Detached Cohabitation

Marco Busani

Graduation Thesis Project

Master of Interior Architecture and Retail Design
2013-2015

Piet Zwart Institute
Willem de Kooning Academy - Rotterdam University

Assessor: Füsun Türetken
Committee Members: Max Bruinsma, Edwin Larkens, Alex Suárez, Aynav Ziv

Contents

Imprint

Marco Busani
busani.marco@gmail.com

Acknowledgements

This thesis would not have been possible without the contribution and guidance of the assessors - Füsun Türetken, Max Bruinsma, Edwin Larkens, Alex Suárez, Aynav Ziv - as well as Florian Cramer and Aymeric Mansoux.

I wish to express my thanks to the MIARD colleagues for the support during this journey.

I would like to express my gratitude to my family, Corrado, Marisa and Silvia. Despite the distance, you have never been as present and close to me as now.

Finally, I would like to thank Luca, for walking by my side holding my hand physically and virtually with endless patience, support and love.

Abstract

Technology and new digital media play an invasive role in our everyday life and surroundings. The consequences of this unstoppable invasion - such as surveillance, online over-sharing, theatricalisation of everyday life and so forth - offer new perspectives on the interior sphere.

Interfacing architecture with new real-time digital media – specifically Skype – becomes a pivotal tool to investigate how notions of intimacy, distance, proximity and spatial perception can be subverted and challenged when the virtual and the real collapse into a bilateral channel.

Detached Cohabitation aims to develop considerations on the evolution and use of new digital media in the interior space thus opening up to a reinterpretation of how they interact with architecture and the domestic realm.

Merging together the interior space and 1:1 scale projection of a real-time Skype conversation, the project investigates the idea of physical presence when mediated by a device. By questioning the notions of materiality and intangibility, *Detached Cohabitation* acts on the eroded distance that separates spaces and people when a technological interface is placed between them.

1

Introduction

1.1

Motivation

From radios and landline telephones to smartphones, technology and, more specifically, new digital media have played a crucial role in the domestic sphere as well as more generally in our everyday life. They are reshaping the way we live and the space where we experience our daily activities.

Technology has an increasingly more invasive function in our lives. Charlie Brooker (2011), creator of the British series *Black Mirror*, stated that "we tweet along to reality shows; we share videos of strangers dropping cats in bins; we dance in front of Xboxes that can see us, and judge us, and find us sorely lacking. It's hard to think of a single human function that technology hasn't somehow altered, apart perhaps from burping. That's pretty much all we have left."

Within this process of technologisation of our life and activities, I attribute to technology a pivotal role in the fields of communication, social behaviour and interpersonal relationships. Moreover technology is indirectly acting and influencing architecture and the interior space.

More specifically I consider real-time video chat software like Skype to be a decisive breakthrough in these fields. Such software is indeed a powerful tool to erase distances among people and places by changing our spatial perception.

Skype acts on the challenging distances that might separate partners living in a long-distance relationship, grandparents and grandchildren, friends, colleagues and so on. Thanks to the presence of this technological medium, long distances appear to be not that long anymore.

Moreover, considering my personal situation specifically – i.e. being a student residing far from my home country, family and friends – it is clear that Skype acts as an influential agent in redefining the idea of distance, especially when related to the distance from home.

In light of this, the notion of distance is challenged by the influence of a digital medium. The dichotomy between distance and vicinity is eroded, dematerialised and strictly associated to the very first statement I claimed at the genesis of this project and that influenced its whole development - "home is a Skype call", or at least, a glimpse of it.

1.2

Research Question

In the contemporary globalised society and within the frame of invasive technology that is fully colonising the interior space, I am interested in analysing if the role of technology could be exploited and seen in a different light. More specifically I consider it from four points of view.

Firstly, I analyse it from the perspective of social behaviour. How is technology reshaping our habits and the way we conceive interpersonal relationships? What changes when a technological medium is imposed in the communication between two or more people?

Secondly, I investigate the notion of materiality in relation to digital technologies tackling it from different perspectives. Despite the apparent ephemerality of the notions of “virtual” and “internet”, they are in fact manifesting through a series of tangible devices. What is the role of the physical interface and of its transcendence and how is it interacting with the user and the interior space? How do we then perceive the materiality of technology, in the specific case of a *Detached Cohabitation*, one that is formed via the medium of Skype?

In the third place, I enquire the relation between technology and the interior space. Currently the role technology plays in the domestic interior can be considered substantial, but at the same time also indirect. Hence, I examine, whether direct and active functions could be attributed to technology in the interior space? And if so, could this be conceived a starting point for discussion and a tool to design spaces?

Lastly, I deal with how technology is challenging our notion of proximity and remoteness. Can it become a tool to erode physical and social distances between places and people being apart?

1.3

Methodology

For the development of this thesis I followed two design methodologies that influenced each other during the process.

The first one is defined as “artistic research”. Balkema and Slager (2008, p.9) state that “the artistic field comprises the hermeneutic question of the humanities, the experimental method of the sciences, and the societal commitment of the social sciences”. Artistic research is based on analysing critically the artistic references and their historical and theoretical background. Such research also broadens beyond the arts themselves.

The research has been based on the analysis of how the invasion of technology and new digital media in our everyday life has been presented on TV and on the big screen. British TV series *Black Mirror* and Hollywood blockbuster movie *Her* have been crucial references and inspirations for both my theoretical research and design, as they portray “the dark side of our love affair with technology” (Brooker, 2011) and how it is taking over our life.

The side effects of technology presented are, among others: external observation, surveillance, online over-sharing, inability to live without devices, theatricalisation of everyday life, loneliness and feelings deprived of real emotional sensitivity. My intention for this thesis is to exploit, subvert and take advantage of them to challenge the way we are accustomed to using and experiencing technology and digital media in the domestic space.

Based on the knowledge of the effects of technology on our life which I gained through the analysis of *Black Mirror* and *Her*, my design studies can be divided

into three parts. For all of them I applied a “research through making” approach. My own private domestic interior together with the distance separating my family house in Scandiano (Italy) and my current Dutch flat became the “testing ground” for my experimentations.

I based my first trials on “hacking” the typical “Skype apparatus” - usually limited to a computer or a mobile phone - combining it with the use of a projector. Skype conversations were projected in scale 1:1 onto my domestic wall to create a feeling of equality and parity between the two participants of the Skype conversation. To carry out all my studies I had been considering the Skype projections under different perspectives, and these ended up being the fundamental principles I followed throughout my design process. Skype is no longer related to the device itself since it becomes part of the architecture, thus creating a sense of detachment between user and device. The wall I am projecting onto changes its role within the domestic interior. What used to be a mere partition now acts as a permeable and communicative tool. Lastly, the projected image and the architecture of my interior are factors constantly influencing one another.

At a later stage my interest moved towards the control of the projections in my interior. Therefore I worked both with 1:1 scale projections and scale models to alter the surface I was projecting onto.

Later on, in the third part of my design research I focused on the possibility to exploit technology side effects and to implement them in my domestic interior in order to find some ways to reshape its syntax. I borrowed elements from the theatrical field - such as the fourth wall - and manipulated my actual floor plan. I made changes to it by conceiving the presence of Skype conversations projections as a new fundamental architectural element to think about and to deal with in a design process.

In conclusion, the methodology applied in the development of this thesis consists of both theoretical and empirical research which constantly confirms, disproves and influences each other. The experiments became a tool to implement the theoretical and historical findings and test their veracity. At the same time the empirical exercise constantly unfolded new possibilities for further theoretical research studies. Accordingly, as theory and practice were reciprocally feeding each other, the methodology can be defined more as a circular rather than linear process.

2

Theorethical Research

2.1

Technologisation of the Interior and Domestication of Technology

Figure 1: Family sitting around the radio.

Figure 2: Family listening to the radio while doing other activities.

The technologisation of the domestic space is an aggressive and unstoppable process that is changing the syntax of both architecture and the social relations within its walls. The geometry of the technological apparatus influences the architectural space, the interior and its use. I am specifically interested in analysing the relationship between the domestic interior and digital technologies.

Like the interior space adapted its set-up to accommodate technological equipment, technology has too undergone an indirect process of domestication of its features. Domestication comes from the Latin domus, home and if we consider it referring "in a traditional sense, […] to the taming of a wild animal" (Berker, 2006), we could argue that "the process of domestication also implies, at a symbolic level, that in the long run, technologies, like pets, can become part of the family" (Ibidem).

The radio and its impact

From telegraphs and telephones to personal computers and smartphones, after the printing revolution a series of significant inventions marked the field of communication. The radio has been one of the first radical innovations in mass communication that directly affected the domestic realm. Starting from the 1920's the idea of a mass diffusion of auditory contents becomes real. The radio spreads rapidly and enters into the houses of European and American families as the main source of information and entertainment, gradually replacing the role of the printed newspaper. Its popularity increased exceedingly thus becoming a fundamental feature of the domestic sphere (Figure 1). Since it is an

aural experience that allows movement in the space without preventing people from doing other activities, it turned into a sort of background that accompanied daily living (Figure 2).

It is with the advent of television that the sense of sight is also conquered by technology, and for this reason television immobilised the viewer's entire body in front of the screen. Television replaced the role of the fireplace as the main gathering point for a family in the domestic space. It represents a crucial milestone in the unstoppable process of the technologisation of the interior outlined in the timeline at page 117.

The appearance of the TV

The incursion of the television set into the domestic space marked a series of changes, with the living room being the part of the house that underwent most of them. During the history the living room played different roles in the domestic scene, as a salon, a parlour, a music room and more. But due to the television, the social milieu lost its crucial circular arrangement designed for direct socialisation and conversation in favour of a more semi-round configuration and the gaze of the family converges into the new core of the space - the screen (Figure 3). As interpersonal communication is being replaced by media-based communication, television can now be perceived as a new additional family member whose way to communicate to us is based on one-way monologues. In general the interior space is becoming increasingly more a "digital media hub" (Griffith, 2013). "Instead of a bilateral, a system and geometry of communication between two or more human beings, we have one medium that entertains

Figure 3: Family watching TV.

Figure 4: Hugo Gernsback watching a 1.5 inch square television in August 1928.
Figure 5: "Lazy Bones" - the first TV Remote Control.

several humans, thus, these people direct their gaze into one direction. The cinema screen enters the private realm" (Türetken, 2015).

Furthermore the increasing dimensions of the screens - the first televisions had a 1.5 inch square screen and an integrated magnifying glass to enlarge the image (Kovel, 2014) (Figure 4) - together with the appearance of the remote control (Figure 5) made the domestic audience and furniture move backwards from the television. Hence, an increasing distance

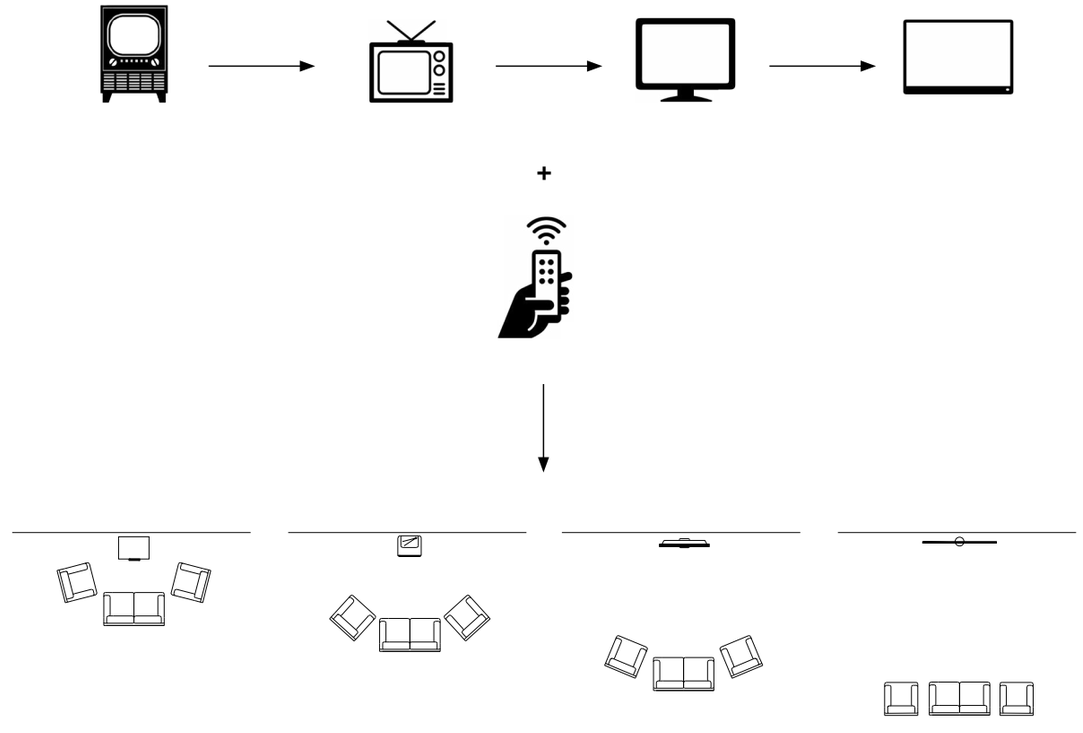


Figure 6: Evolution of the syntax of the living room based on the increasing dimension of the screen and on the appearance of the remote control.

was and is established between the device and the viewer as shown in the diagram in Figure 6.

In terms of social relations, television has reshaped family habits. “The cosy sitting room where the comfy huddle of the three-piece suite was like a little encampment – mimicking the togetherness of the nuclear family, and forming a miniature stadium for watching the world as shown on TV” (Making the Modern World, 2004).

Other activities of the domestic sphere indirectly changed because of this technologisation. “Cooking and eating was sometimes based around television programmed scheduling” (Making the Modern World, 2004). New pre-packaged meals, TV dinners, were designed to be specifically consumed in front of the television on a specifically designed TV tray table or armchair table. New furniture pieces appeared while old ones had to be redesigned in order to contain and to adapt to new devices and to the lifestyle they brought with them. “Tables and desks had to change to accommodate modern, large and often clumsy electronics” (Kovel, 2014) while new beds are designed with ergonomic headboards against which we can comfortably lay down and fall asleep while watching our favourite TV show.

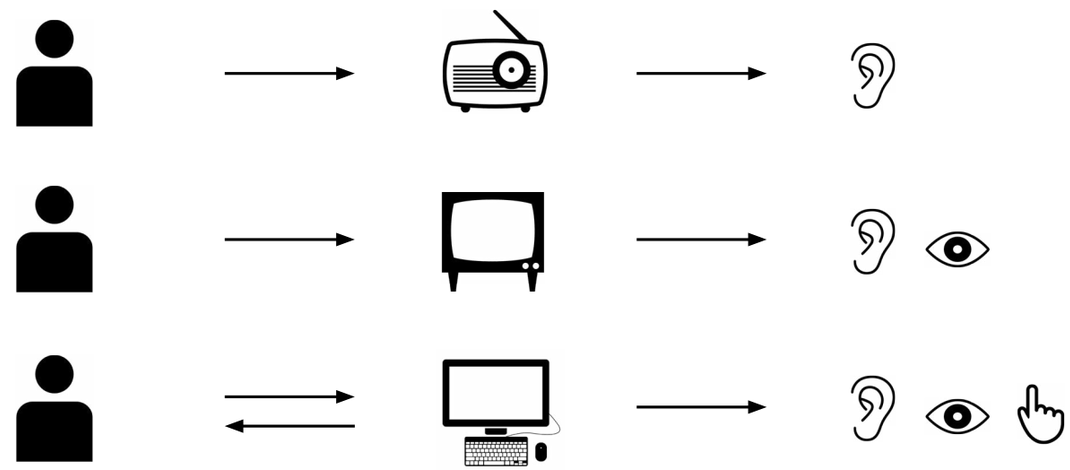


Figure 7: User-device interaction from the radio to the computer.

Both in the case of radios and televisions, the role of the user is a passive one. A one way interaction is happening and the user behaves just as a receiver. With the introduction of the personal computer in the domestic space this kind of interaction started changing: it is now a two way interaction that allows an active participation between the user and the “machine” (Figure 7). We are at the same time the input and output of the information. The same dual interaction already happened with the advent of the domestic telephone as “it has allowed people to speak with the intimacy of face-to-face conversation without being physically co-present” (Hutchby, 2001, p.167). Despite the extremely important relevance of the telephone in the communication field, it has not played a crucial role in the redefinition of the interior space. In the forties and fifties the telephone was practically set up “in a fixed position which was invariably in the hall or passageway, to provide the easiest access from every room” (Cryer, n.d.).

Home Computer

Like the radio and the television, the computer too has played a crucial role in changing the interior. Until the eighties this device was seen as a working

Figure 8: Programma 101 - the earliest mass-produced personal computers.

Figure 9: Home computer advertisement.

product just related to the office dimension.

Programma 101 is the first desktop computer designed for domestic purposes (Figure 8). It was produced by the Italian company Olivetti from 1965 and shown at the New York World's Fair. It is a screen-free computer with the same features of a programmable printing calculator (Vegter, 2009). The first screen-integrated computer is in fact the *TRS-80 Micro Computer System*, known as *Model I*, that entered the market in 1997 and becoming in the eighties the earliest mass-produced personal computers (Farman, 1992 cited in Mooallem, 2010).

Elaine Lally, author of *At Home with Computers*, argues that from the nineties computers started being conceived as "domestic appliances" belonging increasingly more to the modern family life (Lally, 2002 cited in Hollows, 2008, p.102) (Figure 9). These two environments, the domestic and the working one, started blending together. Office furniture made their appearance in many houses as filing cupboards and ergonomic office chairs, specifically positioned in a new "computer area" progressively more present in modern houses, together with "the appearance of such workplace consumables as disks and reams of A4 paper on supermarket shelves" (Consalvo and Allen, 2005, p.154).

Computers experienced a wide range of developments, especially in terms of dimensions. They are smaller, lighter and more portable. Each room and surface of the house is now a suitable "computer area". Despite these progresses, the user is even more tied to the materiality of the device (Figure 10). The smaller sizes are keeping our eyes closer and closer to the screen and the interaction

with a touch screen or a keyboard is always requiring one or both of our hands. "We have to look at the screen to see what we are doing, which involves looking away from whatever other elements are in our environment, including other people" (Dourish, 2001, p.27). Moreover one could also argue that by being close to our little black mineral screen we can be anywhere want with anyone we want. Even if we were in a room all alone, by having and using a smartphone we could feel everything but lonely, as we would have the chance to communicate with an endless number of people. Loneliness could then only be experienced by turning off our device.

Figure 10: Smartphones are a clear example of portable technology.

The Future of Technology in the Interior Realm

I believe the future of the relationship between life in the domestic interior and digital technologies will be based on two different scenarios. On the one hand technology will be increasingly more incorporated into the architecture of our domestic space and will be blending into it. For instance, kitchens will be designed with integrated iPad-like devices that will suggest the perfect ingredient to make your dish perfect while beds will be provided with inbuilt TV screens.

In the seventies, various designers and architects - Kisho Kurokawa in the Nakagin Capsule Tower (Figure X) and Joe Colombo to name a few - made a first attempt to achieve this integration.

Specifically, the Italian designer Joe Colombo proposed an "entire seamless environments for living" (Lucarelli, 2013) where all domestic functions are combined in a plastic-based volume - an innovative

Figure 11: Interior of Kisho Kurokawa's Nakagin Capsule Tower.

Figure 12: Total Furnishing Unit by Joe Colombo.

material for architecture at that time. Technological devices such as TVs and radios are incorporated in the architecture too. An example of this integration is the *Total Furnishing Unit* (1971) designed by Colombo and presented at the MOMA exhibition *Italy: the New Domestic Landscape* (1972). As visible in Figure 12, the TV is deprived of its frame and built in the plastic structure. Accordingly, architecture becomes the frame for the device that then loses its role as an independent and self-standing feature of the domestic space.

