema genre in my subject, it produced new imaginary spaces and cities defining the new realm of cyberspace and techno-space. Moreover, the new city designers; directors, authors and scriptwriters of science-fiction generally have included the development and effects of the technology on their imaginary world. In fact, it is also important to mention that there are similarities between the spaces of today and cinematic visuality, because the new dimensions of the space can be firstly seen in the cinema, and externally, cinema produces and presents future worlds and spaces with the possibilities of the technology, forwhy, cinema is an art form which is immediately affected by development on technology.

In the SF movies; cyberspace is represented in two ways; in the first way, real space of the movie is created as a synthesis of cyberspace and real space. In the second way, space of the movie is represented only as cyberspace as its own or the space is created outside of the

earth. In this case, more of the SF movies follow the first way integrating cyber and real space, however, two of *TRONs* movies may be used as an example for the uncommon second way because the characters of the movies enter into inside of computer, imaginary unreal virtual space; physically and identically. Therefore, in the following part, I prefer deeply to concentrate on the first way of showing the cyberspace to compare the SF movies and the space of today because as I have noted, today's space is not completed cyberspace, it is hybrid as in the SF movies. Real world with the virtual; the composite space which affects the identity of techno-human, so I will use the techno-space as a term and nation considering techno-space can be the last steps before Benedikt's first steps of the cyberspace.

Moreover, cyberspace changes society entirely. Meredith Bricken says: "a car is not simply a horseless carriage; cars have completely changed society. So when we will have movies and TV, and so will cyberspace" (1991: 380). In addition, cyberspace turns to the specific example of the postmodern urban language and also it is a technological utopia, a computer simulation within the reality and mode of production of postmodernity (Bukatman, 1993: 151, 156). Also, I think, today, cyberspace may be considered as technological dystopia, because since the time of Bukatman's explanation, dystopia did not only stay in the future of science-fiction cinema, it also has moved into our everyday life, into techno-space, as techno-human becomes real and moves from the SF to the world of today. In addition, in SF cinema, when cyberspace is used to describe the futuristic spaces, spatial features and spatial critics of fictional utopias and dystopias, even for the movies before the first use of the term¹, today, almost twenty years later, cyberspace is being used to describe the space of today; referencing, explaining and extending it because the fictional symbolization of cyberspace has been materialized in the postmodern world. In this regard, David Bell moves the definition of cyberspace from virtual space to the real space and he claims cyberspace is a space which includes and MP3 player, mobile phones, medical technologies, digital animations, simulations and such, combining all these devices and more of them and connecting them with each other. Further, he mentions that cyberspace does not only belong to actual world, it also exists in the fictional imagination of us when we make the stories about this world. Therefore cyberspace has "appeal and conceptual purchase, folding together technologies, uses and users, experiences, stories and images" (Bell, 2007: 1-4). Thus, different than Benedikt's definition for cyberspace as more virtual meaning, according to the definition of Bell for the cyberspace

¹ *Metropolis* (Fritz Lang, 1927), *THX 1138* (George Lucas, 1971), *TRON* (Steven Lisberger, 1982), *Blade Runner* (Ridley Scott, 1982)

from the 21st Century's point of view; this new cyberspace has moved from inside of the computer to the world of human, and at this point; it has become the part of techno-space, and both concepts are interacted with each other from one to another or vice versa. As an illustration, Bell explains that we experience cyberspace when we sit in front of our computer, and I can add this example many other devices such as mobile phones or game console, because we interact with cyberspace when we use these kinds of devices. Further, as we interact with the device using our body, we sense the cyberspace on it, looking to the screen and surfing in it, therefore, with imagination and ideas we are there in cyberspace. In this point, we experience two different spaces at the same time and as Bell mentions "this experience as 'living in the gap' between symbolic imaginings of cyberspace and the 'realities' of life with these technologies" (Bell, 2007: 6,7)¹. At this point, techno-space is used as a term to define the combination of these two different spaces experience, techno-space covers both space and also the gap that we live in between.

Techno-space is not literally defined but I think it can be the distinctive notion as techno-human experiences the technological space in between cyber and postmodern area. In addition; I believe there is a visual and structural correlation within the idea of *terminal space*² –or *electronic space*- of Scott Bukatman (1993: 103) and techno-space. In addition, techno-space is also made of *technosphere* which is out of human control (Bukatman, 1993: 140). For the society of techno-space, social world of virtual culture, in a short term; technosociality is imperative reality as technic is nature and organism interacts with technology collapsing and imploding into each other (Stone, 1991: 111). Therefore, in Bukatman's study to reach the description of techno-space, the sturdiest way is to delineate the similarities in between the space of SF movies, postmodern world and forthcoming cyberspace considering technosociality. In this manner; it is possible to have comprehensible explanation of techno-space and its effects on the identity of techno-human.

If one part of the techno-space comes from the cyberspace, it is useful to find out the affinities of cyberspace and techno-space. As the techno-humans of today, we are familiar with the dark and crowded space distorted by neon forms and corporate structures; and the city has been converted to techno-space. Since the 19th century, developed cities have had railways, highways, subways, cars, department stores, theatres, circuses, spectacular buildings, passages,

¹ David Bell uses reference here: Taylor, P. (2001) 'Informational intimacy and futuristic flu: love and confusion in the matrix', *Information, Communication and Society* 4: 74 – 94.

² The space that is the terminal identity exists.

and telephone lines. In addition, until today, the beginning of the second decade of the 21st Century, as technology has grown and developed, we have the similar cities with two centuries before but the elements of the city are improved by technology. In today's cities we are witnessing multi-functional shopping malls, skyscrapers, any kind of multiplexes, digital screens, security cameras, the areas with wireless internet connection and base stations. Depending on all these features, the new information is produced in the techno-space and this information cannot be related with the traditional information of the traditional space. This new information network more seems as the modern urban areas of today.