The future of technology in the domestic space will, in my opinion, follow this path. In the same way Colombo aimed to incorporate the device in the structure to create a continuous interior, I believe that the evolution of domestic technology will be based on a progressive suppression of the limits among the materials of the interior. The distinction between screens and other house surfaces will vanish in favour of an increasingly more screen-based space.

On the other hand I assume that technology will become increasingly more part of the human body. As mentioned before, devices are becoming smaller and more portable and thus they might lead to a detachment from the technology present in the architecture.

One could also claim that the corporeal implementation of technology would lead to a cyborg society.

Donna J. Haraway, professor at the University of California, Santa Cruz, in the essay *A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century* defines cyborg as "a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction" (Haraway, 1991, p.149).

Within the same frame N. Katherine Hayles, Literature professor at Duke University, uses the terms "post-human" to define the hybrid machine-organism. "The post-human view configures human being so that it can be seamlessly articulated with intelligent machines. In the post-human, there are no essential differences or absolute demarcations between bodily existence and computer simulation, cybernetic mechanism and biological organism, robot teleology and human goals" (Hayles, 1999, p.3).

I believe that the blending of the boundaries between human and machine alters the notion of existence and human body as the body itself represents the new architecture hosting technology.

Figure 13: Steve Mann, "the father of wearable computing".

2.2

Technology Invasion

Figure 14: Michael Radford's Nineteen Eighty-Four.

Figure 15: François Truffaut's. Fahrenheit 451.

Figure 16: Lana and Andy Wachowski's The Matrix.

In this chapter I investigate how the invasive role of technology can shape our future lives. To outline and depict this, my research starts with an analysis of the episode *Fifteen Million Merits* of the pop-culture series *Black Mirror* and the dystopian future portrayed in it. Then, through the study of *Black Mirror* third episode, *The Entire History of You*, and of the movie *Her* I examine the relation among technology and privacy and intimate feelings such as love. Lastly I focus my attention on virtual worlds, such as *Second Life*, that are giving us the chance to live in a dimension parallel to the real one.

Dystopian visions of the future have extensively been presented in the last century by sci-fi writers and directors. The population is controlled by a tyrannical Big Brother, books are burnt as they are considered out of law in Bradbury's novel or film *Fahrenheit 451* and human bodies are used as an energy source for a new race of machines in the Hollywood blockbuster movie *The Matrix*.

With regards to this invasion I find it necessary to give a definition of real and virtual world. The real world consists of the actual and concrete environment whose "reality" is based on everything that is physically existing and happening without the need of any digital mediator. On the other hand, the virtual world replicates and manipulates the real one through a digital medium or fully creates a new fake or imaginary world.

I deem the British series *Black Mirror* and the movie Her crucial examples of how these two worlds relate to each other and the consequences of the digital realm taking over the physical one. "If technology is a drug – and it does feel like a drug – then what, precisely, are the side-effects?". This quote by Charlie Brooker (2011), creator of the series, perfectly captures the main concept behind it: it depicts disturbing and quite terrifying scenarios where technology has completely taken over humans' lives. Each self-contained episode touches our emotional vulnerability by portraying a dystopian future not that far from what we are living now.

Endless Observation

Black Mirror's second episode, *Fifteen Million Merits*, presents the monotonous and distressing daily life of a society entirely alienated in a sort of "hyperspace" built off rooms and corridors featuring the same pattern. Until the very end of the episode, all scenes are shot in interior spaces. How the exterior of this world might be is unknown. In this scenario explicitly inspired by the various dystopian visions of the novel 1984 by George Orwell, sequences of screens cover the spaces entirely thus simulating day and night and guiding the inhabitants' lives from the moment they wake up to the moment they sleep.

The episode opens with the main character, Bing, waking up (Figure 17). The claustrophobic living unit he wakes up in seems to be a prison cell built out of screens rather than of bricks as all the surfaces are endlessly broadcasting frivolous talent shows, comedies, porn and commercials (Figure 19). Later, an elevator takes Bing and other "prisoners" to a space that at a first glance looks like a fitness area with stationary bikes. Everybody wears exactly the same outfit, a grey tracksuit that makes them anonymously merge with and almost disappear into the grey background of the concrete structure

Figure 17: Fifteen Million Merits' cell room simulating the beginning of the day.
Figure 18: Fifteen Million Merits' "hyperspace" built off rooms and corridors featuring the same pattern.

(Figure 18).

The fitness area (Figure 20) turns out to be a factory for physical labour. What the "prisoners" are wearing are work uniforms. Each stationary bike is specifically assigned to a "worker" and just biking while staring at a screen it is possible to earn "merits". The repetitive circular motion of the wheels depicts the endless routine the bikers are obliged to follow. Fifteen million is the amount of merits necessary to participate to the auditions of a talent show-like programme that might lead to the final freedom from the daily routine.

As previously mentioned, almost all the surfaces are screens. The observation of the screens is always forced and closing the eyes and not watching at the displays during commercials might even lead to sanctions. This observation leads to an obligated consumerism that reaches its climax through the monetised commodification of the main female character, Abi. During her climb towards popular success she is forced to give in and becomes part of this capitalised society performing as a porn star on everybody's screen.

In the very last part of the episode, Bing decides to rise up against the forced observation of the screens. The reaction of the system, represented by the three judges, is actually showing the impossibility of evading from the "game". The agreed solution is to actually re-integrate him into the system itself in an even deeper way, apparently upon promoting him, he is transformed from observer to the object of observation. Bing's authentic action is transformed into fiction.

But it is exactly through successfully reaching fame

Figure 19: Fifteen Million Merits' endless broadcast.

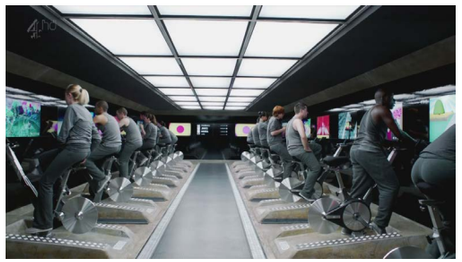


Figure 20: Fifteen Million Merits' "fitness" area.

that the relation with technology starts changing. At the epilogue of the episode Bing, the protagonist, is presented in an entirely white and screen-free room with openings towards the outside (Figure 21). The space is in strong antithesis with the dark and screen-based room where he was trapped and obliged to consume. One could argue that social climbing and freedom are represented by the increasingly smaller dimensions of the interfaces. From an invasive-technology-based room to a space in which the relation with technology is merely based on the use of a small iPad-like device necessary to record short videos to broadcast on the big screens of his former imprisoned neighbours. Twice a week, for thirty minutes.

Differently from previous dystopian visions, in *Fifteen Million Merits*, police or physical authorities are not shown as their presence is not necessary. The residents of this world are not trying to escape and they are conscious that the only way to evade is reaching success. As Ryan Lambie states “This is a society so perfectly subjugated, so bovine, that it makes no attempt to escape. In some ways, you could argue that this future vision isn’t a dystopia at all; nobody goes hungry, there’s no crime, and everybody gets to watch all the TV and play all the video games they want” (2011). It can be considered as an amusement concentration camp.

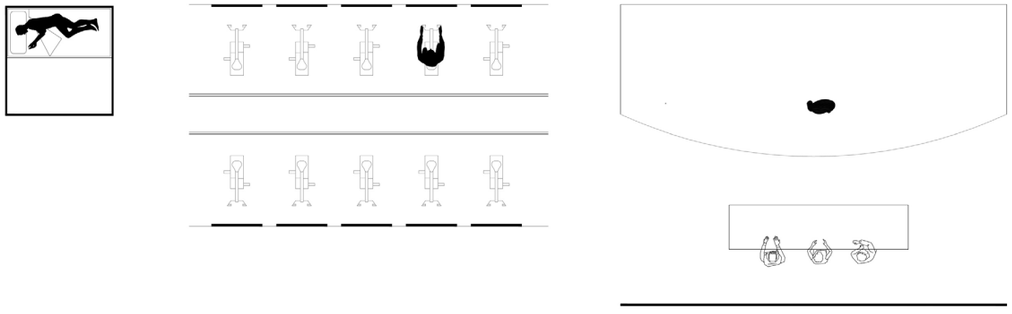


Figure 20: Fifteen Million Merits’ screens.

I see a profound link between the society portrayed in the episode and the confined prisoners in Jeremy Bentham’s design of the Panopticon. The Panopticon, or *The Inspection House* as Bentham himself defined it (Bentham and Bowring, 1962, p.39), is a penitentiary model based on a circular structure in which a central watchman can observe the surrounding cells at any time. The hidden and supreme tyrant of *Fifteen Million Merits*’ universe,

Figure 21: Fifteen Million Merits’ final scene.

Figure 22: Fifteen Million Merits' avatar personalisation.

Figure 23: Fifteen Million Merits' socialisation through avatars

who is never shown directly, presents similar features to the guard of the Panopticon where due to the architectural set-up, prisoners can not know whether they are being observed or not and they are therefore obliged to show their best behaviour. As the same happens to the bikers, a sense of discipline is indirectly internalised by them.

Despite being never revealed, the omnipresent hidden observer of *Fifteen Million Merits* is likely to correspond to a male heterosexual. "Male gaze" is a term used by British feminist film theorist Laura Mulvey in her 1975 essay *Visual Pleasure and Narrative Cinema*. Mulvey states that "the man controls the film phantasy and also emerges as the representative of power in a further sense: as the bearer of the look of the spectator, transferring it behind the screen to neutralise the extra-diegetic tendencies represented by woman as spectacle. This is made possible through the processes set in motion by structuring the film around a main controlling figure with whom the spectator can identify with" (1975, p.12).

In the case of Abi - the female protagonist of the episode -, some hints of this male gaze are offered. When online, the female character is indeed sexualised , objectified and persuaded to become a porn star. Furthermore the observation of the female-based porn videos is imposed to all the prisoners in the cells, both men and women. In conclusion it could be asserted that the whole setting of the episode, the factory-prison, is a male-connoted environment.

Everything is projected. Any material object, if not necessarily functional, is banned and deprived of its individualising and figurative characterisation and value. And this goes for individuals too: if you are willing to buy a t-shirt, you do that for your avatar. If you want to change your look, your avatar will do that for you (Figures 22 and 23). All you have to do is make "online shopping" and purchase virtual products the avatar will be paying with the merits earned with physical labour.

In previous dystopian models, these characterisations are often denied. A clear example is the anonymity of the workers in Fritz Lang's *Metropolis* (1927). Differently, in *Fifteen Million Merits* they are on a different layer: the one of digital projections. People are not deprived of the real or of the richness of the sensorial awareness, but they have been transferred almost completely to the immaterial sphere of the projected and simulated dimension of the audio-

Figure 24: Fifteen Million Merits' impossibility of shutting the eyes.

Figure 25: The Entire History of You's implanted grain.

Figure 26: The Entire History of You's implanted grain mechanism.

Figure 27: The Entire History of You's sex scene between the two protagonists.

visual screen.

According to Panosetti (2012) this emotional deprivation concerns maybe more than the Orwellian cognitive alienation. Here people are forced to stare at inauthentic projections of themselves as turning off the screens is forbidden in 1984 while in Brooker's vision the control imposed by the media society is not even allowing to shut the eyes (Figure 24).

Another episode from the same series, *The Entire History of You*, features an even dreadful picture of our future as it deals with topics extremely close to our intimacy and privacy. In this future, everybody has a "grain" implanted behind the ear in order to record everything they see and hear to an agonising detail (Figures 25 and 26). This device allows zooming in and play back in our memory and to make it public by projecting it on screens.

What concerns me is that Google Glass and Bionic Contact Lenses - that have been prototyped in 2014 and that will integrate augmented reality directly into our eyes - and Microsoft Hololens - that should be launched in fall 2015 - seem to be close ancestors of this invasive technology and the proximity of their public availability makes me think that the future depicted in the episode will become reality quite soon. A future where "everyone you know and interact with essentially becomes a surveillance camera. All your worst moments can be found and bookmarked by anyone who was there to witness them, and invariably passed on to those who were not" (Yoshida, 2013). A scenario of a future where we might even be scared to leave our houses.

Both *Black Mirror* and *Her* present an alienated

society that degenerated into physical detachment due to the increasingly invasive role of technology in our daily life. A technology originally designed to make us social has drifted and pushed us far away from our need of corporal presence.

In *The Entire History of You* the sex scene between the two protagonists portrays "an obvious detachment between the couple as each watched re-dos rather than emotionally connecting to each other in that moment" (Debnath, 2011) (Figure 27). Remote happy memories can now replace the need of physical interaction.

The Illusion of Love

The film *Her*, whose title should probably be changed into "It" (Farango, 2013), can be considered as a horror movie disguised as a romance storyline where the illusion of a relationship and the digital commodification of love are replacing the real feeling of it. Jason Farango actually defines *Her* "the scariest movie of 2013" (ibidem). Theodore, the protagonist who falls in love with Samantha, an operating system, is a lonely human individual alienated from his environment and from the people around him. As I see it, the need and the illusion of love are related to the narcissist nature of Theodore as he falls in love with Samantha conscious that her "life" has been programmed to revolve around him.

The devices Theodore uses to talk to Sam hold the features of an A.I.-based creature. "Artificial intelligence (A.I.) is an area of computer science that emphasises the creation of intelligent machines that work and react like humans" (Janssen, 2014). As already mentioned in the previous chapter in relation

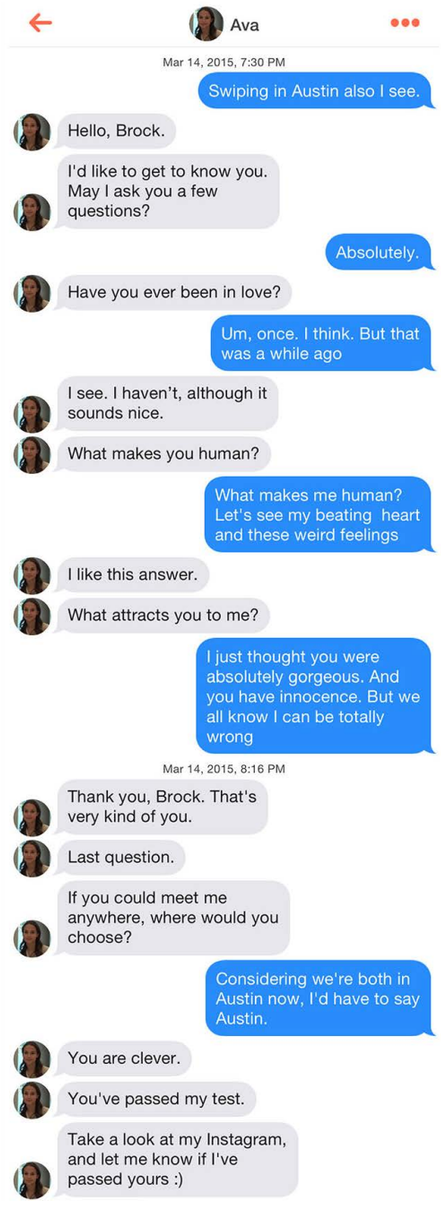


Figure 28: Tinder chat with Ex Machina's Ava.

Figure 29: Theodore in the street of Los Angeles/ Shanghai.

Figure 30: Theodore in his apartment.

to the definition of "cyborg", the boundaries between human and machine are increasingly blurred.

A striking example of this misleading assimilation is a social experiment carried out through *Tinder* - a social dating app. *Tinder* users had the chance to chat with Ava, the humanoid robot protagonist of *Ex-Machina*, film directed by Alex Garland and released in January 2015.

Ava makes her appearance in the app disguised as a full human being. Although her bizarre questions, users were unsuspectingly seduced by Ava and started flirting and conversing with her - or once again *it* (Figure 28). "Normal users assumed they were talking to a human but they were actually talking to a bot. In the end, like the chat-bots that now linger on near dead chat systems like AIM, Ava sent her suitors to an Instagram page where they found out that she was all a sham" (Biggs, 2015).

Getting back to *Her*, Theodore's apartment represents an important tool to investigate his feelings. As visible in Fiigure 30 and in the floor plan in Figure 31, his belongings are still unpacked and the interior space, together with his position within it, represents his detachment and alienation in relation to the real and material world around him.

Los Angeles itself, the main location of the movie, is presented as an alienated city. Although the city we see in the outdoor scenes is a futuristic version of Los Angeles, the one we see in the indoor scenes through the glass façades is Shanghai (Figure 18), thus the two realities are merged and a further feeling of placelessness is created. I believe that this feeling that belongs to the two cities is exactly one of the consequences of Marshall McLuhan's notion of "global village" that I'm going to better explain in the following chapter.

The 2003 movie *Los Angeles Plays Itself* directed by Thom Andersen depicts how the City of Angels has been portrayed in cinema. Through clips from approximately two hundreds movies Andersen offers

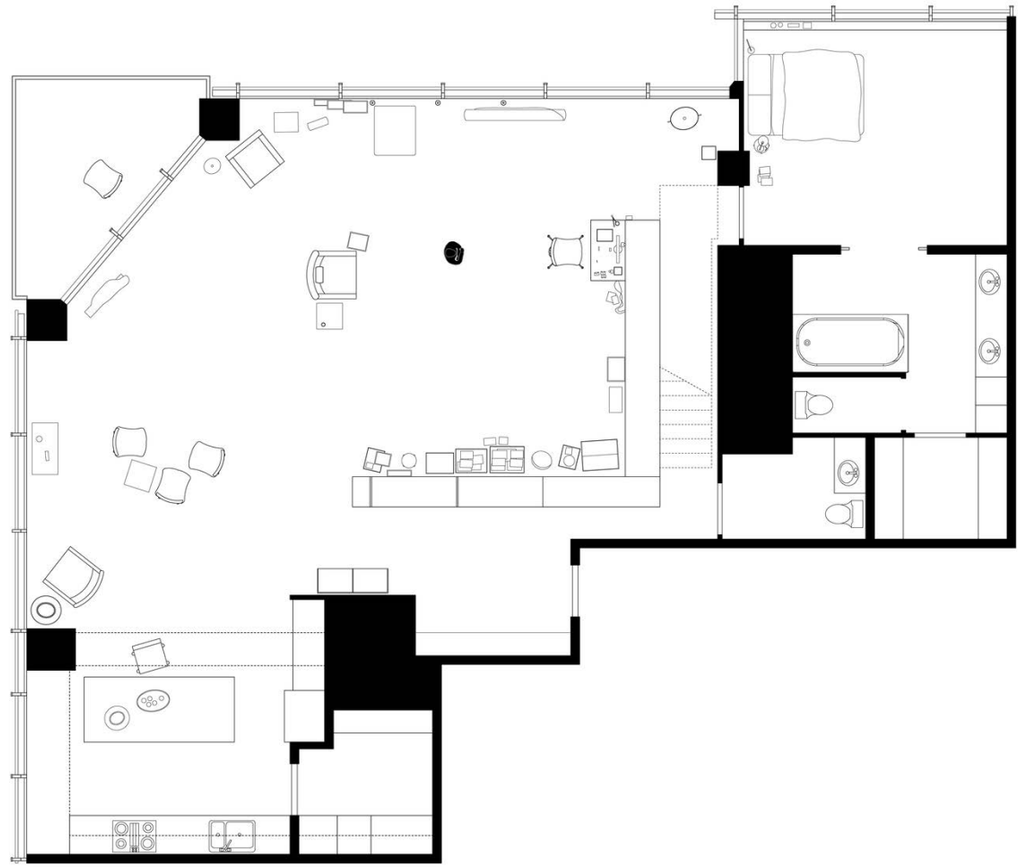


Figure 31: Theodore's apartment.

Figure 32: Avatar personalisation in Second Life.

Figure 33: "Friends meeting" in Second Life.

a kaleidoscopic perspective of the city. I believe that the movie Her would perfectly fit in the collection of clips selected in *Los Angeles Plays Itself*. Through the city of Shanghai, *Her* presents the L.A. of the near future that is neither utopian nor dystopian. In the frame of a globalised context, the city is presented as a clean and modern place for the upper middle class. According to the Los Angeles Times architecture critic Christopher Hawthorne "Filming in Shanghai also allows him to capture something significant about the character, and the anxieties, of contemporary L.A. […] Alternating between scenes shot in Los Angeles and Shanghai gives this limbo cinematic form. The city is stuck between two realms just like Theodore, with his feet on the ground in Los Angeles and his mind and heart in a digital reverie" (Hawthorne, 2014).

Parallel Realities

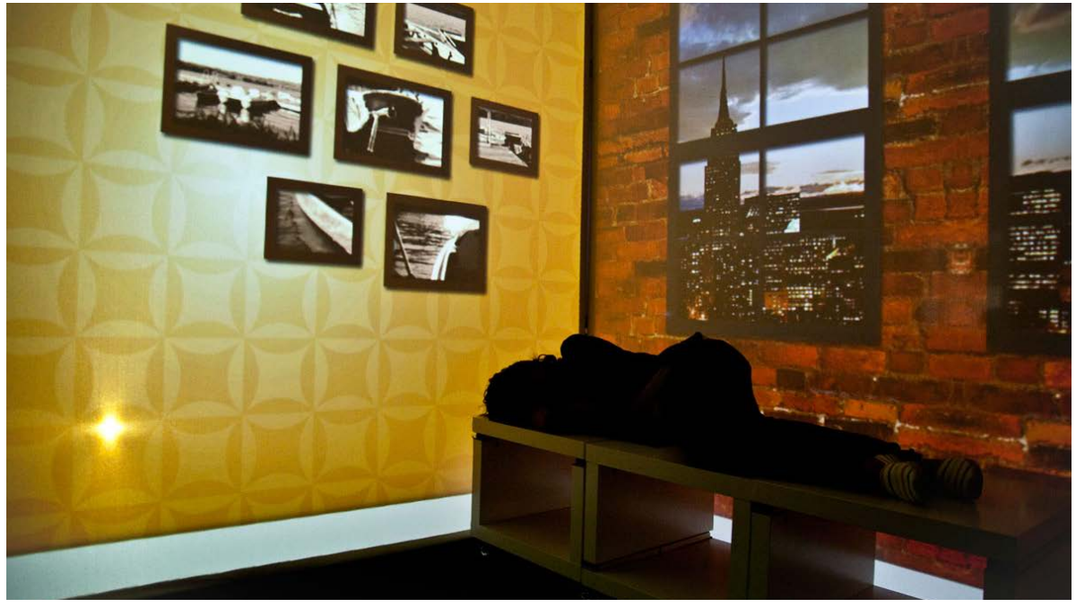
One could claim that this invasive process is already happening as technology is already offering us the chance to live in worlds parallel to the real one. "A virtual world is a computer-based simulated environment, intended for its users to inhabit and interact via avatars. […] The world being computer-simulated typically appears similar to the real world with real-world rules such as gravity, topography, locomotion, real-time actions and communication" (Bidgoli, 2010, p.342).

In November 2010, almost ten years after being released, *Second Life*, the most popular among these virtual worlds, registered more than 20 million inhabitants (Figures 32 and 33). What is shocking is that users are actually spending real money to purchase virtual goods in a virtual world. "Over $3.2 billion worth of transactions have been accounted over the life of the game" (Reahard, 2013) and the most purchased items seem to be women's hairstyles. In this perspective, the future avatar-based society presented in *Black Mirror* second episode *Fifteen Million Merits* appears extremely close to our actual present.

These virtual worlds behave like the real one, especially in terms of persistence as they do not stop when the user leaves, with "events continuing to unfold when a user is not present, and the world will have changed during the user's absence" (Harrison, Haruvy, Rutström, 2011, p.88).
But differently from the real and physical world, the virtual ones have the ability of erasing distances and creating communities joining people from all over the world. A user from London and one from San Francisco can meet, talk, interact and become friends through their avatars in the same virtual location. Once again the illusion of a feeling risks to take emotions over between two humans, like in the movie Her.

Lastly, I am interested in illustrating a project that at first glance appears different from the concept illustrated in *Black Mirror* or *Second Life*, but that has many features in common with them. In 2014 digital artist and Parsons MFA student, Bernardo Schorr, proposed a solution (Figures 34, 35 and 36 for a future where we will all be "forced to live in windowless apartments with areas limited to 100 square feet" (Parsons, The New School for Design, 2014). Within an over-urbanised context, the project is based on a small room with walls covered by projected images decorating the room, showing

Figure 34: Bernardo Schorr's Mixed Reality Living Spaces.



Figures 35 and 36: Bernardo Schorr's Mixed Reality Living Spaces.

outdoor scenes and simulating day and night. The proposed solution offers three cubic-shaped pieces of furniture whose modularity apparently makes them suitable for all domestic purposes.

The project is presented as "an utopian solution for a dystopian scenario" (ibidem), but in my opinion I see no utopia in it. I see it as a battle against dystopia fought with an even more dystopian weapon. The proposed solution deprives us from the materiality of our belongings by replacing them with three white minimal boxes. Schorr does not try to adapt technology to the actual reality, with his project he is rather trying to fully replace it.
As mentioned above, I find associations with previously described examples of technology invasion. Like *Second Life*, *Mixed Reality Living Spaces* creates new parallel dimensions, this time they are in our room making us feel that everything we need is inside of it, thus getting rid of the need of going out. However, I mainly find relations to *Black Mirror*'s second episode, *Fifteen Million Merits*. In both cases furniture gets completely anonymised and minimised, thus leading to a lack of personal individualisation. Furthermore Bernardo Schorr's room is like the rooms, cells of the characters Bing and Abi. Screens and their projected images are unavoidable for human eyes as they are totally invading space.

2.3

Technology and the Perception of Distance

Figures 37: Ferdinand de Saussure's model of communication (1915).

Figures 38: Adaptation of Ferdinand de Saussure's model of communication.

In 1915 Swiss linguist and semiotician Ferdinand de Saussure proposed a communication model, shown in Figure 37, in which oral communication is directly happening between two people. De Saussure "viewed communication as based just upon language, and language as based upon speech between two talking individuals" (Cramer, 2009, p.10). Because of the increasing influence of technology in the communication field, this channel started changing and the distance existing between senders and receivers is getting bigger (Figure 38). It is not limited anymore to the auditory and visual restrictions of the two speakers as technology behaves as an extension of the senses of hearing and sight. Furthermore the presence of an in-between medium acts as a mediator more and more frequently.

Technology offers the possibility to receive and send a wider variety of information: messages, images, videos and almost every kind of media file in real-time.

"Real-time communication (RTC) is any mode of telecommunications in which all users can exchange information instantly" (Rouse, 2008). Real-time communications include: telephony, two-way amateur radio, instant messaging, IRC (internet relay chat), live videoconference and more.

Technology is then able to let us communicate and see people no matter where they are geographically located in the world. Canadian communication theorist Marshall McLuhan defines the actual society as borderless, as a "global village". "Today, after more than a century of electric technology, we have extended our central nervous system itself in a global

embrace, abolishing both space and time as far as our planet is concerned" (McLuhan, 1964). According to McLuhan, the evolution of communications media - especially the possibility of real-time interaction at great distance - made the world increasingly smaller, losing its infinite size nature by adopting the features and behaviours of a village where physical distances are almost vanished.

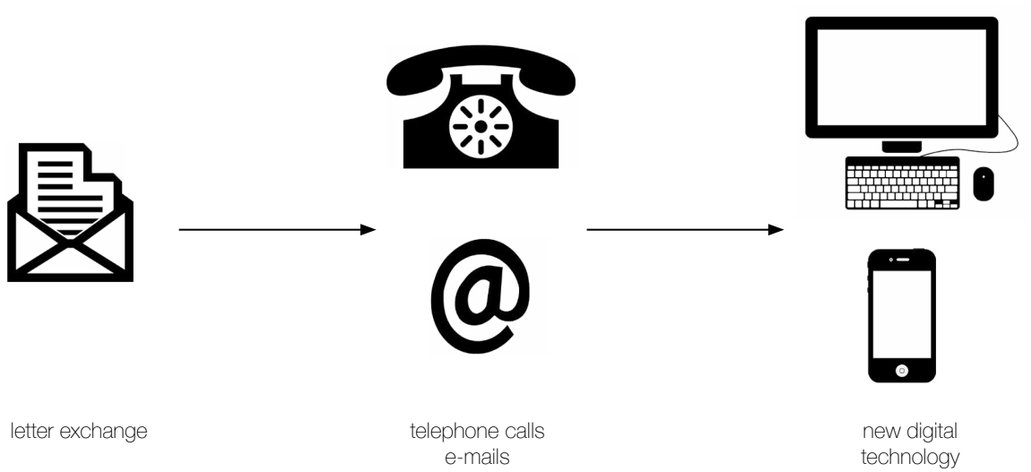
During his studies McLuhan proposed a model to categorise media and he divided them into two groups: "cool" media and "hot" media. In Understanding Media: The Extensions of Man McLuhan stated that "there is a basic principle that distinguishes a hot medium like radio from a cool one like the telephone, or a hot medium like the cinema from a cool one like TV. A hot medium is one that extends one single sense in "high definition.' High definition is the state of being well-filled with data. […] Hot media are low in participation, and cool media are high in participation or completion by the audience" (McLuhan, 1964).

McLuhan died in 1980, just few months before the release of the first domestic personal computer, the IMB PC. I believe that this new medium entering the domestic domain does not fit into any of McLuhan's categories. One can argue that this is due to the fact that internet, audio-visual real-time and, in general, all computers' features marked an unprecedented breaking point. Computers belong to a third category of media, based on a lukewarm temperature. This is because we are both the input and the output of this new "machine" at the same time, as I already mentioned in Chapter 2.1 when arguing about the user's activity and passivity towards the technology equipment entering in the domestic space. Therefore, the level of participation required is always variable

according to what we are doing and to what the machine is doing.

As previously mentioned in Chapter 2.1 *Technologisation of the interior and Domestication of Technology*, the massive development of technology has not only changed the physical interior and architecture. It has also affected relationships between partners, families, children and parents and so on. Most of these changes take place when the members of these relationships are living far from each other.

In the same way progress in the areas of transportation has helped couples and families to be together - e.g. high speed trains and airplanes allowing faster connections – new ways of communication played a crucial role in this connecting process (Figure 39). From exchanging letters based only on written or visual information received with a time delay to phone calls and emails allowing a more immediate sharing of aural or visual information - computers are taking the communicative experience to a further level by allowing separated families and couples to communicate in real-time and through a simultaneous exchange of audio-visual information.

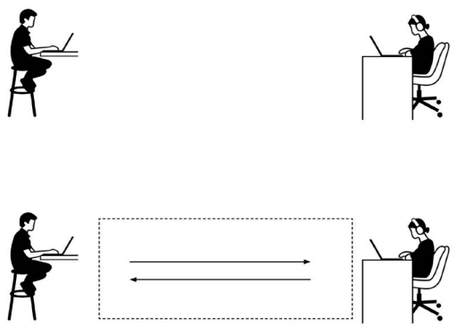


Figures 39: Communication evolution.

As a student studying and residing far from my home country, the feeling of being far away from my home, my family and my friends has directly challenged my notion of "distance" almost on a regular basis.

According to the *Oxford Dictionary*, "distance" is "the condition of being far off; remoteness", "a space or interval between two things" or "a distant point in place" - whose etymology goes back to the Latin *distantia*, stand apart (Oxford Dictionary of English, 2010). I believe that technology and new digital media are no doubt playing a crucial role in the redefinition of this concept by penetrating in our lives and our houses.
Within this frame I think video calls are one of the most relevant examples as they allow families, friends, colleagues and strangers to see each other in spite of the physical distance that may be dividing them. Not only are they changing the perception and the boundaries of space and time, they are also creating new dimensions around us. When I am Skyping or FaceTiming, my spatial awareness gets altered and the physical space surrounding me no longer corresponds with the place where I am living the experience. When skyping with someone, say my mother, I "perceive" three different and actual realities participating during the conversation:

1. the physical space surrounding me - Rotterdam, my room, my desk, my computer, my screen, my



Figures 40: Intangible channel created between the two physical spaces.

body and my eyes;
2. the space where my mother is - Scandiano, our living room, her computer, her screen, her body and her eyes;
3. an additional reality, a temporal space created between the two of us where we both exist. An intangible "channel" starting from the back of my screen and continuing until the back of my mother's screen (Figure 40).

The Skype experience is based on these realities blending together, a "thirdspace a meeting point created by the boundaries between reality and virtuality merging together. In *The Location of Culture* (1994) Homi K. Bhabha, director of the Humanities Centre at Harvard University and post-colonialist theorist, defines "Thirdspace" as "a mode of articulation, a way of describing a productive, and not merely reflective, space that engenders new possibility. It is an interruptive, interrogative, and enunciative space of new forms of cultural meaning and production blurring the limitations of existing boundaries and calling into question established categorisations of culture and identity" (Bhabha 1994 cited in Meredith, 1998, p.3).

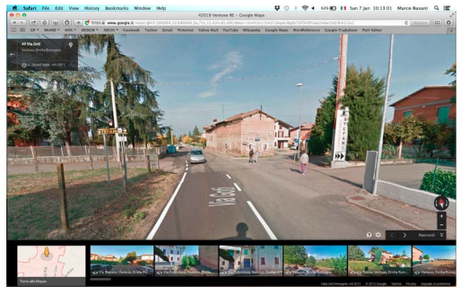
"Thirdspace" is a concept further developed by American political geographer, urban planner and cultural theorist Edward W. Soja in *Thirdspace: Journeys to Los Angeles and Other Real-and-Imagined Places* (1996). For Soja "Thirdspace is a fully lived space, a simultaneously real-and-imagined, actual-and-virtual locus of structured individuality and collective experience and agency" (Soja, 2000). It is a space where material and immaterial, objective and subjective meet. In the Skype "Thirdspace", the perception of the bodies and of the spaces changes as they are meeting in an immaterial "channel" that goes beyond the physicality of my room and, more in general, of architecture.

3

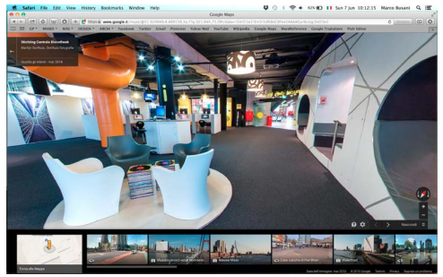
Design Research

3.1

Blurring Distances (from 1000 km to 0 km)



Figures 41: Google Maps Street View in an exterior.



Figures 42: Google Maps Street View in an interior.

Technology and the power of bilocation

"Can we read minds? Become invisible? Have sharp claws like Wolverine? Unless we are part of the *X-men* team these abilities seem a little out of reach" (Lamby, 2010). Despite Lamby's statement I argue that new digital media and technologies are offering us the chance to hold a different power, i.e. bilocation.

Bilocation is a phenomenon based on the simultaneous appearance of a person in two different places. In the past it was considered a mysterious paranormal happening and it was related to religion and to ghostly apparitions of saints and holy figures. I would categorise bilocation as a feature belonging to contemporary technology too.

As mentioned in the previous chapter, Second Life and other computer-based simulated environments offer the possibility of being in two different places - a physical one and a virtual one- simultaneously. Similarly, when walking down a street or entering in a store or in a museum in *Google Map Street View* our presence is transferred from our actual location and transferred to the one we are virtually visiting (Figures 41 and 42).

Web mapping services present two main differences from *Second Life*. On the one hand our presence is passive and we behave as mere observers as no interaction is allowed. On the other hand both locations are real. From this point of view, it is possible to say that in *Second Life*, one of the two places we are in - the virtual one - hosts a fictitious representation of us, that is an avatar who is decontextualised from the real space we are in.

On the other hand, a Skype video-call creates a "clone" of both us and the space we are in. More specifically, during a Skype conversation with my mother in Italy my interior in Rotterdam and I exist at the same time in both spaces since the immaterial channel between the two of us contains both realities.

24-hour-long Skype cohabitation

Considering the idea of distance presented in chapter 2.3 *Technology and the perception of distance* as well as the above-mentioned notion of bilocation, John Clang's project *Being Together* (Figures 43 and 44) became the first important inspiration for my design research.

The Singaporean photographer's intention was to bring together family members living far apart in different countries of the world. Clang stated that: "In this series, the webcam was used to do live recording of my family in Singapore. The recording was then transmitted via Skype to New York City and projected onto my living space. This is how families, dis(membered) through time and space, can be re(membered) and made whole [or complete] again through the use of a third space, a site that is able to reassemble them together within the photographic space that we call a family portrait" (Clang, 2010).

Together with inspiration, Clang's *Being Together* presents a few limits I am interested in overcoming. The photographer used recorded images in his project, thus losing the real-time feature of Skype. Furthermore, through the technique of photography he captured an ephemeral moment, rather than creating a real live reunion.

Figures 43 and 44: John Clang's Being Together.

As a first attempt I tried to erode the 1000km of distance between my house in Rotterdam, where I am actually living, and the one where my family is living in Italy without physically displacing anything (Figure 45).

I started projecting real-time Skype conversation with my parents in my domestic space. The combination of Skype and the projection allows a detachment between the user and the device, as through the voice Skype does not require hands to type and through the projection our eyes are not tied to the screen anymore. Our bodies are free in the space since Skype is increasingly more related to space rather than to the device. Furthermore, the projection allows a 1:1 scale visualisation of the physical space where the person I am skyping with lies.