Additionally, workspace of techno-human is redefined through techno-space. House has become office with the support of a computer and the Internet; people do not need to leave their countries, cities, houses and even their rooms to earn money. It is same for students through online education. It is faster, cheaper and sometimes easier to work in the world of cyberspace, the Internet, simulation inside of the computer. In *Sleep Dealer* (Alex Rivera, 2008), the main character Memo, works in Mexico as a controller of the machine in the building construction area in the U.S.A. He plugs into the system using connection port holes in his body and wears contact lenses, then uses his body to make the machine work. At this point; perception of the space is changed for Memo, because he sees himself in another country, but he is just there as a machine, as a worker. His identity is there, but not exactly in the real world. He is in between the artificial and natural space during his work. If Memo has become techno-human, it is same for the human of postmodern world. Today, in business, journalism, computer programming and many other professions, people are free to choose their space, home or office. Only computer and the Internet is enough to make the work done. For instance, an interpreter for a global company may work from his/her room, or a business man may organize all schedule and meetings through his personal computer and even he can hold a meeting on the Internet. For this case, Pruitt and Barrett use the term Corporate Virtual Workspaces (CVWs) and they claim CVWs are more productive work environments than the past. For future, CVWs are the ways for companies to the economic success and they will change the character of the society, companies and all economic system. Thus, it became almost real what Pruitt and Barrett anticipated for their future in 1991 as we see in *Sleep Dealer*. The new virtuality of our workspaces makes our character a part of techno-(cyber)-space. Similarly same situation is possible for travel and experience of the memory. In addition; in *Brainstorm* (Douglas Trumbull, 1983) which is the name of a device to wear on head and to experience the reality of others in different spaces, the real space does not change but the artificial space and also the

space of the identity is changed. Moreover, wearing the device on head, the identity of the person in non-fictional world also changes too, combining oneself within the space of the machine and space of the real. In this case, one version of techno-human is created in the both worlds. Likewise, through web, techno-human of the present day can have emphatic experiences with other people all around the world. As an illustration, I watched live webcast of the singer PJ Harvey concert in Coachella Festival, Los Angeles through YouTube from my room in Istanbul. I had been in double time and double space at the same time; in virtual and real ones; and also maybe not exactly same, but very similarly, I experienced the concert synchronized with the people there in the festival. Furthermore, maybe not with every five senses, but television has same effect for techno-human, the mostly addressing to our auditive and visual senses; it is like watching Iraq war in the television news, hearing the bombs and seeing the war is there, or watching travel television series; feeling like seeing and experiencing that city or country, or having car crash experience from the first person point of view camera record in the videos on YouTube. Therefore, using a medium in techno-space one can have new experiences; travelling identically and sensually.

3.2.2 Vertical and Concentrated Space

Today's cosmopolitan cities extremely have common features with the represented spaces of SF cinema. Since the 1860s of the first subway transportation line in the London Underground, the cities have not been only expanded horizontally on the land. The most of the big cities were built through the vertical direction, not only for transportation, also for living. For instance; when I visited Paris, Berlin and London, I spent the most of my time in the underground to travel in the city. Sometimes subways were more crowded than the over ground. The situation explains the meaning of Bukatman's cyberspace as the spaceless space and timeless time (1993: 121) due to congestion on the land of the city. There is no space over the ground to serve all the needs of techno-human, so, all the transportation, some of public systems and shops move into underground. In the all of those multi-layered vertical cities, one cannot see the sky and the sun due to being in the underground tunnels and eventually loses the sense of time; it is resulted in the creation of non-space and non-time vertical settled city. Besides, with the verticality, the city implodes and then it becomes concentrated and inverted in

itself.¹ Therefore, in the city, there is no beginning, end, top and bottom in a natural way. Technology is a creator and controller of the limits of the city and techno-human can travel as far as technology enables from into the ground and to the upward of the sky (planes and spaceships). Furthermore, on the one side the centre of the city is erased or multiplied on the other side the city expands as large as technology allows it. In this case; every subway station, every shopping mall, every street, even every house might be the centre as techno-human reaches to the all information and facilities which are needed through technology; new/digital media, information, money, food, communication, machines, the Internet and safety. *Blade Runner* (Ridley Scott, 1982), adapted from novel by Phillip K. Dick, sets in the space of no centre and no boundaries with the hover cars and rooftop chases drawing three dimensions topography. The concentrated and vertical city of *Blade Runner* presents the past as our present day, using the appearance of the city (Bukatman, 1993: 130). Appearance of *Blade Runner*'s city includes all possible technology in its three dimensions; technology, information, culture, artificial, nature (if it is still there) and industry. In addition, all these contents of the city is stuck in the same space; therefore, the resident of the city; techno-human is stuck too. Furthermore, as we experience today, in *Blade Runner*; new and old, east and west, bad and good, wealth and poverty, human and machine are cluttered in the homogeneous² compact city. For instance, in the techno-spaced cities of today, it is possible to hear Chinese and American country music at the same time as we saw in *Blade Runner*, or neon lights and digital screens are possible to be seen in the same streets, or mud walled and metal (also glass) walled buildings are still there next to each other. The zones and areas are generally divided specially only for wealthy or poor people and located side by side.