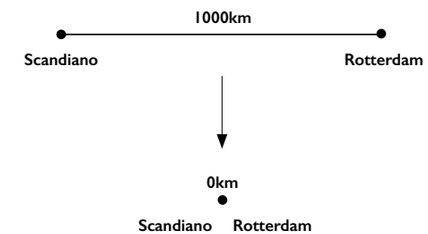
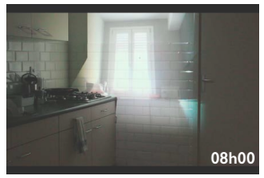
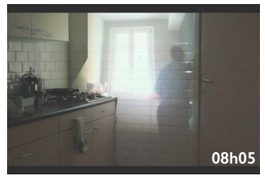
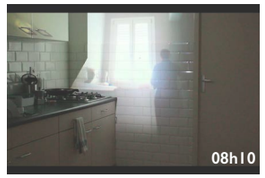
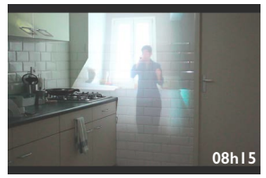
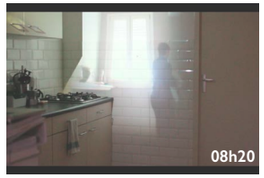
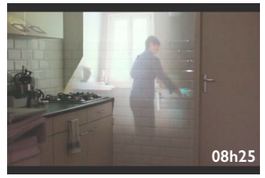
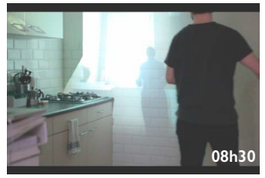
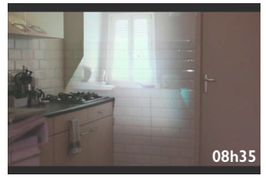
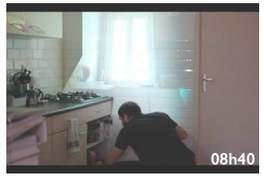
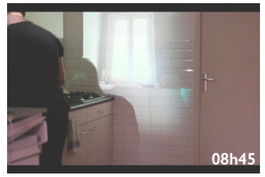
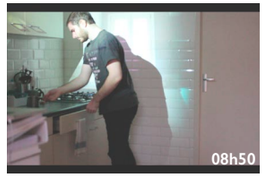
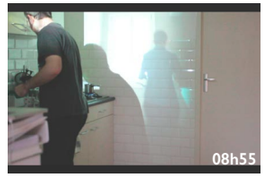
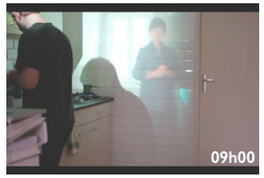
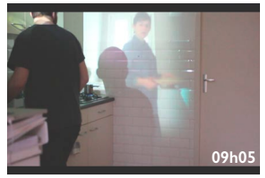
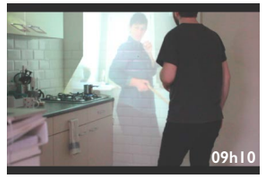
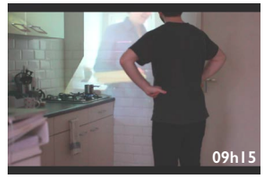
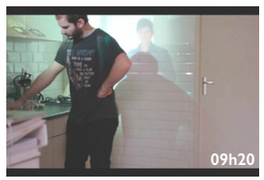
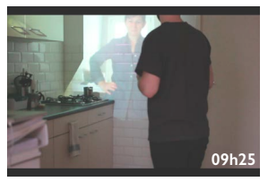
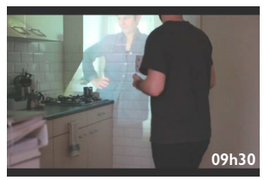
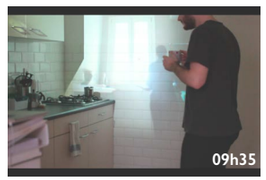
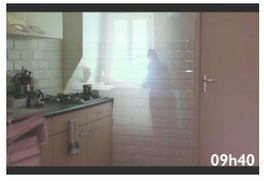
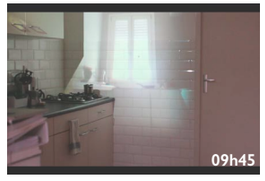
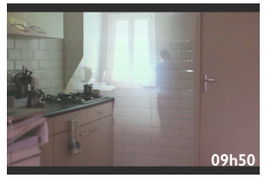
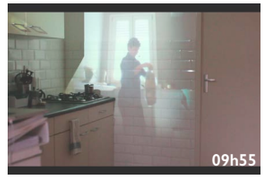
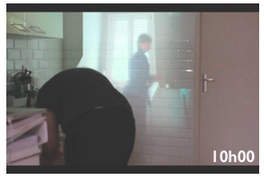
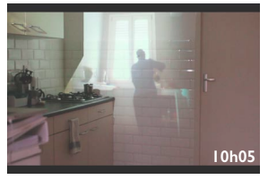
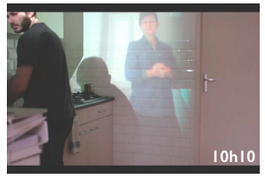
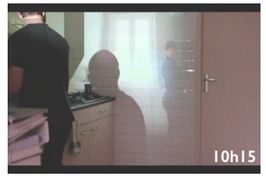
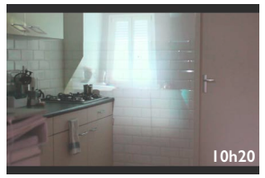
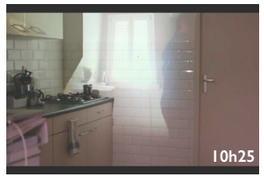
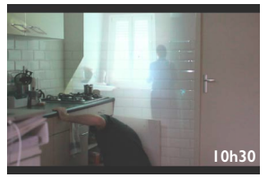
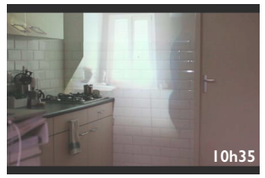
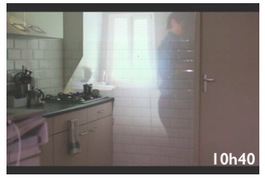
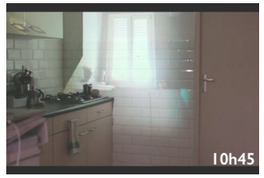
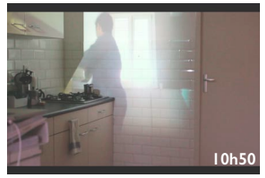
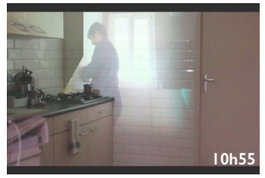
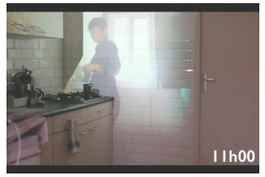
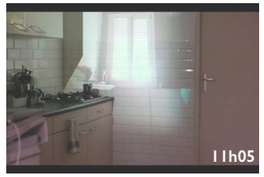
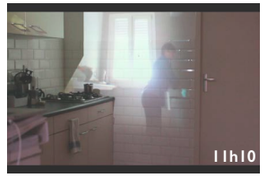
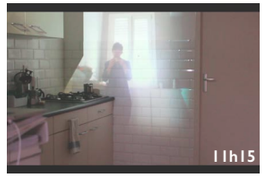


Figure 45: Blurring distances.

After short experimental trials I experienced a 24-hour-long Skype cohabitation with my family in Italy. I decided to focus on the kitchen as it is a room featuring in both houses. It is a public space of the house where most of the interactions and communication happen (Figure 46).

Through the combination of Skype and projections, new three-dimensional addendum were suddenly incorporated in my space. The wall I am being projected onto becomes both a permeable surface and a communicative feature of the space. As the diagram below shows the perception of the architecture of my apartment in Rotterdam eventually changed. It became twice bigger without changing its physical configuration as seen by the added volumes in the drawing in Figure 47. In addition to that, during the whole day I felt much closer to my parents rather than to my neighbours living right next to me.


08h00

08h05

08h10

08h15

08h20

08h25

08h30

08h35

08h40

08h45

08h50

08h55

09h00

09h05

09h10

09h15

09h20

09h25

09h30

09h35

09h40

09h45

09h50

09h55

10h00

10h05

10h10

10h15


10h20

10h25

10h30

10h35

10h40

10h45

10h50

10h55

11h00

11h05

11h10

11h15

11h20

11h25

11h30

11h35

11h40

11h45

11h50

11h55

12h00

12h05

12h10

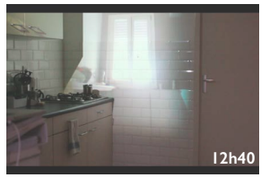
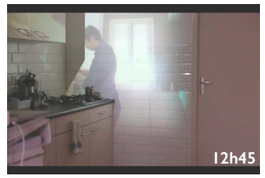
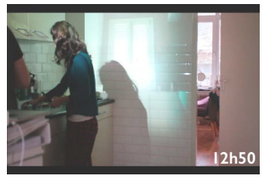
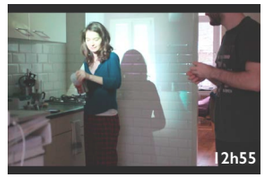
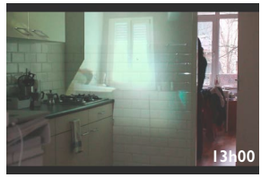
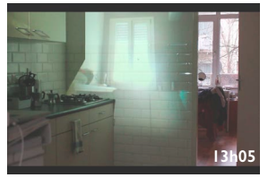
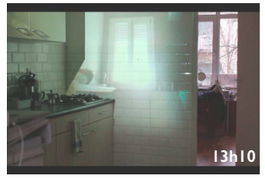
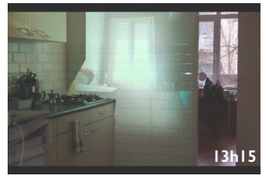
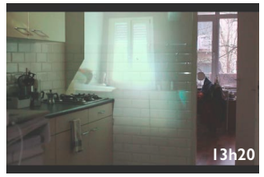
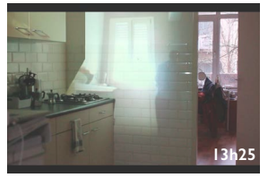
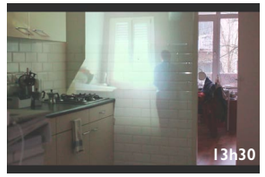
12h15

12h20

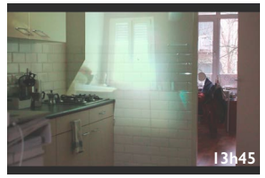
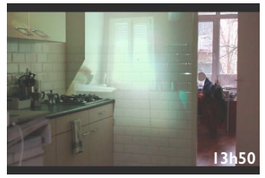
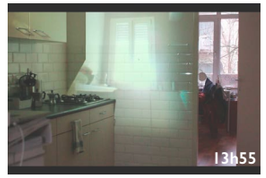
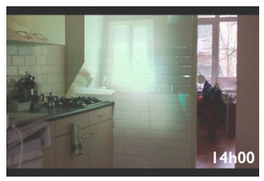
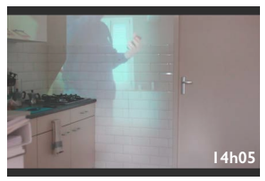
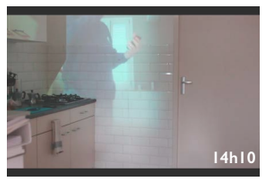
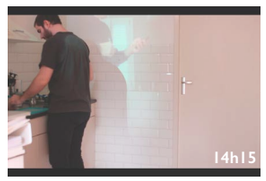
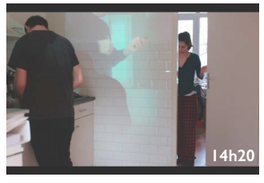
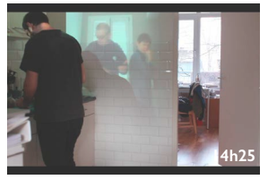
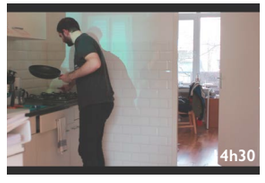
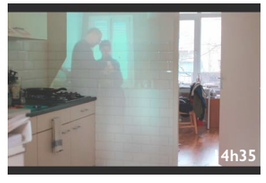
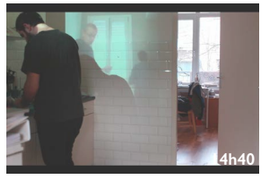
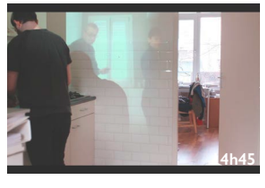
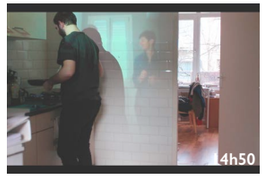
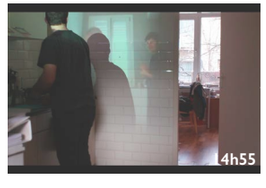
12h25

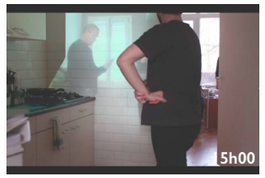
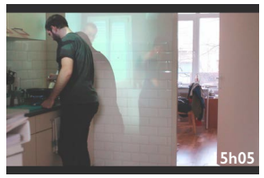
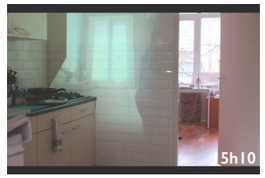
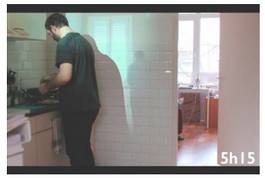
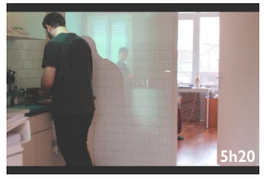
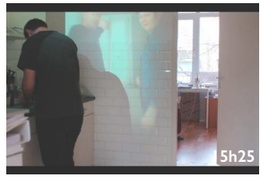
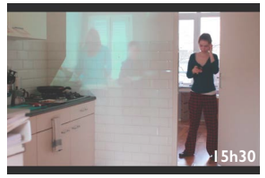
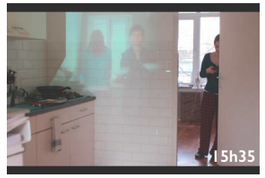
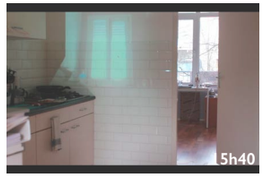
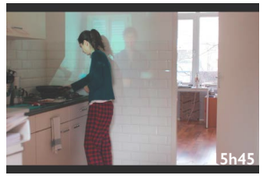
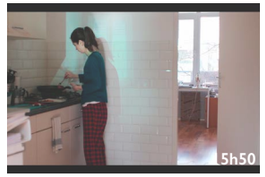
12h30

12h35


12h40

12h45

12h50

12h55

13h00

13h05

13h10

13h15

13h20

13h25

13h30

13h35

13h40

13h45

13h50

13h55

14h00

14h05

14h10

14h15

14h20

14h25

14h30

14h35

14h40

14h45

14h50

14h55


15h00

15h05

15h10

15h15

15h20

15h25

15h30

15h35

15h40

15h45

15h50

15h55

16h00

16h05

16h10

16h15

16h20

16h25

16h30

16h35

16h40

16h45

16h50

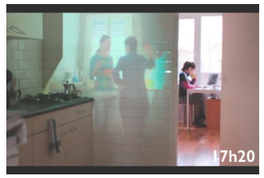
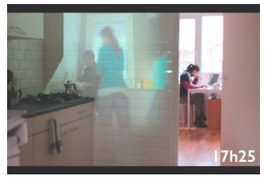
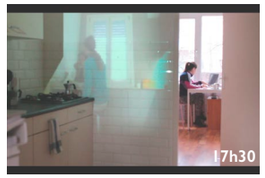
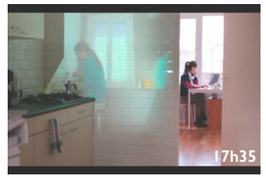
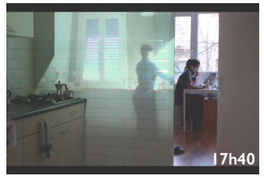
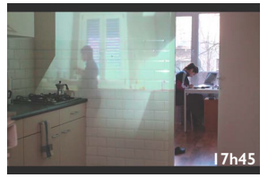
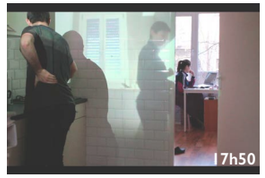
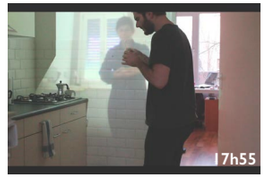
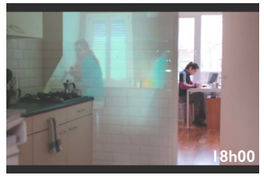
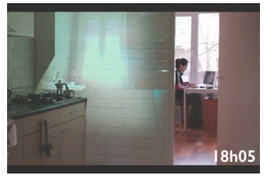
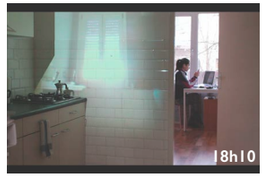
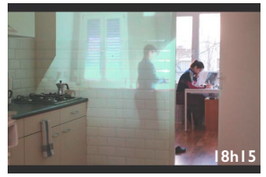
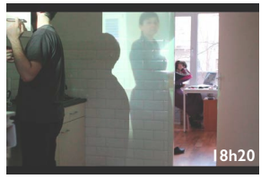
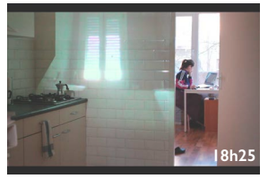
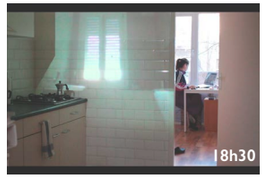
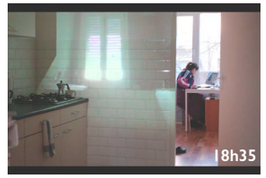
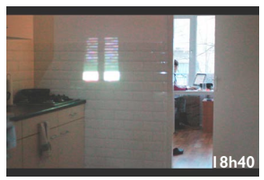
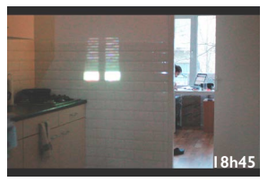
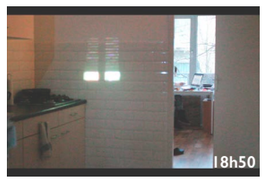
16h55

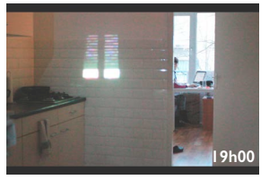
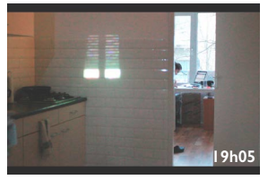
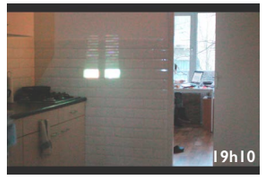
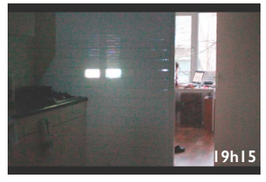
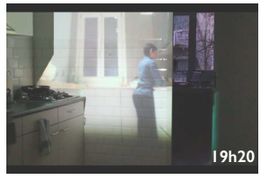
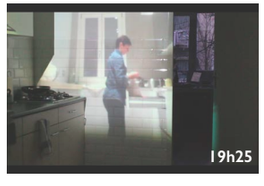
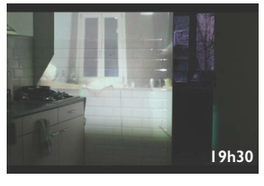
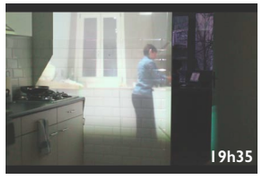
17h00

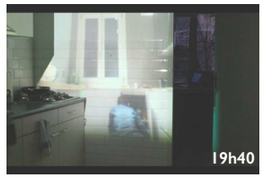
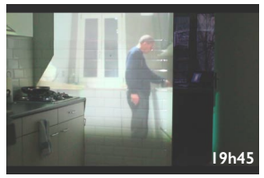
17h05

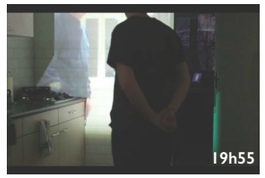
17h10

17h15


17h20

17h25

17h30

17h35

17h40

17h45

17h50

17h55

18h00

18h05

18h10

18h15

18h20

18h25

18h30

18h35

18h40

18h45

18h50

18h55

19h00

19h05

19h10

19h15

19h20

19h25

19h30

19h35


19h40

19h45

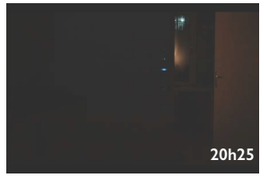
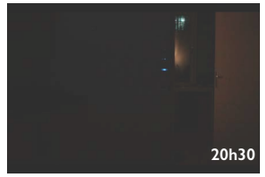
19h50