The visuality of the city in *Metropolis* (Fritz Lang, 1926) proves how the remapped cyber spatial city of the fictional world materialized of the city of today. Vertical extension and placement of the cities of today draw the real picture of the Fritz Lang's imaginary city. Likewise *Metropia* (Tarik Saleh, 2009) creates the future of today's cities constructing the new public space network on underground. TREXX is a company which connects all European capital cities with each other by underground railways. Consequently, the ground of the city becomes useless. Therefore, TREXX can be considered as the international version of local transportation companies in the present day and the continental Europe is a city. The most of people live in the underground and the company TREXX opens a new space for the public to

¹ The terms; concentrated and inverted city is used by Bukatman in his book on various pages. (Bukatman, 1993)

² Homogeneous term is used in Bukatman; 1993: 134.

live and travel in; digging the ground to make tunnels, stairs, shops and supermarkets, therefore, spaceless place becomes a space. This vertical and underground transfer and mobility causes the new perception of the space in the identity of public and one self. Besides; this new way of using the space is conceived by the technology and technology fills the over ground, connects the cities, creates the networks, digs the land and creates the *Metropia*, dystopia of metros. At this point, it is not difficult to say that the big cities of today might be the example of the beginning of *metropic* spaces. When you look at the metro map of Berlin, London, Paris, New York or Hong Kong, the maps have visual complexity of the network of TREXX; one colour for each line and more than 10 lines in many cities. For this reason, transportation and travelling in the city space only means following only the coloured lines on the map for the techno-human. Space is formed by the underground lines and their colours. If you want to travel somewhere, you have to follow the lines and connection stops because the space is not yours anymore, it belongs to the lines, the companies and so the technology.

The first aim of the architecture of the city in the post-industrial period is to create the most useful space in the minimum area using the advantages of every new technology. Therefore, outside of the major cities; there are minor city-like spaces to serve for the every need of techno-human. As it is said for the subways, the shopping mall is emblematic of the concentrated minor city-like spaces. Bukatman mentions the shopping mall rejects the outside world, there is no window or weather which connect the inside and outside (Bukatman, 1993: 126). Moreover, many shopping malls' entrances are generally big and easy to find but exits are not big and also more difficult to find. It is same for the cinema multiplexes; waiting lounges and entrances of movie theatres are very comfortable, colourful and luxurious, however, adversely the exits are in the form of dark halls with the faces of cold grey walls. This is because the shopping mall and the multiplex need to keep the people inside and make them not to leave. Therefore, one can find everything inside of the concentrated places such as toilets, food courts, clothes, electronics, art (theatre and cinema), and fun. Besides, there can be found artificial nature inside such as; trees, plants, ornamental pools or artificial parks. Besides, today, the shopping malls are not only located in the suburbs, for the reason that it is difficult to find an empty space in the big cities. Shopping malls are built even inside of the cities to serve people various things in one building; like there is a small city in the city centre. For this case;

Bukatman uses the notion of “imploded urbanism” for the shopping mall referencing the idea of Fredrick Jameson’s “total space”¹ and he explains:

“This imploded urbanism, reconciling the irreconcilable differences between public and private, or inside and outside, is insistent upon its status as a ‘total space’.” (Bukatman, 1993: 126).

Additionally, similar with techno-space; one side of *imploded urbanism* and *total space* is visually affected by the technology. As we pointed for the technology; concentrated cities have two faces; one is the visible part and the other one is the hidden one. As we cannot see behind of outer appearance of our electronic products, we also cannot see what is hidden behind the walls of the concentrated city. It is similar with the minor one, shopping mall. The shopping mall and technology are the ones which help hide the backside of the space. For instance; electric cables, water pipes and carcass of the building are shrouded as the sewages are buried under the ground of the vertical cities. In this regard, the space of *THX 1138* (George Lucas, 1971), is more purified and simplified interpretation of the concentrated underground space, similar with the shopping mall. It is difficult to identify the space because as a shopping mall there is nothing to predict the space and time; no window, no weather and no sense of time. However; there are floors, a car park, escalators, houses -consist of one room as a small shop size-, and an exit –far from the centre, the difficult one to find and reach-. In the heavy-white space of *THX 1138*, it is forbidden to go outside and there is nothing to see at the outside world. As I have noted this is also the aim of today’s shopping malls. The protagonist of the movie; *THX1138* wants to find exit and leave the space. At the end when he exits, audience and protagonist realize that the city was under the ground. For the shopping mall or the multiplex, one cannot know where one is geographically and what the time is; because supply of the technology is enough to create the *imploded* techno-space, covering the all environment with itself and altering the nature of the space. In addition, in the perception of the techno-human; meaning of inside, outside, where and when is recreated again as the component of the communication between the identity of human and identity of the space.

3.2.3 The Space is Multi-technosized, so the Techno-human

Since the 1980s, with spreading and penetrating of technology into the everyday life of industrial society, as I mentioned, the area of techno-human has been affected. This new

¹ Bukatman notes a reference for Jameson, Fredric. (1991: 81).

society has involved the activity of human. Human behaviour, contribution, production and consumption are transformed by this informational society through finance, communication, advertising, education, entertainment and management. In addition, the meaning of property, travel, workspace, outside / inside, personal / communal, private / public, machine / human, capital and labour is redefined in the late capitalist space (Benedikt, 1991: 121)¹. These notions still are being defined with every new technology related with the human and the environment. These redefinitions are provided by the all technology around of techno-human, not only one machine, all machines. Hereby, the space is multi-technosized by multiple machines. In techno-space, identity of techno-human is exposed by new media, information data and images of digital. Further, so as to adapt oneself with the space, it is obligatory to connect the all these informational system. In addition, multi-technosized space is synonymous word for Kevin Kelly's notion; technium; as I have cited before; the whole adaptive system of technology and culture.² As a result, living in the multi-technosized space becomes techno-social constrained adventure for the human as it happened in science-fiction.

The history of the multi-technosized space may attribute to the invention of the wheel. However, my idea specifically more concentrates on the post-industrial technology including the cyberspace/techno-space of *electronic* and their allocation in the private space of techno-human. I mentioned that cyberspace, again because not as a machine, but as a mediator, as a link between techno-human and multi-technosized space. In this situation, techno-space includes online education, online banking, ATMs (Automatic Teller Machine), security (face/identity scanning) cameras, social, conventional and new media, communication networks (mobile & telephones), screen, all domestic and personal electronic products (washing machine, television, camcorders, computers and so on), transportation networks and etc. For this reason; since the one was born, s/he has been surrounded by technology; incubator, toys, baby monitors and etc. Additionally, a baby meets with technology at very early ages, and sometimes an electronic toy (a toy car, a talking doll) becomes the baby's best friend. Soon after, when the one grows up, technology has always been there, at the first steps, at school, at home, at work, inside and outside. Afterwards when the one gets older, again the technology tries to keep one alive supporting with the hospital equipment. Therefore, technology becomes a natural existence around us during the lifetime and we already have got used to it as a content of our space and our identity. Moreover, today, machines are taking up more space than human;

¹ Some notions are added by me to enlarge the content of Benedikt's idea for techno-space.

² http://www.kk.org/thetechnium/archives/2007/02/major_stages_of.php

there is one human form but various machine forms. This is one of the reasons why I use techno-human and techno-space as mainly nations because space and human lost their natural meaning as the technology becomes the dominant one. As I have noted, in the new space, there is a multiplied version of the technology; from our rooms to our offices, from the sky to the public toilets and even to the isolated forests. It is spreading and affecting us; hence; in the following part I will discuss some elements of this multi-technosized space using some examples of the machines which are around us.

One of the first examples of the multi-technosized space for the recent day can be the ATMs (automated teller machine) and also all global banking system as ATMs are everywhere, 7 days, 24 hours and agents to help us reaching our money. They are one communication way between ourselves and our capital which we do not see physically in the techno-space. As Bukatman mentions, cyberspace is where our money is and it is a financial space, and a place to test all technology (1993: 156). Therefore, through cyberspace, companies deposit the salaries to the bank, and workers go and withdraw the money from ATMs or spend it using their (credit) bank cards and the money becomes physical from cyberspace to the real space. For this reason, as ATMs and bank cards are important for our daily life, they are everywhere, on the streets, in the shopping malls, at the stations, even in the grocery shop near our houses. If there is not ATM, for sure there is a POS (point-of-sale) device which gives you opportunity to use your bank card for shopping. In addition, ATMs have connection with the private information of the user and they are integrated to everyday life of the user. Accordingly, they change consumer practice of banking for oneself (Kellogg, Carroll, Richards, 1991: 427). Similarly, online banking is always there too; on the Internet (also telephone banking) and any kind of bank transactions. The one does not need to travel to the nearest branch, just needs to travel to so-called virtual space of the Internet. For this trip, the one needs to be in the techno-space at first; the Internet network, a line, a computer or/and a mobile phone¹ should be around to reach and enter into the virtual space.

Concurrently, as a result of keeping all personal and public information in the techno-space, the space should be protected from the crimes, “unpleasant” behaviours, hackers and also the space must be controlled by the governments to keep the society ordered and well-organized. Therefore security / safety become important and the governments and companies use all possible technology to provide the safety of the space. For this reason, the space is

¹ Some bank companies sending password for online banking through SMS (Short Message Service) to the mobile phone of costumer. Also sometimes one can connect to the Internet through his/her mobile phone.

equipped by machines; cameras, x-ray security scanners, any kinds of alarm systems, digital identity cards and guns.¹ Significantly, I think the cameras are one of the most ubiquitous machines of multi-technosized space as, all central streets of big cities, business centres, shopping malls, highways, airports, public stations, even the houses are supplied with surveillance cameras today. Hence, in the every area of our life, we accept the presence of those machines. For instance, in Istanbul, there is a security camera system called MOBESE (Mobile Electronic System Integration) and the MOBESE cameras are on every main street of Istanbul to record and control public spaces all the time. The cameras of the system are not only based on basic camera technology but also connected to the database of the police department. Moreover, as they record everything, they follow people's movement and walking in the space and scan face of people identifying and using the police records. The cameras and all system help to the police to follow every each person in the space, especially if there is any suspect profile; the cameras find him/her. Thus, as in many other metropolises in Istanbul, people live in the space knowing that cameras are there recording, following, identifying people and they are part of the space. This is very similar with the space of movie *THX 1138*; cameras are main part of the space of the movie and they are used to control each citizen, even in the house, and to dominate on the society. For this reason, people behave considering the cameras watching them and techno-human behaves on the same way today. Furthermore, the human of today is more paranoid than the human of *THX 1138* because, today, the cameras are very small that they can be camouflaged very well in the secret places so as not to be seen by people. Hereby, the privacy of techno-human is not certain in any space; it possible to see (or not to see if it is hidden) "finger" ("spy" is another term) cameras in every space; and in the different shape; as a watch or a pen. Therefore, private space has lost its certain definition through technology. The movie *Ghost in the Shell* (Mamoru Oshii, 1995) significantly estimates spreading of spy cameras into the space and how government, politics and big companies use this technology in its literally meaning; "spying" the public and private spaces. On the other hand, the movie *Eyeborgs*² (Richard Clabaugh, 2009) shows camera based security system in the future and I think the movie is inspired by the security system of today for the reason that there is "freedom of observation law" in the future of the movie and the system is named OPIN (Optical Defence Intelligence Network). Akin to MOBESE mostly differently, at the OPIN system, cameras move in the space, they can walk and enter into the buildings, they have the right of judgement,

¹ Guns are used by the security departments of a government; police, soldier or detective.

² This movie is not critically acclaimed, maybe the reason is that it is not a mainstream movie but I used as an example because the main idea of the movie is worthwhile for this topic.

they are armed with the guns, so they are kind of judge of the system for the crimes in the space. Moreover, people are judged depending on what camera records, exactly, it is same in the system of today for all countries. If there is a camera record in a crime scene; the record is a proof of what happened in the space. In this regard, to keep under control the congesting space, the space is technosized commonly with the cameras to be “protected” and also by the other devices and systems¹ that I mentioned.