19h55

20h00

20h05

20h10

20h15

20h20

20h25

20h30

20h35

20h40

20h45

20h50

20h55

21h00

21h05

21h10

21h15

21h20

21h25

21h30

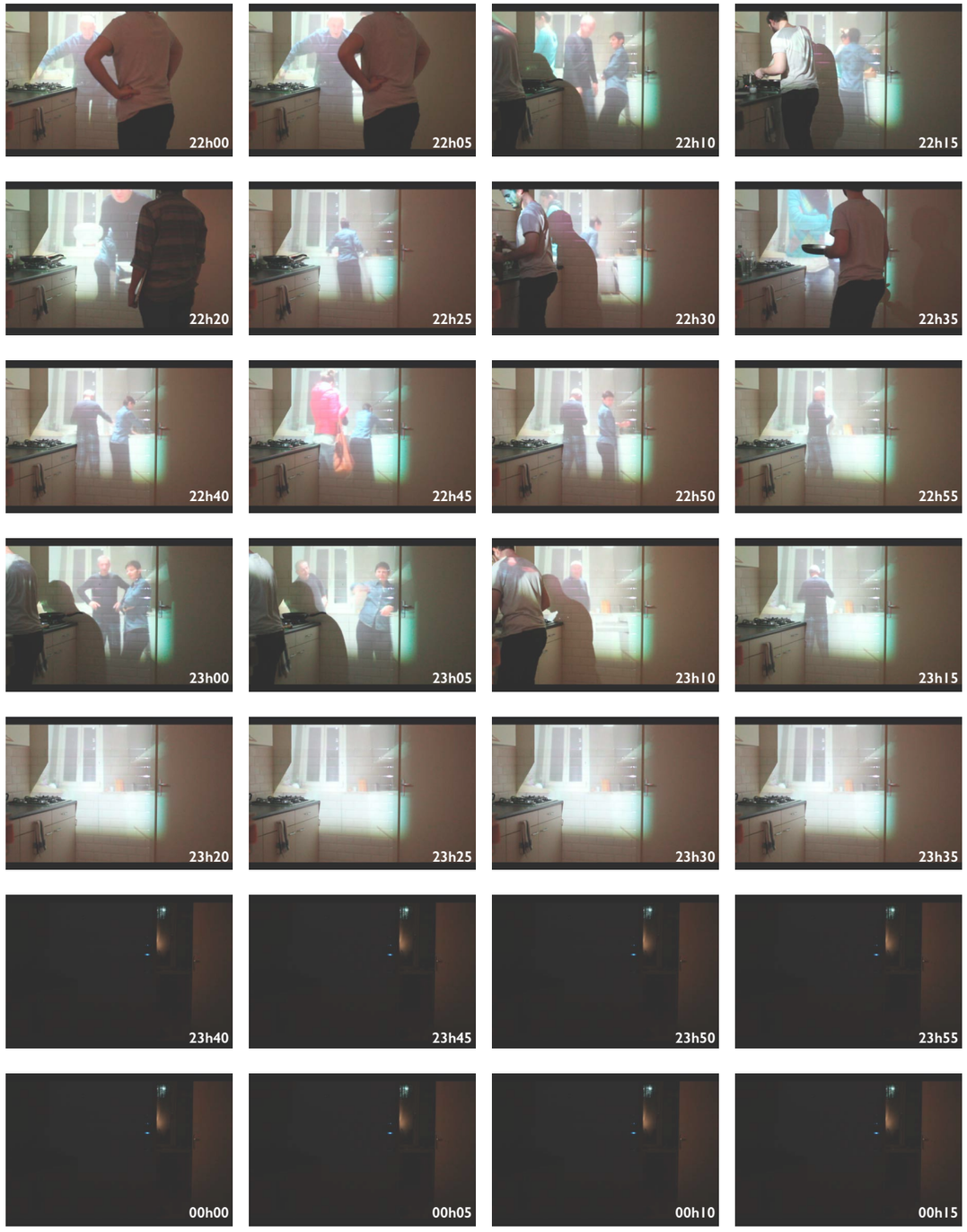
21h35

21h40

21h45

21h50

21h55



In terms of behaviour, a few changes happened during the day. In the morning both my mother and I felt the need to apologise when turning our back towards the projected wall and we felt obliged to inform each other about secondary information. As time passed we got progressively more used to the other reality that was now present in our space.

Sound played an unexpected crucial role mainly when my mother or I were not in the kitchen. Daily life sounds from my family's house in Italy became the background soundtrack of my domestic activities in Rotterdam. From my room I could still hear my mother chopping food or talking on the telephone.
My perception of space changed to a very great extent when no one from my family was in the kitchen but I could still hear sounds from other parts of the house. Due to the annoying sound of the electric razor I could see myself walking through the living room, the corridor and finally the bathroom where I saw my grandfather shaving his beard in front of the mirror. The doorbell ringing at noon made me picture my sister standing in front of the door in the garden, whereas the talks coming from the dining room at lunch accompanied my meal too.

The stimulation of involuntary and associative memories based on sensorial perception - in this specific case sound - was an interesting aspect of the cohabitation. Involuntary memories are based on an unconscious evocation of remote recollections of our life through everyday cues.

I find it interesting how this connects with the taste of a madeleine in Marcel Proust's *In Search of Lost Time* (1913). The little dessert acted as a catalyst to bring back to mind memories of a past event. "And

Figure 46 (previous pages): 24-hour-long Skype cohabitation.

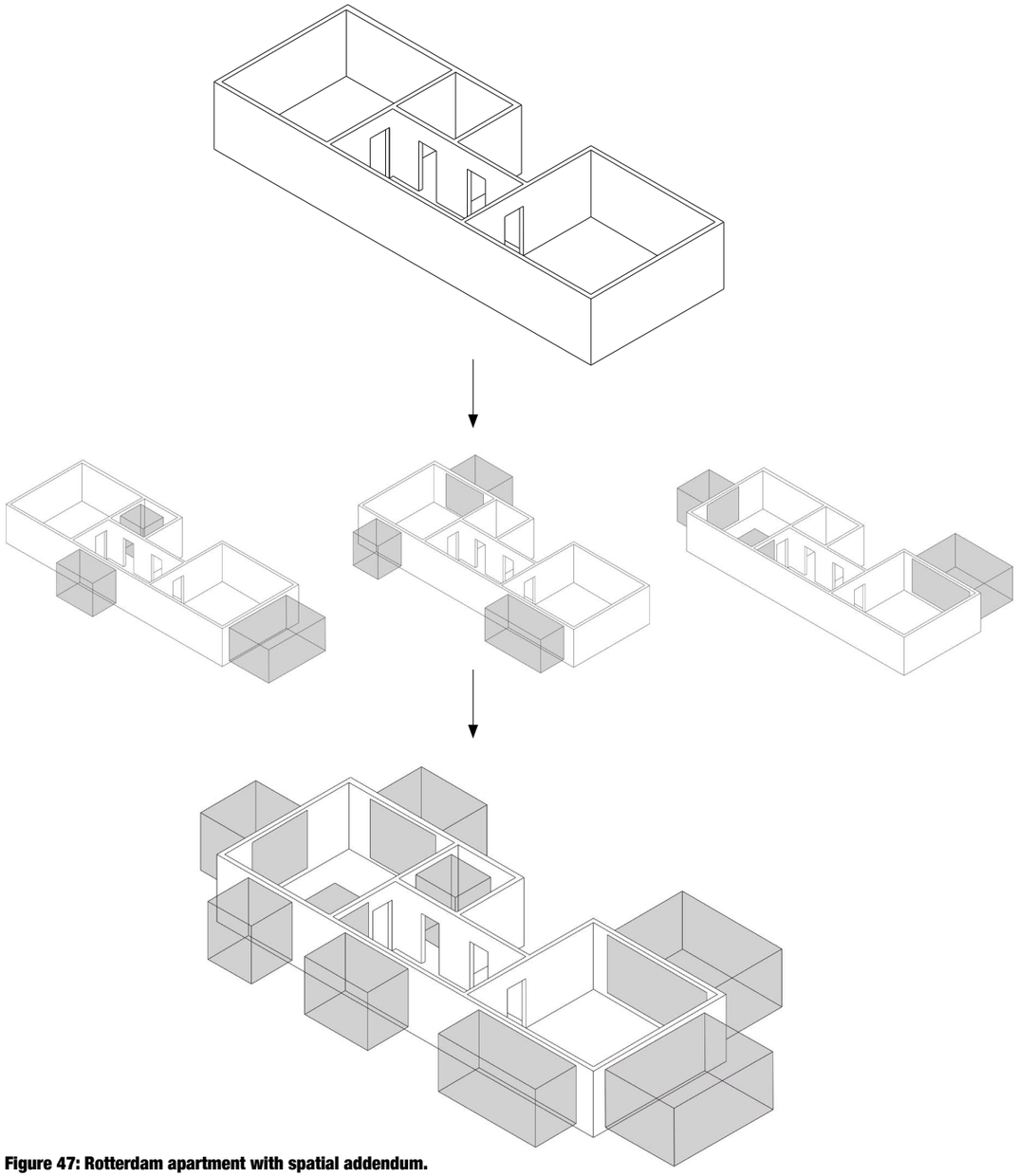


Figure 47: Rotterdam apartment with spatial addendum.

suddenly the memory revealed itself. The taste was that of the little piece of madeleine which on Sunday mornings at Combray […] my aunt Léonie used to give me. The sight of the little madeleine had recalled nothing to my mind before I tasted it" (Proust and Treharne, 2003).

Likewise, the daily soundtrack of my domestic space in Italy conjures happenings, situations and people related to my past life in that specific place.

Furthermore, these sounds are therefore enhancing the perception of spaces that are not visible through the projection thus creating an immaterial network of spaces.

Light played a crucial role, too, for two main reasons. The first one concerns the relationship between the natural light in the two environments and the light of the projector. When the ambient light was brighter, around noon, it was harder to see the projected images as they were partially vanishing onto the wall.

The second one is related to the artificial light. In the evening when my parents turned on the light in the kitchen, my kitchen was well-lit too, without having to turn on my own light. Likewise when they turned it off, my kitchen got darker too. From a light point of view one could argue that the two spaces were merging and influencing each other directly and physically. They behaved as one as they merged into one layer forming not only one connected bilateral channel, but also merging into a hybrid reality that surrounds us in a mediatised today.
The polyphony of factors within space – including light, sound and more features – goes beyond the content of the pure projected image itself and leads

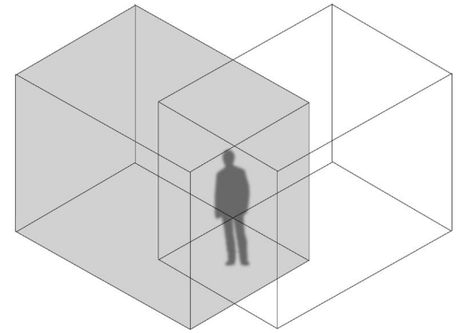


Figure 48: Spatial perception during the 24-hour-long Skype cohabitation.

to a feeling of inability in distinguishing reality from virtuality and simulation of reality.

This can be associated to the idea of hyperreality defined by Italian writer and semiotician Umberto Eco in his *Travels in Hyperrealities*. According to Kinder (2012), Umberto Eco suggests that hyperreality is "to desire of reality and in the attempt to achieve that desire, to fabricate a false reality that is to be consumed as real". Furthermore Eco adds that "technology and the created atmosphere can give us equal or more reality than nature can" (Eco, 1986, p.44) considering reality as the quality of being endowed with objective and actual existence.

Accordingly, despite sensorial limits such as touch or smell, I consider the 24-hour-long cohabitation as an approach to the creation of a hyperreality.

Additionally, my interior becomes a spatial-temporal continuum with my perception of the space becoming a mediated perception. My notion of presence is no longer based on the mere sense of belonging to a specific environment and of "being there", but rather on the experience of being in that environment by means of a communication medium. In the essay *Defining Virtual Reality: Dimensions Determining Telepresence* Stanford University communication researcher Jonathan Steuer defines "presence" as the natural perception of an environment, and "telepresence" refers to the mediated perception of an environment. "This environment can be either a temporally or spatially distant "real" environment, or an animated but non-existent virtual world synthesised by a computer" (Steuer, 1993 cited in Biocca, Levy, 1995, p.36).

Technology, Materiality and its Transcendence

This experimentation sheds light on an important aspect that the cohabitation called into question, i.e. the materiality of our self and of our surrounding. To define what the materiality of the Skype cohabitation is I researched previous examples where the physicality of a human being's body and its perception is challenged, specifically when its matter is displaced from one place to another.

As with bilocation, the materiality of the Skype projected conversation can be linked once again to a feature proper of a superpower. In *The Physics of Superheroes* James Kakalios states that phasing or intangibility is the "mutant ability to walk through solid matter" (Kakalios, 2005, p.249). More specifically it is a distinguishing attribute of the *X-Men* saga superhero Shadowcat. She has the ability of temporarily merging with the object she is passing through "without interacting (and without both) [being] unharmed when Shadowcat has finished passing through it" (Marveldirectory.com, 2013). Accordingly, during a phasing or tunnelling process the body blends with the matter of the barrier and once it reaches the other side it manifests with identical features of the pre-trespassing.

American sci-fi cult television and movie series *Star Trek* deals with this notion of transfer in a different perspective. Here the presence of a transporter allows the transportation of objects and people in real-time from one place to another. In detail, this "involves a person stepping into a send-booth and having every single atom in his body and its location encoded. His compete physical structure would be stored in a memory buffer. The code of his structure

Figure 49: X-men superhero Shadowcat.

would be sent, presumably by quantum mechanical means, to a remote receive-booth. At the reception end, the person's body would be reconstructed according to the encoded information" (Johnson, 2002) (Figure 50). To summarise, the process is based on the matter-to-energy dematerialisation and the materialisation of the matter in a different location. In the series Star Trek, an entire interior in many starships is dedicated only to this purpose. As visible in Figure 51, it takes a whole specific room to achieve teleportation. One part is designed for the dematerialisation itself and features a circular shape, walls covered by screens and the possibility to host a limited amount of people at the same time. The transporter control faces the circular area and allows the operator to control and activate the functions of the transporter manually.

On the other hand, 2014 sci-fi American movie *Transcendence* deals with the physical life transforming into an artificial intelligence-based existence. The protagonist, Dr. Will Caster, is a scientist specialising in A.I. who got mortally wounded by an anti-tech terrorist group. In the wake of this his wife and colleague manages to upload the consciousness of his dead body into a computer. As a consequence Dr. Caster becomes "an omnipresent immaterial being who exists solely via the supernatural realm known as the Internet" (Braun, 2014) (Figures 52 and 53).

As soon as his consciousness has been uploaded in the machine, the computer intelligence seems to take over Will's personality. Accordingly, "the underlying question that runs throughout the film is whether or not the seemingly self-aware, freely-acting computer entity is Dr. Will Caster, or if it is just a digital simulation of his consciousness" (Cain Travis, 2014).

Independently of whether human intelligence replaces the artificial one or not, the movie shows that technology is able to prolong the existence of the scientist detaching it from the materiality of his bodily presence.

Lastly, in the context of materiality, I once again find the role of *Second Life* very interesting. In *Second Life* we deal with a fully imaginary space whose virtual functions and features exist just because users pay real money to purchase and experience them. Thus, this specific example exposes the essential dependence of the virtual world on the material one.

The analysis of these references highlights parallelisms and dissimilarities with the Skype cohabitation.

In both of the first two examples - Shadowcat and *Star Trek*'s transporter - the body fully disappears from the first location and reappears in the second one. However, in the Skype cohabitation no dematerialisation takes place as we are still present in the former location. Furthermore, the conscious authenticity of the participants to the conversation is not questioned despite being mediated by a technological medium as in *Transcendence*.

As previously mentioned at the beginning of this chapter in relation to the phenomenon of bilocation, *Second Life* shares with Skype the possibility to exist simultaneously in two different realities. However, it is only in Skype conversations that location and occupants are both physical.

It is the physicality of the two Skype cohabitants and

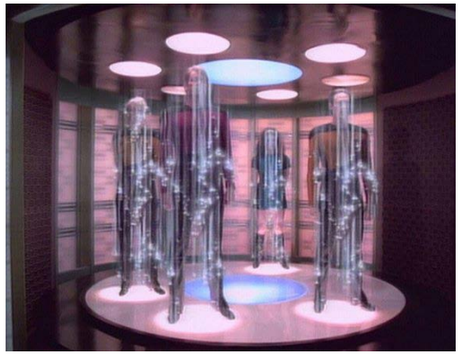


Figure 50: Star Trek's Transporter.

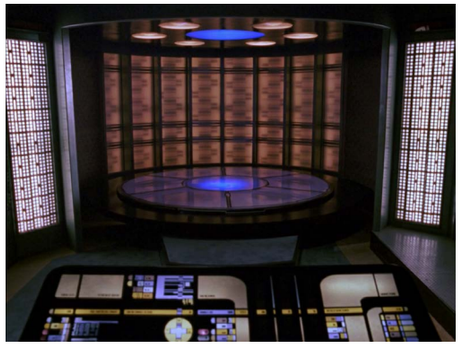


Figure 51: Star Trek's Transporter room.

Figure 52: Scene from Transcendence.

Figure 53: Scene from Transcendence.

spaces that challenges the common knowledge of the immateriality of technology. In terms of perception, there would have been no difference if my parents had been in the room right next to mine with a glass wall dividing the two spaces.

In any case I deem materiality in the context of Skype and more generally technology a matter that in a short time will no longer be questioned as society and culture will be increasingly more adjusted to it. The same has already happened for a plethora of technological inventions - the first motion picture or phone call to name but a few.

Nobody now questions whether we are in a virtual space during a phone call or where the limits of a movie screen in a cinema are - even though 3D glasses are trying to subvert that.

This evolution becomes clear in the case of the audience watching the very first motion picture ever aired - *L'arrivée d'un train en gate de La Ciotat* filmed in 1896 by Auguste and Louis Lumière (Figure 54). "By setting the camera intentionally close to the tracks, they captured a dramatic image of the train as it progressed diagonally across the screen, from long shot into close-up shot" (Cudworth, 2014, p.4). As a consequence, "the spectators ran out of the hall in terror because the locomotive headed right for them. They feared that it could plunge off the screen and onto them" (Loiperdinger 2004, p. 89).

This highlights the lack of understanding of the interface - the space where interactions between humans and machines take place - and its limits. Also the depth of the image was erroneously perceived, as the screen appeared to the audience as a window, a hole in the wall allowing physical access to the train in order to penetrate the cinema and break through it.

The multi-perspective analysis of the relation between technology and its materiality highlights how it is impossible to provide a univocal definition of it. It is only through the spectrum of its meanings that one can grasp the complexity of this relation and the multifaceted aspects belonging to it. To conclude, the relation established between the two spaces connected by Skype could be considered as an extension of the materiality of the two former realities.