As the outer space is multi-technosized, for sure, the most private space of the human, an interior one; home; is designed with multiple technology, generally with the domestic appliances and electronic gadgets; white goods² and brown goods³. However to simplify all these terms, I will use domestic goods and domestic appliances to combine the notions and devices in one category. During the post-industrial period, domestic goods have become very important to serve to people’s needs and today, the idea of home is defined with the domestic goods. A house is not a home without the basic equipment and the basic equipment includes some of domestic goods. Therefore, domestic goods become the basic elements of the home. Furthermore, every day, the scope of basic equipment and domestic goods are extended. In the past, domestic goods included limited machines such as; washing machine, refrigerator and cooker. Then television, radio, computers and other small electronic devices entered into the home, and today, techno-human does not only have each of domestic goods that people have more than one television, radio, computer and other domestic goods. Therefore, at the home of techno-human in the third millennium, domestic goods occupy larger space than oneself; even they occupy the walls and ceilings. In addition, people design their homes depending on the machines they want to have at home. Techno-humans also use the domestic goods as a part of their lifestyle; choosing appropriate products matching with each

¹I mean; X-ray security scanner bands and metal detectors in the airports, shopping malls, or governments’ buildings or alarm systems for robberies. I have not explained these devices and systems as much as the cameras because cameras are the most common than others and the cameras have closer interaction with people in the space. For example; alarms are used for thieves specifically, or x-ray security scanners are used for properties of people, not people’s own. However, the latest years, in the airports, there is a new security scanning system which scan the all body and show one’s body naked on the screen, however, this topic is more related with the privacy of body and it is not expanse yet. The gun is also a part of the security system of the space but, it is more personal device than public device, therefore, I use the gun in the topic of altered identity through personal machines, not through the space.

² White goods are defined as large electrical goods used domestically such as refrigerators and washing machines, typically white in colour and heavy consumer durables such as air conditioners, stoves, etc., which used to be painted only in white enamel finish. Despite their availability in varied colours now, they are still called white goods. Sources are: http://oxforddictionaries.com/view/entry/m_en_gb0950020#m_en_gb_0950020 and <http://www.businessdictionary.com/definition/white-goods.html>

³ Brown goods are defined relatively light electronic consumer durables such as TVs, radios, digital media players, computers, audio equipment and similar household appliances. In some sources, computing equipment defined as grey goods. (Sources are: http://oxforddictionaries.com/view/entry/m_en_gb_0104940#dws-m_en_gb-m-en_gb-msdict-00002%E2%80%93044237 and <http://www.businessdictionary.com/definition/brown-goods.html>

other in the way of colour, design and style depending on people's own interests and tastes. Besides, even when people are not at their homes, the machines are still there and they work; such as refrigerator, heater system, air conditioner, modem and so forth. In this regard, domestic goods belong to the space of home more than the resident.

Not so far from the experience of today, the multi-technosized home has been experienced in the SF cinema in the past intending today and today intending to the future. To demonstrate; television series *The Jetsons* (Chuck Couch & Evelyn Gabai, 1962 – 1988) redefine the notion of home not much different than today. According to *the Jetsons*, people live in the sky in the near future, but people still live in the homes which are very similar to the home concept of today, *The Jetsons* have very high level technology in their home; video phone, flat screen and 3-D television, microwave oven, sensor automated lights and doors. They have robot maid, therefore the prediction of the series is almost materialized today at the home of techno-human. However, *the Jetsons* reflect only the utopic picture of future home, whereas in *Brazil* (Terry Gilliam, 1985), the future home is totally filled with the technology. There is very small space for people; the home of *Brazil* looks like a dumping trash of the domestic goods. It is a place for the machines only, not for a human. According to these two examples, for today, techno-human is in the middle of the utopic and dystopic multi-technosized home that home is not garbage yet and it is not pure and fresh. Therefore it is not very easy to describe the home of future but it will stay multi-technosized. On the whole, to meet one's needs in the most private place, technology is necessary and it is very difficult to throw out it. This is because, in the conditions of today, home will not be home anymore without the machines for techno-humans. Accordingly home looks empty without technology.

Another element of the multi-technosized space is the cable, inside and outside. The cable becomes essential neural system of the all space carrying the electricity, connecting the lines and covering the skeleton of the space between / inside the walls, hanging on utility poles under the ground. It is under the mask of the space as we know; it is there and we do not want to see it but we have to admit it. This situation is same for the any wireless (without cable) technology¹ which is produced to make people move freely in the space and to rescue techno-human from the enthrallment of the cable. Techno-human has already got used to living with the cable and now there is a new connection technology all around the space, not so much different from the unseen one. We do not see the connection of the devices physically on the wireless

¹ I mean not only wireless modem technology; I also mean mobile phone, remote control, transmitter and any other device which connects each other without cable.

technology such as with mobile and wireless phone, remote control, transmitter, radio and television signal and antenna, wireless modem / (wireless Internet) and networks, printers, computers and GPS (Global Positioning System). Even if it is impossible to see the physical connection amongst devices, these devices have frequencies, signals, x-rays. These waveforms are elements in the space and everywhere. Even, one goes to the forest to isolate oneself from the technological space, all the wireless lines and signals might be there in the space. Therefore, to define the space as multi-technosized, sometimes it is not necessary to see a technological product, as the cable, with the wireless technology; any space might be the technosized through the invisible lines and waves.

3.3 The Screen as the Identity

One of the most significant symbols of the techno-space is the “*screen*” both in the non-fictional world and SF movies. In the fictional and non-fictional world, nobody can think or create a space without screen; screen of televisions, computers, mobile phones, digital billboards. The screen connects us to the information of global world, information of the society and information of the others (others are everyone except oneself). Moreover, every new technology (e.g. tablet PCs) brings the screen in our environment day by day. In addition, screen is the first surface between two sides, virtual and real. It is also a boundary between the space of information and the space of the techno-human. Therefore, techno-human needs to pass the barrier of the screen to sense and interact with the information of the data inside (Bricken, 1991: 364, 365). This interaction is more powerful with the screen of computer monitor as the real space of the human is multi-technosized and the desktop of the computer is multi-informational. In one screen, one can communicate with people in social media, surf on the Internet, study, work, watch movies and TV, listen to music, play game and produce using software. Therefore, computer screen is multi-functional depending on user’s imagination and the computer screen becomes the reflection of its user’s identity and vice versa. On the other hand, in the limitless techno-space; the screen is the one which draws the line of the information and virtual space as techno-human receives the information within the frame of the screen. When one looks out of the frame of the screen, s/he cannot receive that information anymore and the screen is not there for her/him. Therefore, our perception is determined by the limits of the screen and its frame; otherwise, we lose all communication and interaction with the information. It explains why the all techno-space is covered with the screen; obviously the

system of postmodernity wants to inform techno-human everywhere and every part of the daily life. Information must reach us and then we can buy and produces new information for the screen.

The screen theme is used well in the recent popular SF animation movie *WALL-E* (Andrew Stanton, 2009) which shows the humans in the spaceship in the year 2775 and all human live with the screens in front of them. They do not see anything but the screen and all the time, they do not communicate with each other and the outside world of their screens. They look like hypnotized and they forget their humanity communicating with the screen only one way direction; from screen to human. Therefore, the meaning of the space and time for the humans of *WALL-E* depends on the screen. For instance, in the movie, a woman's screen is switched off and then she realizes the real outside world around her. She gets surprised and shocked for the beauty and amazement of the sky, sun and space that she sees. In addition, the concept of the space changes for her; from the screen to the sky. She is not the same person anymore. She also perceives the time as day or night, so her perception changes and it affects her identity. The screen creates an alternative reality for its interior space inside of the real space. In this double reality, the human is identically altered in between two realities and while human is exposed to the space and reality of the screen, identity becomes hybrid through reality. Technological and natural it is the identically hybrid techno-human. Thus the screen is the powerful technology to create alternative and virtual space in front of us; attaching our personal space to its inner space changing our perception and taking our attention to its own virtuality. Indeed, today, it is possible to empathize with the humans *WALL-E* as we have screens in front of us, reminding of my bus trip with the screen. In addition, for the same reason of the screen in *Blade Runner*, the screen creates its own virtuality hanging on the walls of the city; synthesizing the image, text and information. The city is not made of buildings; it has the depthless of the screen after all (Bukatman, 1993: 132). Besides, Bukatman mentions about the importance, effects and the alternative reality of the screen in the terminal space -I reference to the techno-space- saying;

The screen operates as the frontier between the two realities; physical and electronic. It is a space without centre or ground, and with only a vector-graphic simulation of perspective (too crisp, too perfect) to guide a human eye that has suddenly become distinct from its corporeality, its spatiality, its temporality, and its subjectivity. (Bukatman, 1993: 108).

In fact, the screen is not only in front of us but also around us. It is the part of our techno-space, our techno-society and so our techno-identity. If the space of postmodern world cannot

exist without screen, it explains why the spaces of many SF films significantly have screens and monitors all around. In the techno-space, the aim and the content of the screen can be categorized in two groups: advertorial and governmental. Covering these two groups; in the techno-space all of the screens are informational. The screen gives the information about the government or information of a product in the advertisement and also screens can show the television channels; the news or any other TV shows. Thus, the space becomes an informational space which is made of the screens of the visual technology.

In the first scene of science-fictional movie; *Vanilla Sky* (Cameron Crowe, 2001), the protagonist David runs on the empty streets of today's New York; him, buildings and the screens on the walls of buildings and generally screens of the advertisement and information. In the final scene he gets crazy and screams in the middle of the screens. The feeling that David experiences is familiar with us, techno-humans, because the first scene of the movie can be considered as the reflection of how the screens fill the space of our modern cities today and how it affects us. Not only New York, similarly and widely, in every capital and big cities of the 2000s; it is possible to see informational and advertorial screens at bus stops, metro (subway) stations, inside of the buses, metros, trains and cabs, on the shop windows, on the streets, on the wall of the buildings and on the sidewalks as billboards. All these screens expose visual, audial and textual information to the people. Sometimes, one cannot find any place without screens in the cities. From our rooms to the streets, from buses to the shopping malls, even in the public toilets, it becomes impossible to ignore the screens around us. Therefore, every second of our daily life, our identity is available to be in the space of the screens and being exposed to the screens and their information every time. The reality of the screen becomes the reality of the space and both of the realities are perceptually are integrated as the reality of one self's identity. The one does not have one personal reality and personal perception anymore. The space and reality are altered by the technology and the information of the screens in the space of postmodern world so there is no unchanged reality and identity anymore.

In the cording of the relation between the screen, new space and identity, the screen cannot separate from its technology. For this reason, the screen is not only a screen itself; it is the symbol of technology. In *the Fifth Element* (Luc Besson, 1997), the city space is plated with the screens everywhere in the year 2247. All the walls of the buildings are used for screens, mostly advertorial and people cannot ignore the screens and their information. They have to learn to live with them. *The Fifth Element* estimates for the human to live in the space

of screens in far future but from today, techno-human has chance to experience the similar space of the movie. In *Equilibrium* (Kurt Wimmer, 2002), after possible the World War III, there is a dystopic future, but the screen is still there and it is used by government to dictate the rules and laws of the society. The screens are always switched on and there is always declaration of the government on the screens for dictating the strategy and laws of the government for the people. Therefore, the screen becomes the agent between the government and public; similarly, this situation is very much like that we sit at home and watching the president speech in front of TV, without seeing him/her, just listen to what he/she says. In *Gattaca* (Andrew Niccol, 1997) and *Brazil* (Terry Gilliam, 1985), screens are generally used in the offices for workers; so the screen becomes the agent for business life. In both movies, every officer has his/her own screen to work and to earn money through. For this reason; it becomes obligatory to receive the screen as an agent into our lives and obviously, there is no escape from the screens in the future. Today it is same that in the every area of our life, we are in, in front of and behind the screen.