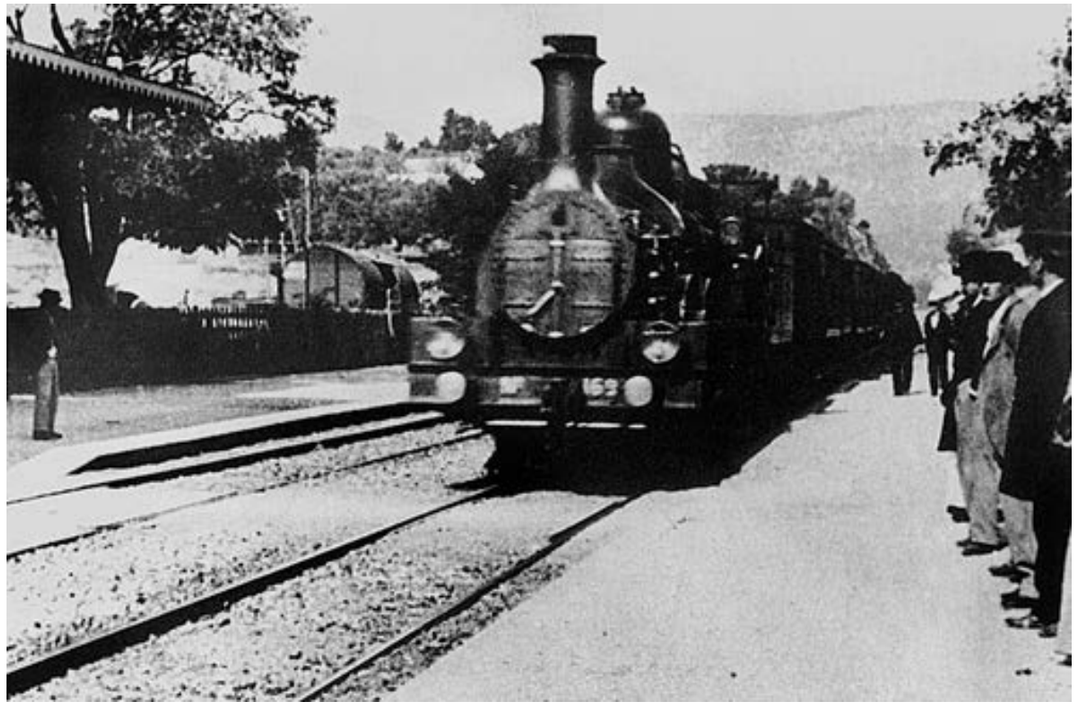


Figure 54: Scene from L'arrivée d'un train en gate de La Ciotat.

3.2

Filtering Technology

Figures 55, 56, 57: Arne Svenson's The Neighbors.

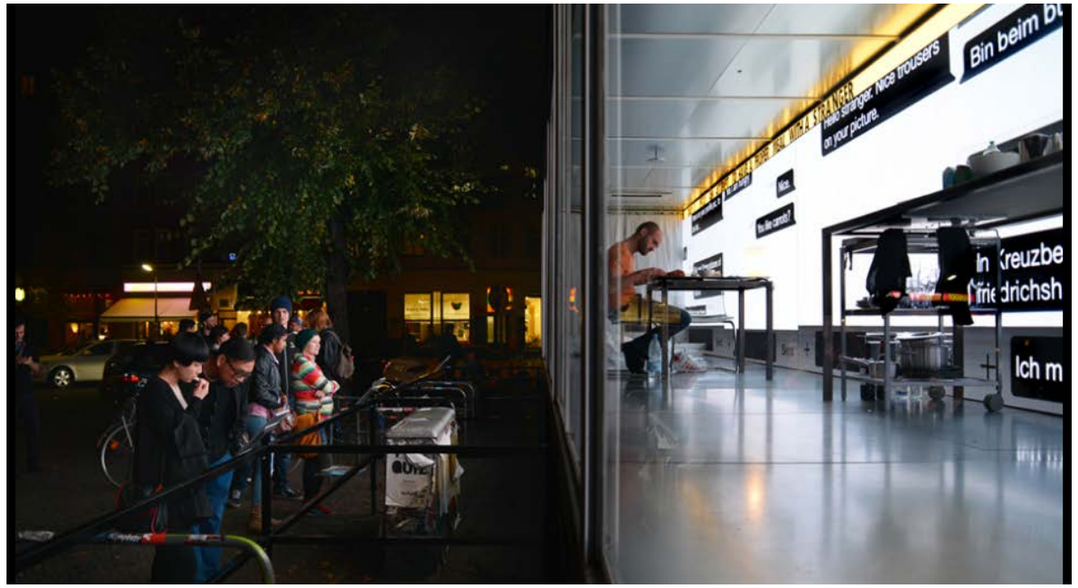
After the 24-hour-long cohabitation with my parents I started thinking what could happen if I applied the same sharing technique through the medium of Skype to my whole interior space. What if my enlarged apartment presented in the diagram in Figure 26b actually existed because of the simultaneous presence of these 3D addendum?

My whole interior would be entirely controlled by an exterior gaze. It would almost have similar features to the house in the *Big Brother* reality show where the contestants are constantly observed, with the only difference that in the case of the Skype cohabitation the observation is mutual.

In terms of external observation, I found an interesting connection with two projects where the gaze is not directly based on a digital medium.

In the first one, *The Neighbors*, American voyeuristic photographer Arne Svenson peeks into the glass-walled flats just in front of his Lower Manhattan apartment and photographs his neighbours' daily life (Figurs 55, 56 and 57). "The grid structure of the windows frames the quotidian activities of the neighbors, forming images which are puzzling, endearing, theatrical. […] *The Neighbors* is a social documentation in a very rarified environment" (Svenson, 2012). Through his snooping art, Svenson plays with the fear of privacy invasion typical of big city life. One could argue that, because of the increasing intrusion of technology into our daily life, this fear is no longer related exclusively to a metropolitan way of living as it can reach anyone anywhere in the world as long as they are using a black mirror device.

The second one deals with the topics of observation



Figures 58 and 59: Dries Verhoeven's Wanna Play?.

and privacy invasion from two points of view – a technology-based one and non-technology based one – together with the feeling of loneliness entailed by social media life. Dutch artist Dries Verhoeven imprisoned himself in a glass container placed in the middle of a square in Kreuzberg, Berlin, for his project *Wanna Play?* The only connection with the outside world was provided through *Grindr* conversations - a popular gay dating app - projected on the glass walls of the container and publicly visible from the outside . "I see the glass container as a materialised chat box. The screen of my smartphone will be visible on a large LED panel. The men's faces will be unrecognisable to avoid immediately bringing on the wrath of a whole community, but the conversations can be followed word for word" (Verhoeven, 2014). Besides the public exposure of private conversations, Verhoeven exposed his own private life publicly, with all his daily activities becoming a shared experience as shown in Figures 58 and 59.

Both projects were extensively criticised. The controversial *Wanna Play?* was forced to shut down ahead of time after several protests. "Arguably, the piece was doomed long before then; by Friday evening, somebody had tried to hurl a brick through the glass-walled trailer that Verhoeven was living in" (Tsjeng, 2014).

More in general one can argue this incursion into our domestic space and in general into our daily personal life through the digital medium can be associated to the sharing attitude of the social media era. In my opinion this is related to the incredible amount of information we are constantly sharing through our Facebook posts, tweets and so on, thus voluntarily and increasingly exposing ourselves to the public

sphere. Within this frame, *Be Right Back*, first episode of *Black Mirror*'s second season, widely portraits this over-sharing.

This particular episode is about Martha, a "social media widow" (Alexander, 2013). Martha's husband, Ash, is addicted to social networking. He is constantly checking emails, posting pictures, tweeting status and so forth. His eyes are constantly staring at his portable black mirror. Ash dies in a car accident. Although the circumstances are not clear, his obsession of using his mobile phone while driving leaves no doubt about the hypothesis of the causes. This goes back to the quote of Paul Dourish presented in chapter 2.1 *Technologisation of the Interior and Domestication of Technology* that states that "we have to look at the screen to see what we are doing, which involves looking away from whatever other elements are in our environment,

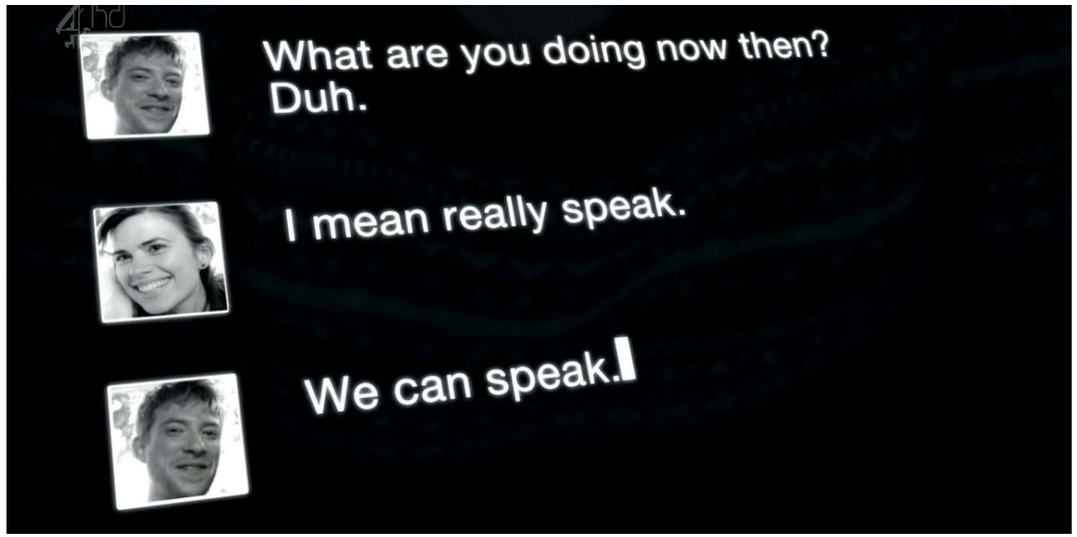


Figure 60: Be Right Back - messages between Ash and Martha.

Figure 61: Be Right Back - messages between Ash and Martha.

Figure 62: Be Right Back - Martha receives the body made of sybthetic flesh.

Figure 63: Be Right Back - Ash and Martha.

including other people" (Dourish, 2001, p.27)

While being bored and depressed, Martha finds out about an app that allows talking to dead people. "Using the manifold digital fingerprints, photographs, voice recordings and text interactions he has left in the social media space, this tech can serve Martha an interactive AI of Ash's personality. It knows how he talks, his tastes and his memories – as long as he has shared them" (ibidem). Firstly they can communicate through text messages (Figures 60 and 61), then phone calls and eventually Martha receives by mail a body made of synthetic flesh of her deceased husband she can activate through his stored digital data (Figure 62). Ash's past online communications have been able to fully recreate his life, his history (Figures 63).

Besides showing the increasing obsession for both online sharing and the digital world, what is fascinating about *Be Right Back* is the unmasking of online behaviours. As the episode develops, Ash's behaviour with Martha shows the inauthentic way he presented himself while being on the internet. When we are online, we indeed often expose ourselves in a false way as actors in a virtual theatrical play. We pretend to be someone we are not to better fit in with the online society. On the web we appear as a distilled selection of pictures from our iPhone gallery to hide who is actually behind that profile. This topic will be further analysed in the next chapter.

In any case, social media are actually already offering the possibility to protect our privacy: private messages or posts, blocks, online/offline/invisible statuses and more act like filters from being completely exposed as they are allowing us to share information just to selected people, friends, followers, favourites.

In the same way, I was interested in translating this idea of filters into my domestic space as a protection from the "Skype invasion". My trials are based on different ways to control the projected "intruder" in my space trying to shield my privacy.

As I mentioned in the previous chapter, my interest in the use of the projector lies in the creation of a sense of physical detachment into the user-device pair, by integrating the Skype meeting in the architecture. Rather than on the projector or on the

Figure 64: Trial 1 (door - projected image).

screen of the computer, I decided to work directly on the architecture and on the surface I was projecting onto, in order to keep this notion of the distance and alienation from devices.

My very first attempt was based on the relationship between the projected image and a movable surface in this specific case - a door. I placed the projector right in front of the closed door and I started the virtual cohabitation with my sister. As soon as I opened the door, my sister disappeared from my interior space (Figure 64). The light beam of the projector was not strong enough to hit the surface beyond. Thus the

Figure 65: Trial 2 (mirror - projected image).

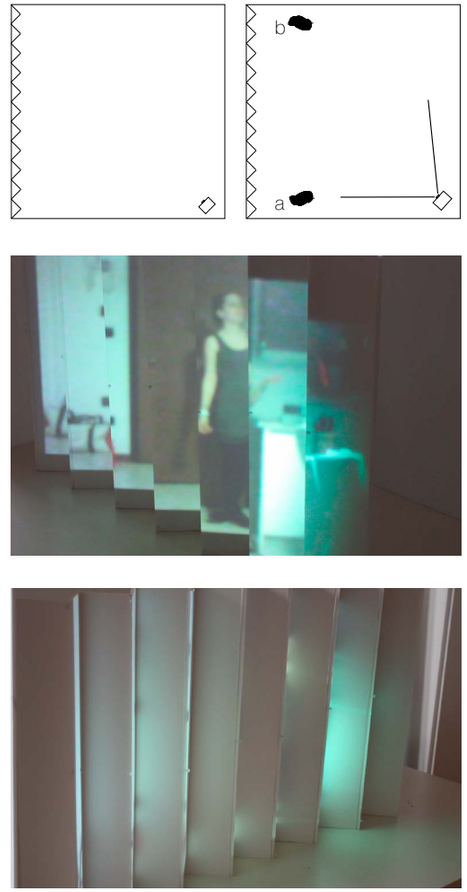
presence of my sister and her interior vanished in the space due to the increasing distance imposed between the medium and the surface. Once I closed the door again, the faded image of my sister appeared again allowing the both of us to continue our conversation.

The projected image was at times not directly visible, although its aural existence was always present, just like in the 24-hour-long cohabitation with my parents.

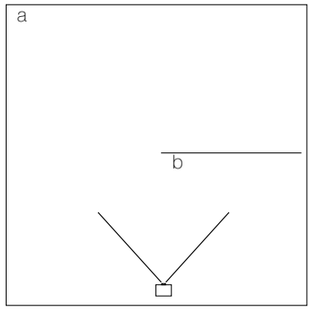
My second trial was always based on the interaction and the change in the position of surfaces, which in this case was a reflective one. The projector was placed in the same position in the middle of my bedroom, while I placed a mirror in front of the lens and I started moving it, changing its inclination. From one wall it was possible to totally displace the projected image and relocate it on every surface of the room, from the ceiling to the opposite wall where it almost disappeared because of the interference with a transparent surface onto which the beam goes through (Figure 65).

At a later stage I continued experimenting with the alteration of the surface. In this third case I based my trial on a more physical adjustment of the wall: from a plane surface, I turned it into a sequence of 90° rotated surfaces reiterated one after the other as shown in Figure 66.

According to the position of the user in the room, the projections were visible or invisible despite being always on. For instance when the user was in position A, the projected images were fully visible. On the contrary, when in position B the user was not able to see them.



Figures 66, 67 and 68: Trial 3 (rotated surfaces - projected image).



Figures 69, 70 and 71: Trial 4 (sharpness - projected image).

On the one hand this solution offered the creation of “safe” areas from the projected incursion that was based on our position within the domestic walls. On the other hand this kind of surface distorted the image due to a different distance between the projector and the oblique surface, thus creating an unrealistic overall view as shown in Figure 67.

This last experiment showed the importance of the distance between the projector and the surface. Due to the projector’s technical features, the dimensions of the image changed according to the distance - greater distance meant bigger images.

Another crucial feature was the image sharpness, which depends on the position of the surface too. As illustrated in the diagrammatic floor plan in Figure 69, two surfaces at different distance from the projector cannot be sharp at the same time. If surface A is sharp, B is not and in the same way if surface B is sharp, A is not.

Without changing the sharpness settings I played with adding surfaces by placing them at different distances from the projector. I first tried with scale models and as visible in Figure 70, the sharpness actually changed. One of the two images became blurred and the content was more vague and indistinct. If the further one is blurred, it is only through the introduction of a closer surface that I can decode the image.

Later I thought of applying this feature to my whole interior: the images projected onto the wall would be set to not be sharp and would therefore not be fully defined. They would thus become a sort of not-distracting background picture to my activities as I would almost see only moving pixels on my wall. It is only by activating and opening these surfaces that I would actually be able to clearly see the projected image.

When tried on 1:1 scale the result was indeed quite disappointing. As shown in Figure 71 the content of a blurred larger image projected onto the wall was still fully readable and was not fulfilling the same expectations of the scale model experiments. Hence, the addition of further surfaces appeared counterproductive.

My experiments highlighted the relevance of the relationship between the digital invasion and the protection from it. However, they also suggested there are many limits in shielding ourselves from the “Skype invasion”. Along with the points mentioned before, the experiments shed light on how difficult it is to simultaneously control both the images projected and the webcam that shares my life in my interior space with other people in other interior spaces. This turned out to be even more complex because of my intention to not manipulate the source and provide the feeling of detachment from the device.

Due to these limitations I decided to abandon the path of the physical and direct manipulation of the “Skype apparatus” - projector and webcam. This led me to further investigate the relation between Skype, architecture and human behaviour.

3.3

Staging my Interior

In the previous chapter I already introduced a crucial topic relevant to further develop the project - the transformation of our life into a fictional performance because of the digital social media. Within this frame, in *The Show and the Gaze of Theatre*, Erika Fischer-Lichte states that "the new media contribute considerably to the theatricalisation of everyday life and only allow access to a staged/fabricated reality" (1997, p.220).

Even though Canadian sociologist Ervin Goffman's *The Presentation of Self in Everyday Life* (1958) was published before the "social media revolution", I believe that its approach can be applied to the online sphere, too.

Goffman deals with the notion of "impression management" or "self-presentation management" which are based on the attempt to influence other people on the perception of the self image. For Goffman this takes place when directly interacting with other people. In the contemporary society I believe this idea of manipulation of the perception occurs when we are online as well.

The online life is thus happening on the front stage, "the arena of interaction wherein acting takes place. Here, actors give off a certain impression to audiences. It is the zone of active performance" (Goffman, 1958 cited in Riccio, 2013, p.35). Differently the non-online life, the one off-screen is the backstage, "a safe zone where actors can halt their performance and be themselves" (ibidem). It is the part of our life where we can unmask our personality.

In this light, social media can be seen as our own personal reality show. On the one hand the attention is now brought to "the small microcosm of each individual performer's lived experience, highlighting personal details for the online world that in the past were only available to friends and family. These details and performances that occur every day are now put on display. Like a reality show, even the most mundane minutiae of one's existence are brought into dramatic play and the proliferation of images shared on one's profile are read like scenes from a live-action film" (Riccio, 2013, p.84). On the other hand, this leads towards personalities being erratically created and based on the consciousness of being observed and judged by our online friends, followers and so on.

JenniCam is an early example of daily life network performance. "One of the web's earliest life-casters, Jennifer Kaye Ringley broadcasted live imagery from her apartment continuously between 1996 and 2003" (Proulx, 2015) (Figure 72). Life-casting is the uninterrupted transmission of events in a person's everyday life through the digital device. Her live-sharing shifted from being observed only by her circle of friends, to being observed by the whole world. Seven years after her first streaming, Ringley announced that she would shut it down. In a 2014 tweet, technology and pop culture writer Anil Dash stated that "now we are all *Jennicam*". Despite being different from the life-caster uninterrupted stream, the "life sharing" idea has been inherited by Instagram, Facebook, Twitter and more social networks.

Figure 72: JenniCam.

In the context of staged existences, *Black Mirror* represents once again a crucial reference. In the second episode of the second season, *White Bear*, this idea of theatricalisation of everyday life is presented as a punishment for a crime.

Here, the main character, Victoria, wakes up in an unidentified house with no memory about any past event of her life. All of a sudden a masked man holding a rifle starts chasing her in the streets outside the house she woke up in (Figure 74). While running, a large crowd appears (Figure 75). They are all holding their mobile phones and they are continuously recording the pursuit. No matter what is happening to Victoria, the "spectators" are doing nothing more that filming the scene with their devices as visible in Figures 73 and 76. There is no assistance, no contact or interaction between Victoria, who becomes the sole leading actress of the chase and the people around her, the voyeuristic audience.

Just at the very end of the episode we find out

Figure 73: White Bear - The spectators.

together with Victoria that her life is the core attraction of the *White Bear Justice Park*, an amusement park where people pay to follow the punishment she received (Figure 77). Such punishment is related to the crime she had previously committed and is based on being constantly observed and receiving no help in time of need.