4. Conclusion

4.1 Summary

This thesis has studied techno-human as a notion to define new human who is exposed by the technologies and machines comparing the representation of altered human concept in science-fiction cinema with human concept in the post-industrial period of non-fictional world. In the thesis, background studies on information and environmental technologies, digital and new media, prosthetics and cyberculture have been used with the films studies on science-fiction cinema. Introduction part gives the brief information about how SF cinema is important and explains the reason for why I choose the SF cinema to compare with the non-fictional world. Further, the part describes my aim describing and using the notion techno-human concentrating on significantly the altered human body by technology so the identity. For the reason that the both area; SF cinema and post-industrial society, are big subject matters with various background studies, I have explained the methodology I have used for both multidisciplinary study areas including my main references as the articles and the films emphasizing the methods of the thesis such as; qualitative, exploratory, close analysis, critical film and visual analysis with reviews. In the following part of the Introduction, I have

mentioned the previous studies on the areas which are related with the notion of techno-human. Therefore, I have discussed the relation between my subject and pervious approaches which have done on the areas of science-fiction, the body, the identity, post-industrial terms and cyberculture.

In Chapter Two, I concentrate on the surrounded and exposed body which has discussed the body of techno-human in the light of physical alteration of human by technology. In the first part of the chapter, I have emphasized the body and machine relation using the term techno-body which involves implanted and extended body of techno-human, analysing the penetration of technology into the human body and the consequences of this penetration. In the following part, I have studied the binary opposition of human versus machine in terms of the circle which includes destroying and recreating of human body by the machines. Afterwards, my subject has become how the body has been mediated and mobilized by wearing, information and communication technologies discussing the common technologies which have been used in SF films and today such as; mobile phones, computers, cars, clothes and such. At the final part of the Chapter Two, I have mentioned the modification of the body concentrating on relocation of the limbs by possible technologies from fictional to non-fictional area like; body detecting (sensor) and voice-commanded machines.

As I have studied the body of techno-human in the Chapter Two, I have discussed the identity of techno human in the Chapter Three to mention the notion of techno-human does not only include physical part of the human. Further, the notion also involves the identity considering the human is a whole existence with the body and identity because these both parts interact with each other and also affecting each other. Therefore, in the first part of the chapter, digital / virtual identity has become the subject of the discussion which is about identical alteration of human by the Internet, video games and virtual spaces. Moreover, the experience about the identity that we have today has been compared with the SF films such as *the Matrix* (Andy & Lana Wachowski, 1999), *Avatar* (James Cameron, 2009), *TRON* (Steven Lisberger, 1982) and *Minority Report* (Steven Spielberg, 2002). Following part of the chapter includes the analysis of today's space comparing with the space of SF films. Therefore, as the space is a big subject matter, I have divided the part subchapters which have studied the space from different perspectives. At first, I compare the similarities and differences between the famous notion cyberspace and techno-space which is the space of my subject; techno-human. The main point of this part is that cyberspace does not exist yet and if we need to define the space where we live in today and also we have seen in the SF films in similar concepts; techno-space would be

a more convenient term. In addition, the idea of techno-space comes from the technological environment that we experience today since we have been exposed by technology and machines in the every area of our lives; from home to the street, from sky to the underground. Furthermore, for techno-space, I have discusses how techno-space has been vertically constructed and how it has been concentrated in the cities, also claiming the every corner of this vertical and concentrated space has been exposed by various technology and machines. As a final, in the last part of the Chapter Three, I have mention the screen as the most common technology which occupies every area of techno-space considering the screens are on the walls, on the buildings, inside of the bus or train, in front of techno-human at home, at work and in the space. In this regard, I have also discussed the screen figure in the space of SF films for the reason that, the space and the cities in many SF films have been decorated with the screens as we experience in the real life.

4.2 Fruition and Expedition of Techno-human as a Hybrid Notion

All things considered, in the chapters of the thesis I have mentioned that techno-human is a hybrid notion in terms of its body, identity space and technology relation for the reason that it is the combined concept of two parallel realities as the reality of the screen and the reality of the actual life. It means that, today, anybody might have the body which is similar with the body of *Robocop*, or we talk with our cars like in SF films; *Demolition Man* and *Knight Rider*, or our houses are decorated with the intelligent machines which can recognize us and work with a voice of the body such in the movie; *Minority Report*. We have our digital profiles on the Internet, in the virtual system in nowhere and we control them, sometimes becoming someone else such as in *the Matrix* or *Avatar*. These are the very basic examples from the previous chapters and there are more of them which strongly claim techno-human of today is having the technological experience of what he/she has seen on the screen during the 20th Century. For this reason, obviously, the interaction between human and technology have been always there growing and getting strong, and at this point, the role of SF cinema becomes to proclaim how technology and human are interacted showing the possible results of this interaction. In this regard, when SF cinema brings the new perspectives of the relationship of human and technology (machines), in the actual world, this relationship accrues imitating technology and human interaction. Besides, according to the thesis, SF cinema and post-industrial society has become the mirror of each other creating the new version of the human. In both areas, it has

become impossible to picture human without technology, and these two concepts, human and technology, has been strongly connected making necessary to find new definition and context of human. Therefore, as human has still humanistic features which come from the nature; the connection between human and technology, and the change of human by this connection cannot be declined. In the thesis, I have situated this connection and the changed human between SF cinema and post-industrial society for the reason that there are significant similarities between these two areas. Thus, the study of the thesis attributes to the idea which claims the story of SF cinema has become the reality of actual life and the alteration of human form the story to the reality is defined with the notion of techno-human. The elements that we have seen on the screen; cyborgs, prosthetics, computers, artificial organs, networks, vehicles, transportation, automated homes, information and communication technologies, the technosized design of the space and the environment have become the elements of our daily life similarly.