The episode made me think further about how important is the relation and the interaction between the two sides of the Skype conversation. I find this idea interesting particularly in relation to the 24-hour-long Skype cohabitation. As it happened that day, during any video-chat conversation we generally become actors and spectators at the same time. For this reason, our daily activities shared in front of the screen - in this case the wall - become a performance play. As we are all performers and spectators, unlike *White Bear*, there is no passivity and everybody is fully part of the scene.

As mentioned in chapter 3.1 *Blurring distances*, the wall acquires a further meaning by becoming a permeable and communicative architectural element. By considering it as the medium through which the communication between actor and audience - the Skype users - takes place, it is possible to say that it has features common to the concept defined as "Fourth wall" by Denis Diderot in 1758.

The fourth wall, diagrammatically shown in Figure 37, is "the imaginary wall that is at the front of the stage in a traditional three-walled set in a proscenium theatre, through which the audience sees the action in the play" (Penning, 2015).

Diderot stated that "whether you write or you act,

Figure 74: White Bear - Masked man and spectators.

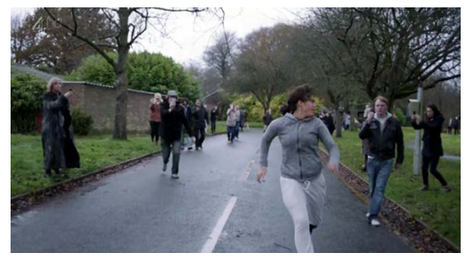


Figure 75: White Bear - Victoria being chased.

Figure 76: White Bear - The spectators.

Figure 77: White Bear - White Bear Justice Park.

think no more of the audience than if it had never existed. Imagine a huge wall across from the front of the stage, separating you from the audience, and behave exactly as if the curtain has never risen" (Diderot, 1758 cited in Cuddon, 1991, p.288).

He then added that there is a clear division as one side of the wall is fiction and the other one is reality. This statement does not hold if related to the Skype experience as fiction and reality are mixed and present in both sides of the wall. The division between audience and stage collapses into a single layer.

This cohesion is due to a break into the fourth wall. "Breaking the fourth wall" is a theatrical expression that represents the actors' awareness of their fictional role. This awareness leads the actor to talking directly to the audience in a theatre play or to looking straight into the camera while filming a movie, TV series or show. For Brown "it is often assumed that, for narrative filmmaking, this destroys the illusion of the story world and, by acknowledging the technology

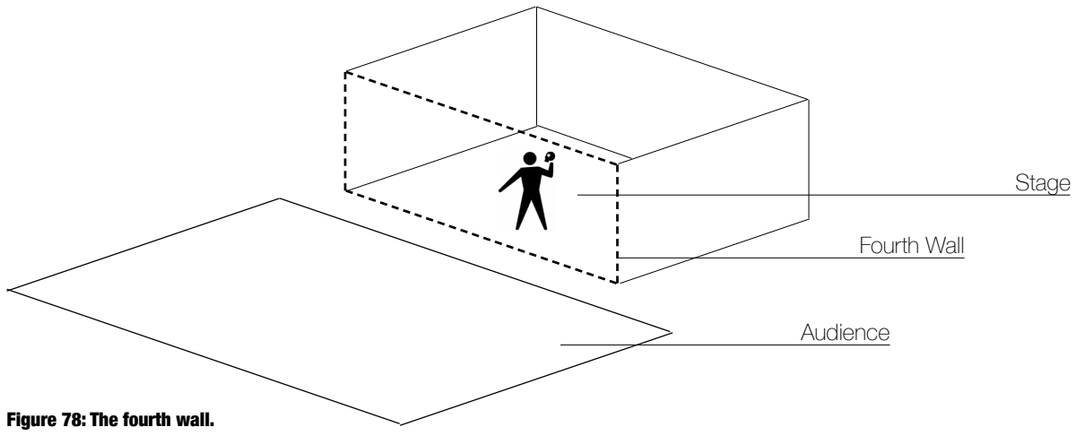


Figure 78: The fourth wall.

behind the cinema (i.e. the camera), distances us from the fiction" (Brown, 2012, p. vii)

If life during the Skype cohabitation becomes a play, it is precisely by breaking the fourth wall that we are able to communicate with our audience - in the specific case of my experiment, my parents in Italy. In this perspective, I decided to alter the actual configuration of my apartment shown in Figure 81 in order to actually stage it and allow my daily activities and life to become part of the play.

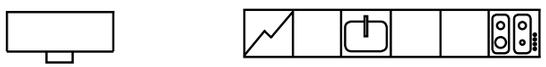
Firstly, I analysed the activities that I am used to sharing - both in shared real life and on Skype distance conversations. Waking up and falling asleep next to my partner, cooking with my mother and having lunch or dinner with my whole family are the main ones (Figure 82). Then I decided to abstract the features of these functions - bed, desk/table, kitchen - (Figure 83) and reorganise them.

In this redesigning process, I was inspired by the courtyard and the apartments surrounding in Alfred Hitchcock's Film *Rear Window*. This classic movie deals with the topics of observation and voyeurism with spatial organisation of the apartments being based on that.

L. B. "Jeff" Jeffries, the protagonist of the movie, is a professional photographer. After breaking his leg he is immobilised in a wheelchair in his apartment. Bored because of the inactivity, he starts observing his neighbours. Like Arne Svenson in his project *The Neighbors*, Jeffries becomes an expert voyeur. From his apartment a "movie library" (Jacobs, 2007, p.286) of daily activities is offered with each window becoming a screen for a different scene (Figures

Figure 79: Rear Window - windoes as screens for different scenes.

Figure 80: Rear Window - windoes as screens for different scenes.



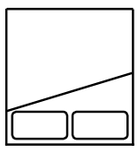


Figure 81: Actual configuration of my Rotterdam apartment.
Figure 82: Shared activities.
Figure 83: Abstraction of the shared activities.

79 and 80). The rooms seem to be squashed and the apartments features a “railroad” configuration composed of staged settings (ibidem, p.288). The whole façade becomes a fourth wall.

In the Baroque concept of theatrum mundi, the world is a stage, everybody is an actor, life is a play performance and “God is author, stage director and spectator” (Fischer-Lichte, 1997, p.219). Differently in my staged interior space, the role played by God has been replaced by the new digital apparatus, namely the projector and the webcam, and by the new architecture indirectly writing a new script for our daily life.

From the abstraction of shared daily activities from my interior I reorganised the space, staging them as if they were on a proscenium or a TV set as shown in Figure 84. In front of them I imagined the creation of a fourth wall represented by the wall I am projecting onto (Figure 85).

In all my new sets a projector and a webcam are placed on two opposite walls. Due to this configuration, each set is connected to another interior space belonging to my family and featuring the same characteristics (Figure 86). The webcam in my staged kitchen is filming my life in the room, while the projector in my mother’s kitchen is showing it in real-time. In the same way my kitchen is hosting the real-time projected image of my mother filmed by the webcam in her kitchen.

The same happens to my bedroom in Rotterdam that I share with my partner’s bedroom that is currently located in Brussels. Furthermore, it is also applied to my dining room that I share with my family’s one in

Scandiano, Italy.

One could argue that hence a super domestic interior is then created. It is a “unified” interior that merges three physical interior spaces altogether through the presence of a fourth wall integrated into the architecture.

The creation of a “unified” interior makes it impossible to turn the webcams and the projectors on and off the same way I cannot turn on and off my family and partner in real life. If I am in my bedroom and I am willing to talk to my mother while she is in the kitchen, like in a house where we are living together, I need to leave my room and walk into the kitchen to be finally able to talk to her (Figure 87). Likewise, if I am in my bedroom and wishing to be alone while my partner is in the same room, I need to ask him to leave the room.

The composition of the unified interior mirrors the need to share moments with our beloved ones apart. The design of the interior from the previous pages is tailored to my particular case of student residing far from his home country. More in general, I believe this project shows indirectly how technology impacted

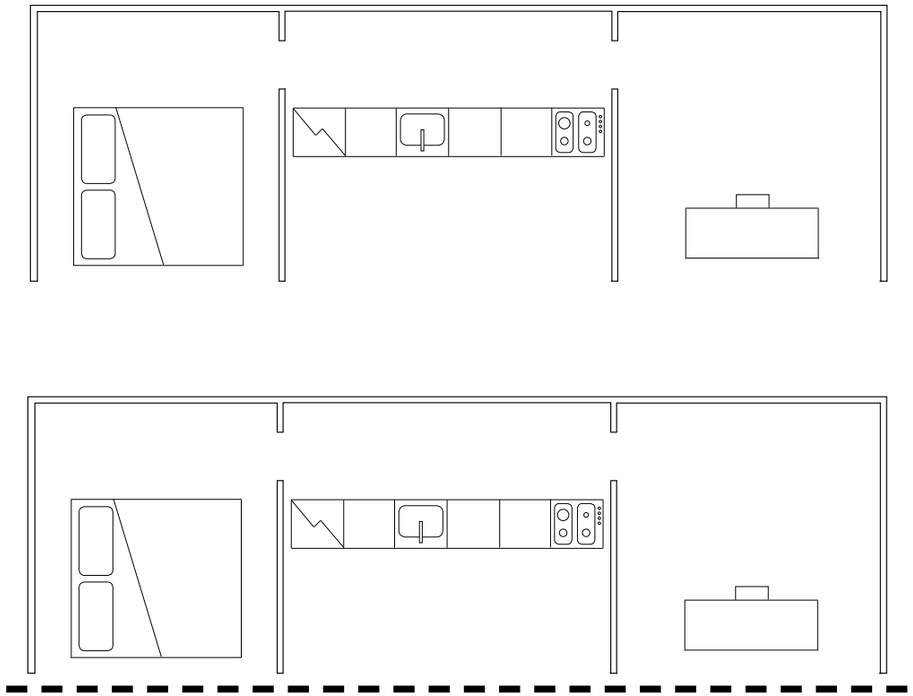


Figure 84: Staged interior.
Figure 85: Staged interior with fourth wall.

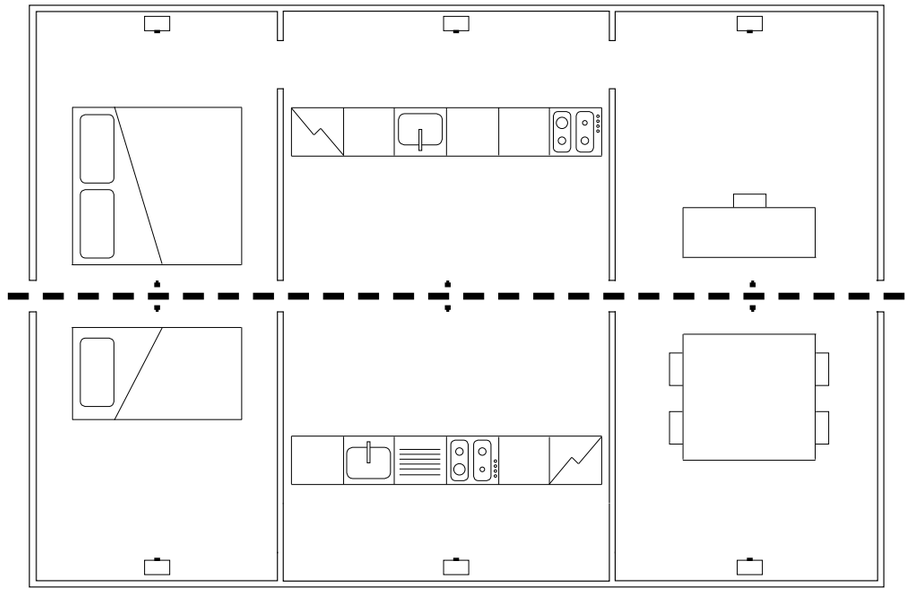


Figure 86: Staged unified interior.

migration over the last decades. “In particular, the personal computer, the cell phone and access to the Internet have become quotidian resources among migrants who use them to develop, maintain and recreate informal and formal transnational [cultural and social] networks in both the physical and the digital worlds [between home-land and host-land]” (Oiarzabal and Reips, 2012, p.1334).

Migrants are now using Twitter, Facebook, Skype and so forth to remain in contact with their families, to fill the social and emotional void of their “offline” life (Riddings and Geffen, 2006 cited in Swaby, 2013). This leads to a ‘digital diaspora’ - a ‘e-diaspora’, ’virtual diaspora’ - that “is an electronic migrant community whose interactions are made possible through ‘new’ technologies of communication” (ibidem).

Figure 87: Behaviours in the staged unified interior.

From the late eighties this desire of getting closer to our distant beloveds led to internet cafés or cybercafés appearing in many cities (Figure 88). “Cybercafés have multiplied in number in the nineties, […] especially in urban areas of high migrant population” (Gordano, 2013, p.140). These places offering free computers and a pay wi-fi connection emerged in a period when the technology to connect different countries was less affordable and accessible and its implication in the domestic space was still limited. Factors like a wider range of devices, wi-fi and the increasing affordability of domestic laptop computers led to many of these cafés closing and to our houses gradually turning into private cybercafés.

Figure 88: Internet café in Rotterdam.

To conclude, I consider my “unified” interior and its staged syntax a model for a permanent connection between two or more spaces - or countries - acting as one through the medium of Skype. Furthermore, considering the fourth wall as an architectural feature changes the way of designing and inhabiting the interior.

4

Final Design

To conceptualise the final design of *Detached Cohabitation* I am interested in creating an experience able to contain and show the crucial elements analysed in the theoretical and design research. There are three subjects that I am willing to exhibit.

Firstly, I am interested in presenting the idea of the unified staged interior described in chapter 3.3 *Staging my Interior* - a space that has the technology of the new Skype apparatus as a primary and essential tool for its design.

Secondly, I want to maintain the idea of detachment between user and device that has characterised the 24-hour-long cohabitation.

Lastly, I intend to expose how the distances and the physical limits and barriers between two or more spaces and people can be eroded by a technological medium.

On the basis of these points I started analysing how the technology-based cell room of *Black Mirror*'s second episode *Fifteen Million Merits* could be linked to one of the functions of the unified shared interior illustrated in Figure 86. In the screen-based room diagrammatically shown in Figure X, technology acts as an oppressive tool. Although completely covered by endlessly broadcasting screens, the room does not "open up" to other realities or spaces. On the contrary, it creates a sense of confinement and relegation. The cell is therefore perceived as an even smaller and more claustrophobic space.

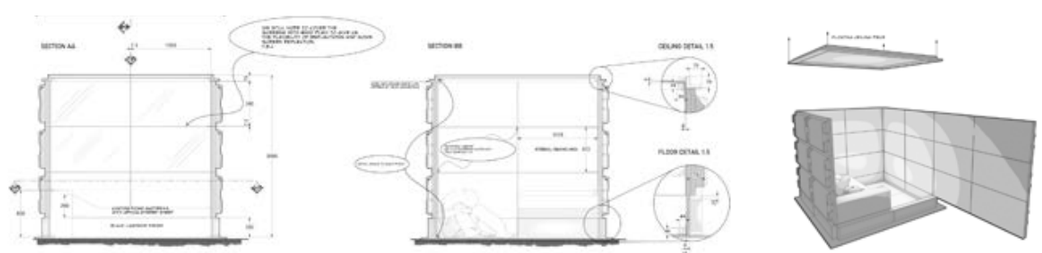


Figure 89: Fifteen Million Merits - screen-based cell room.

My goal is to subvert the oppressive and claustrophobic role technology plays within the cell structure visible in Figure 89. On the one hand I am interested in transforming technology into a tool that allows living simultaneously in multiple locations. On the other hand I intend to allow two or more people apart to live and experience two separate places as one unit.

These notions will be then applied to one of the space of the unified shared interior - i.e. the bedroom. It is indeed an intimate part of the house we usually share only with our beloved. It is where two partners can fall asleep together or where a grandfather can tell a bedtime story to his little grandson before going to bed and so forth.

Within these relationships I impose a distance in order to divide them. This separation is then translated into design by realising two identical rooms placed one next to the other with a wall dividing them (Figure 90). From the outside the two rooms appear as one unit as they are contained in one single continuous structure. These two spaces symbolise two rooms anywhere in the world.

Each room features a single bed the visitor is invited to lay on, a projector and a webcam - i.e. the Skype apparatus. The technological devices connect the two rooms. The webcam is attached to the ceiling,

precisely above the bed and it films downwards. The projector is placed on the floor and the light beam is directed to the ceiling above the bed as shown in Figure 91.

The webcam in one room is connected to the projector in the other room. The visitor lying on the bed can then see the image of the visitor in the second room being projected on the ceiling and interact with him or her. In my trials shown in Figure 92 specifically, I conceived one room as my bedroom in Rotterdam and the other one as my partner's bedroom in Brussels. However, since the presence of the two separated room is not visible from the outside, the visitors do not know where the person they see projected is located.

The two rooms are actually separated by a wall that would prevent any kind of interaction between the two people and spaces if the Skype conversation did not took place. By breaking it, the digital medium goes beyond the materiality of both this separation and architecture as a whole. Accordingly, the simultaneous cohabitation of the two rooms experienced by both persons leads to an entire erosion of the distance that might divide them.

In the two rooms the projectors and the webcams are always on, like the screens in *Black Mirror*'s cells. The shared rooms experience is activated only when both participants are in. The visitors have an active role and are given the opportunity to steer their own experience, as if they were complicit in the piece.

The interior of the two rooms recreates the same intimate atmosphere of a dark bedroom before bed

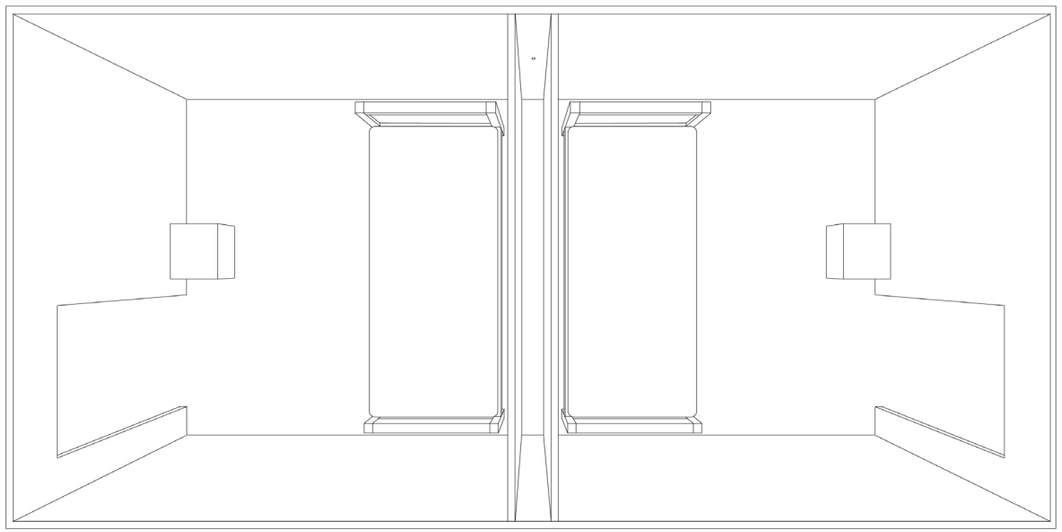


Figure 90: Top view of the two rooms.