Additionally, the reason of my insistence to use the notion of techno-human is that we are not a completely machine yet, therefore, in my opinion, the term has described the situation of today's human better including the human word and also signifying the effect of technology (machines) on human body, identity and the space. In SF films and actual life, the human becomes the first object to represent and for this reason all technologies I have mentioned are produced and used for human being. From prosthetics to the mobile phones, all these technologies make human life easier, improve and fix the body, bring the information and communication. Similarly, in SF cinema, the human body is used as the represented realm to proclaim the future possibilities of the technology and human relationship asking a question which is that is this relationship good or bad? Generally, considering the dystopian SF films, their proclamation is that the machine and human interaction will grow negatively and they use the cyborgs as the villain and hero characters if there is a so-called war between human and machines. However, not like many other proclamations of SF films, the human vs. situation prediction of the films does not happen yet. In this regard, as there are not any distinctive proof that the technology is good or bad for people, the term techno-human also covers the both effects of technology. As techno-human keeps the human parts physically or identically, he/she also is exposed by the technology using its advantages and disadvantages. In this case, techno-human might be someone who has prosthesis, or someone who sits in front of computer without doing anything, or someone who uses a technological weapon, or someone who walks around the city with his/her Bluetooth earphone. Therefore, including the words *techno* and

human, techno-human becomes the hybrid, as it does not matter where he/she comes from, or where he/she lives in; maybe in the world of ours or in the world of science-fiction.

All things considered, I believe that techno-human as a notion has reflected its theoretical meaning well. As the relationship of technology and human has been discussed only in the actual world and in cinema separately, it has become useful to find a common concept which we can use when we need to define the new human between fiction and non-fiction. Furthermore, using this term, the thesis has proved that the estimations of SF cinema are important and might become real as it has happen on techno-human. Moreover, I have formed my visual and written selection in the light of all period since the beginning of the 1980s for the reason that, as I do not want to ignore the last three decades which very serious films and written studies about the human and technology interaction are produced. This is because; I did not want to go too deep in the past to sever my subject's connection with today. For this reason, it is also possible to say that the notion techno-human and this thesis is the summary of what human has experienced since the 1980s in the growing world of technology.

4.3 The Endless Adventure

Obviously, technology is an endless adventure and the human is the main character of this adventure. Every day, I read news about latest inventions of technology and I try to imagine possibilities how the future might be but, it is difficult to say something distinctive about the future. However, for sure, as techno-human has been there for the last three decades, he/she will be there in the future; maybe in a better condition or maybe in a worse condition. Fortunately, also SF cinema will be there continuing to produce its estimation about the future without ignoring the human and technology affection, in addition scholars will continue to study SF cinema the wide area and following the rapidly growing technology, there will be more studies about humanities and technology studies including informatics, media, communication and such. As each of us is a techno-human, we will experience every common development with our body, identity and our space. Nobody knows that where and when this adventure will end for the reason that sometimes technology and machines make us feel that there is a solution for everything and this situation reminds me my grandmother words. As a person who lived many technological developments since she was born in the 1920s, my grandmother says "everything has a solution but death", every time when she sees new technological device at our house from television to computer, from dishwasher to the Internet. Maybe she cannot see if there will be a solution for the death but after all her experiences

during almost a century, she has become one of techno-humans with her dental prosthesis, contact lenses, platinum knee cap, mobile phone and remote control which she never gives to anyone.

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- 2081 (Chandler Tuttle, 2009)
- Artificial Intelligence (Steven Spielberg, 2001)
- Avatar (James Cameron, 2009)
- Back to the Future I, II, III (Robert Zimcekis, 1985, 1989, 1990)
- Blade Runner (Ridley Scott, 1982)
- Brainstorm (Douglas Trumbull, 1983)
- Brazil (Terry Gilliam, 1985)
- Colossus: The Forbin Project (Joseph Sargent, 1970)
- Crash (David Cronenberg, 1996)
- Demolition Man (Marco Brambilla, 1993)
- Equilibrium (Kurt Wimmer, 2002)
- ExistenZ (David Cronenberg, 1999)
- Eyeborgs (Richard Clabaugh, 2009)
- The Fifth Element (Luc Besson, 1997)
- Gamer (Mark Neveldine, & Brian Taylor, 2009)
- Gattaca (Andrew Niccol, 1997)
- Ghost in the Shell (Mamoru Oshii, 1995)
- I, Robot (Alex Proyas, 2004)
- The Jetsons (Chuck Couch & Evelyn Gabai, 1962-1988)
- Johnny Mnemonic (Robert Longo, 1995)
- Judge Dredd (Danny Cannon, 1995)
- Knight Rider (Glen A. Larson, 1982-1986)
- The Matrix (Andy & Lana Wachowski, 1999),
- Metropolis (Fritz Lang, 1927)
- Metropia (Tarik Saleh, 2009)
- Minority Report (Steven Spielberg, 2002)
- Repo Men (Miguel Sapochnik, 2010)
- Robocop (Paul Verhoeven, 1987)
- Screamers (Christian Duguay, 1995)
- S1m0ne (Andrew Niccol, 2002)

- Sleep Dealer (Alex Rivera, 2008)
- Surrogates (Jonathan Mostow, 2009)
- Terminator 1 & 2 (James Cameron, 1984 & 1991)
- Terminator 3 (Jonathan Mostow, 2003)
- THX 1138 (George Lucas, 1971)
- TRON (Steven Lisberger, 1982)
- Vanilla Sky (Cameron Crowe, 2001)
- Videodrome (David Cronenberg, 1983)
- WALL-E (Andrew Stanton, 2008)