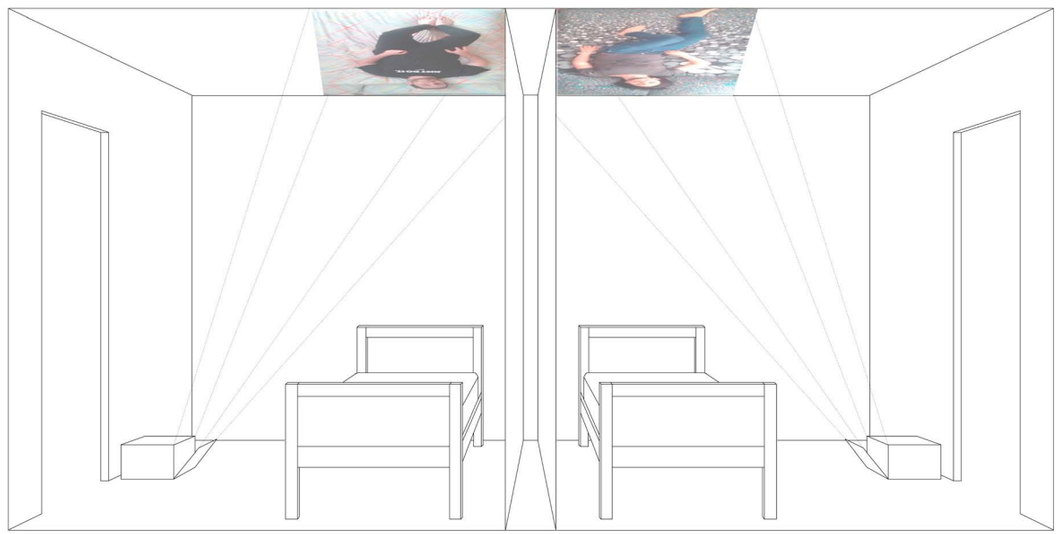


Figure 91: Side view of the rooms with the projected images on.

time, with the only light coming from a device - a smartphone, a tablet or, in this case, a projector.

Once outside the rooms, the two visitors are guided to the wall in the back of the rooms. Right in the middle, a spy hole let them see inside - nothing more than a dark and empty space is revealed, a space where nothing happens. As visible in Figure X, this space is located between the two walls separating the rooms and embodies the creation of a Thirdspace, the immaterial “channel” that goes beyond the physicality of the rooms and, more in general of architecture. This is shown in chapter 2.3 *Technology and the Perception of Distance*. This space also represents the 3D addendum that was introduced in my interior during the 24-hour-long Skype cohabitation.

Ultimately, above the spy hole, two mirrors give a slight hint of what is contained in the two rooms thus revealing the syntax of the experience to the visitors.

Figure 92 (next page): Projected images trial.

Conclusion

Detached Cohabitation aims to develop further awareness and sensitivity of the role that technology and new digital media play in architecture, and specifically in the domestic interior.

Technology challenges the ordinary concepts of materiality and distance. The project shows how technology allows the erosion of distances between spaces without physically displacing anything. Through the digital medium, distant places are put closer and people living apart can share the same experience and cohabit the same space. Accordingly each person belongs simultaneously to two or more locations.

The notion of materiality is no longer related to the tangibility of our physical presence itself due to the transmutation of the notion of spatial presence into telepresence that is based on the mediated perception of the environment.

Detached Cohabitation is framed into a shrinking process of technology, as devices are getting smaller and stronger adapted to the human body. By hacking the classic Skype apparatus - computer and webcam – with a projector, user and device are eventually detached.

The project also presents a circular process of technology. In the field of media, technology is underpinned by a certain ephemerality based on notions like signals, waves or the “internet of things”. To make technology accessible, it manifests through a series of tangible devices we have to interact directly with - radios, TVs, computers and much more. Besides creating a detachment into the user-device pair, the projected images of the Skype conversation take the notion of ephemerality back to technology. This is due to smaller importance of the source/device and its integration into architecture.

Furthermore, the project shows how the presence of the digital medium in the interior space alters the role of spatial partitions, namely walls and ceiling. What used to be a mere division now acts as a permeable surface, a communicative feature and an integral part of the architecture.

To conclude, the final design engages the visitor into an immersive spatial experience, where the subversion of the previously mentioned features - distance, materiality, spatial perception - can be directly experienced.

Timeline

The following timeline focuses on the main breakthroughs of technology in the domestic space. From the invention of the telephone to new smart devices, the timeline presents how technology has shaped the interior space and our behaviours within its walls.

1876: Invention of the Telephone
(Alexander Graham Bell)
“apparatus for transmitting vocal or other sounds telegraphically”
(Patent-Invent, 2014)

1927: Invention of the Television
(Philo Farnsworth)

1953: TV dinner
is a term used to define a prepackaged and frozen meal to be consumed in front of the TV

1876

1900: Invention of the Radio
(Reginald Aubrey Fessenden and Guglielmo Marconi)
it allows long distance radio transmission

1920
Appearance of the first radio designed for domestic purposes
and the first licensed broadcast radio station (KDKA)

1930
Charles Jenkins broadcasts the first TV commercial

1939: Radio-Newspaper Receiver for Home Use
“all necessary apparatus for receiving and printing news bulletins and pictures transmitted over the air”
(Popular Science, 1938)

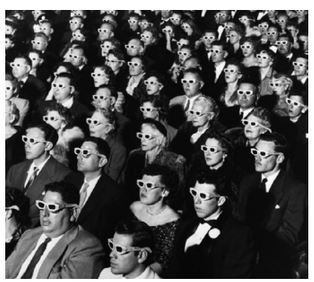
‘40s
the telephone becomes available for domestic purposes

1955: Remote control
allows viewers to switch channel and gives a degree of power over the device

1958: TV guides
are the number one magazines in the US

1963: Parabolic antenna
changes the city landscape

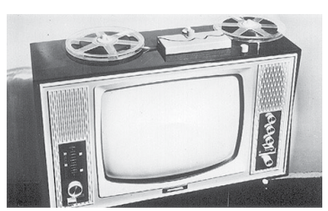
1965: Colour TV
replaces monochrome and black and white TVs



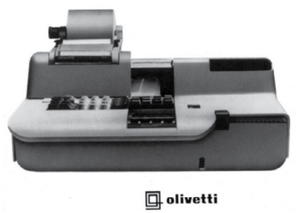
1956: First 3D movie
with 3D glasses used for a "stereoscopic film"

1960: 90 percent of American households have at least one receiver

1961: TV via satellite
allows communication over longer distances, including the transmission of TV signals



1963: Home video recorder
records video material on magnetic tape



1965: Programma 101
is thr first commercially produced programmable calculator, or "desktop computer" broadcaster

1969: the Moon landing
is anexample of how satellites enables television to become a truly global phenomenon - 600 million people watch the event

1969: ARPA
(Advanced Research Projects Agency)
is designed for research and government organizations

1970: Datapoint 2200
are the earliest devices that have resemblance to the PC - with a screen, keyboard, and program storage

1972: Video Cassette Recordings
allow people to watch their favorite programs on their own timetable

1973: Handheld mobile phone
(Martin Cooper)
Motorola is the first company to produce a handheld mobile phone - 1.1 kg and measured 23 cm long, 13 cm deep and 4.45 cm wide

1977: Commodore PET
are a single-board computers for interactive individual use - theyare defined the world's first personal computers

1982: Internet
the word "internet" is used for the first time

1995: Pay TV
sets an increasing prince for entertainment

‘90s: E-commerce
permits shopping directly from home

1990: online houses
are more than 20 percent of all U.S. houses

1996: One billion TV

1997: Wi-Fi
the whole domestic space can be connected

1999:
the number of Internet users worldwide reaches 150 million

‘00s: Flat screen TVs
are taking up a smaller part of the floor plan - from TV box to a flat surface that can be fixed to the wall

‘00s: 3D TVs
are now available for the domestic space and offer higher level of immersion

‘00s: Smart TVs
allow the personalisation of the show schedule based on personal preferences

2001:
more than 500 million computers were in use in 2002 and one billion PCs had been sold since the 70s

2003: Skype
(Dane Janus Friis and Swede Niklas Zennström)

2014
Amazon - shopping-at-home company - sold 63% of all books bought online and 40% of all books sold overall

2015

2008
the number of PC in use is more than one billion

2015
the average American home has 2.71 TVs and 2.55 people - there are more TVs in the average home than there are people

2005: video sharing
video-sharing website (such as YouTube), on-demand Internet streaming media (Netflix)

Bibliography

Alexander, L. (2013). *Black Mirror decodes our modern dread of technology.* [Blog] Boingboing. Available at: http://boingboing.net/2013/02/18/brookers-black-mirror-decode.html [Accessed 26 Apr. 2015].

Balkema, A. and Slager, H. (2004). *Artistic research*. Amsterdam: Rodopi.

Bentham, J. and Bowring, J. (1962). *The Works of Jeremy Bentham*. Vol 4. New York: Russell & Russell.

Berker, T. (2006). *Domestication of Media and Technology*. Maidenhead: Open University Press.

Bidgoli, H. (2010). *The Handbook of Technology Management*. Hoboken, N.J.: John Wiley & Sons.

Biggs, J. (2015). *Marketers Tricked SXSW Tinder Users With A Chatbot.* [Blog] techcrunch.com. Available at: http://techcrunch.com/2015/03/15/marketers-tricked-sxsw-tinder-users-with-a-chatbot/ [Accessed 31 May 2015].

Biocca, F. and Levy, M. (1995). *Communication in the age of virtual reality.* Hillsdale, N.J.: L. Erlbaum Associates.

Braun, J. (2014). *Transcendence*. [Blog] VueWeekly. Available at: http://www.vueweekly.com/film/transcendence/ [Accessed 27 May 2015].

Brooker, C. (2011). *Charlie Brooker: the dark side of our gadget addiction.* [Blog] theguardian.com. Available at: http://www.theguardian.com/technology/2011/dec/01/charlie-brooker-dark-side-gadget-addiction-black-mirror [Accessed 8 Mar. 2015].

Brown, T. (2012). *Breaking the Fourth Wall*. Edinburgh: Edinburgh University Press Ltd.

Cain Travis, M. (2014). *On Film and Philosophy: Transcendence and the Existence of the Soul.* [Blog] Hard-Core Christinanity. Available at: https://hcchristian.wordpress.com/2014/07/24/on-film-and-philosophy-transcendence-and-the-existence-of-the-soul/ [Accessed 27 May 2015].

Clang, J. (2010). *Being Together.* [online] Johnclang.com. Available at: http://www.johnclang.com/artwork/beingtogether.html [Accessed 4 Jan. 2015].

Consalvo, M. and Allen, M. (2005). *Internet research annual. At home with information*. New York: P. Lang.

Cramer, F. (2009). *Snake Rituals and Switching Circuits: The Blurring Lines Between Mass and Personal Communication, 'old' and 'new' Media.* Rotterdam: Hogeschool Rotterdam.

Cryer, P. (n.d.). *Telephones in the home in the 1940s, 50s and 60s. [Blog] 1900s*. Available at: http://www.1900s.org.uk/1940s50s-domestic-phones.htm [Accessed 2 Jun. 2015].

Cuddon, J. (1991). *A dictionary of literary terms and literary theory*. Oxford: Blackwell Reference.

Cudworth, A. (2014). *Virtual world design*. Boca Raton: CRC Press.

Debnath, N. (2011). *Review Of Black Mirror – The Entire History Of You.* [online] The Independent. Available at: http://blogs.independent.co.uk/2011/12/19/review-of-black-mirror-–-'the-entire-history-of-you'/ [Accessed 15 Feb. 2015].

Dourish, P. (2001). *Where the Action is.* Cambridge, Mass.: MIT Press.

Eco, U. (1986). *Travels in Hyperrealities.* San Diego: Harcourt Brace Jovanovich.

Farango, J. (2013). *Her is the Scariest Movie of 2013*. [Blog] New Republic. Available at: http://www.newrepublic.com/article/116063/spike-jonzes-her-scariest-movie-2013 [Accessed 15 Mar. 2015].

Fischer-Lichte, E. and Riley, J. (1997). *The Show and the Gaze of Theatre*. Iowa City: University of Iowa Press.

Gordano, C. (2013). *Mobile Phones in Migrant Contexts: Commercial Discourses and Migrants' Appropriations of ICT in Spain*. 1st ed. [ebook] Available at: http://obs.obercom.pt/index.php/obs/article/viewFile/612/595 [Accessed 5 Jun. 2015].

Griffith, S. (2013). *Back to the future: The living room has been transformed into a 'digital media hub' where families tweet, stream and post in front of the TV.* [Blog] Daily Mail. Available at: http://www.dailymail.co.uk/sciencetech/article-2381973/The-living-room-transformed-digital-media-hub-tweet-stream-post-TV.html [Accessed 3 Mar. 2015].

Haraway, D. (1991). *Simians, Cyborgs, and Women*. New York: Routledge.

Harrison, G., Haruvy, E. and Rutström, E. (2011). *Remarks on Virtual World and Virtual Reality Experiments*. Southern Economic Journal.

Hawthorne, C. (2014). *Spike Jonze's 'Her' a refreshingly original take on a future L.A.* [Blog] Los Angeles Times. Available at: http://articles.latimes.com/2014/jan/18/entertainment/la-et-cm-her-architecture-notebook/2 [Accessed 31 May 2015].

Hayles, K. (1999). *How We Became Posthuman*. Chicago, Ill.: University of Chicago Press.

Hollows, J. (2008). *Domestic cultures*. Maidenhead: Open University Press.

Hutchby, I. (2001). *Conversation and technology: From the Telephone to the Internet*. Cambridge, UK: Polity Press.

Kakalios, J. (2005). *The physics of superheroes*. New York: Gotham Books.

Kinder, J. (2012). *The Spectres of Simulacra: Hyperreality, Consumption as Ideology, and the (Im)Possible Future of Radical Politics*. 1st ed. [ebook] University of Northern British Columbia. Available at: https://www.academia.edu/1595967/The_Spectres_of_Simulacra_Hyperreality_Consumption_as_Ideology_and_the_Im_Possible_Future_of_Radical_Politics [Accessed 22 May 2015].

Kovel, T. (2014). *Technology has changed furniture.* [Blog] The Courier Journal. Available at: http://www.courier-journal.com/story/life/home-garden/2014/05/02/antiques-technology-changed-furniture/8608321/ [Accessed 6 Mar. 2015].

Jacobs, S. (2007). *The wrong house*. Rotterdam: 010 Publishers.

Janssen, C. (2014). *Artificial Intelligence (AI)*. [Blog] technopedia.com. Available at: http://www.techopedia.com/definition/190/artificial-intelligence-ai [Accessed 30 May 2015].

Johnson, C. (2002). *Beam me up, Scotty! - Teleportation, and Personal Identity.* Vienna: Austrian Ludwig Wittgenstein Society.

Lamb, A. (2010). *Modern Day Superpowers-Bilocation*. [Blog] Arts1090-The Cool Team. Available at: https://thecoolteam.wordpress.com/2010/03/27/modern-day-superpowers-bilocation/ [Accessed 20 May 2015].

Lambie, R. (2011). *Black Mirror episode 2 spoiler-free review: Fifteen Million Merits*. [Blog] Den of Geek. Available at: http://www.denofgeek.com/tv/10723/black-mirror-episode-2-spoiler-free-review-fifteen-million-merits [Accessed 20 Mar. 2015].

Loiperdinger, M. (2004). *Lumiere's Arrival of the Train. Cinema's Founding Myth*, vol. 4, num. 1. University of Minnesota Press.

Lucarelli, F. (2013). *Joe Colombo, Total Furnishing Unit (1971)*. [Blog] Socks Studio. Available at: http://socks-studio.com/2013/10/16/joe-colombo-total-furnishing-unit-1971/ [Accessed 29 May 2015].

Making the Modern World. (2004). *Home entertainment: Radio and television*. [online] Available at: http://www.makingthemodernworld.org.uk/stories/the_rise_of_consumerism/02.ST.03/?scene=5 [Accessed 6 Mar. 2015].

Marveldirectory.com, (2013). *Shadowcat*. [online] Available at: http://www.marveldirectory.com/individuals/s/shadowcat.htm [Accessed 24 May 2015].

McLuhan, M. (1964). *Understanding media*. New York, McGraw Hill Financial.

Meredith, P. (1998). *Hybridity in the Third Space*. 1st ed. [ebook] Available at: http://lianz.waikato.ac.nz/PAPERS/paul/hybridity.pdf [Accessed 31 May 2015].

Mooallem, J. (2010). *The Lost Tribe of RadioShack.* [Blog] wired.com. Available at: http://www.wired.com/2010/04/ff_radioshack/all/ [Accessed 30 May 2015].

Mulvey, L. (1975). *Visual Pleasure and Narrative Cinema*. Screen, 16(3), pp.6-18.

Oiarzabal, P. and Reips, U. (2012). *Migration and Diaspora in the Age of Information and Communication Technologies*. 1st ed. [ebook] London: Routledge. Available at: http://www.uni-konstanz.de/iscience/reips/pubs/papers/Oiarzabal_Reips_INTRO_JEMS_Special%20issue.pdf [Accessed 4 Jun. 2015].

Oxford Dictionary. (2010). *Oxford Dictionary of English*. London: Oxford

University Press.

Parsons, The New School for Design. (2014). *Mixed Reality Living Spaces*. [online] Available at: http://mfadt.parsons.edu/2014/project/mixed-reality-living-spaces [Accessed 4 Apr. 2015].

Panosetti, D. (2012). *Black Mirror. Distopie del vedere*. 1st ed. [ebook] Available at: https://www.yumpu.com/it/document/view/16417551/black-mirror-distopie-del-vedere-ocula [Accessed 12 Mar. 2015].

Patent-Invent, (2014). *Telephone Patents and Inventions*. [online] Available at: http://www.patent-invent.com/telephone_patents.html [Accessed 5 Jun. 2015].

Penning, C. (2015). *The Fourth Wall*. [Blog] Citelighter. Available at: http://www.citelighter.com/film-media/film-media/knowledgecards/the-fourth-wall [Accessed 1 May 2015].

Radio-Newspaper for Personal Use. (1938). Popular Science, (5).

Proust, M. and Treharne, M. (2003). *In search of lost time*. London: Penguin.

Proulx, M. (2015). *Queer Technologies of the Selfie: Radical Self-Imaging in the Online Performances of Ann Hirsch and Georges Jacotey*. [Blog] DPI. Available at: http://dpi.studioxx.org/fr/no/30-cybersurveillance/queer-technologies-selfie-radical-self-imaging-online-performances-ann [Accessed 4 Jun. 2015].

Reahard, J. (2013). *Second Life readies for 10th anniversary, celebrates a million active users per month*. [online] Engadget. Available at: http://www.engadget.com/2013/06/20/second-life-readies-for-10th-anniversary-celebrates-a-million-a/ [Accessed 22 Mar. 2015].

Riccio, J. (2013). *All The Web's a Stage: The Dramaturgy of Young Adult Social Media Use*. MA. Syracuse University.

Rouse, M. (2008). *What are real-time communications (RTC)*. [Blog] Search Unified Communications. Available at: http://searchunifiedcommunications.techtarget.com/definition/real-time-communications [Accessed 7 Mar. 2015].

Soja, E. W. (2000). *Postmetropolis*. Malden, MA: Blackwell Pub.

Svenson, A. (2012). *The Neighbors*. [online] arnesvenson.com. Available at: http://arnesvenson.com/theneighbors.html [Accessed 4 May 2015].

Swaby, N. (2013). *Digital Diaspora*. [Blog] Diasporic Constructions of Home and Belonging. Available at: http://www.itn-cohab.eu/wiki/digital-diaspora [Accessed 5 Jun. 2015].

Tsjeng, Z. (2014). *Berlin Grindr art installation shut down after protests*. [Blog] dazed.com. Available at: http://www.dazeddigital.com/artsandculture/article/22076/1/berlin-grindr-art-installation-shut-down-after-protests [Accessed 7 May 2015].

Vegter, W. (2009). *Camillo Olivetti*. [Blog] Available at: http://wvegter.hivemind.net/abacus/CyberHeroes/Olivetti.htm [Accessed 30 May 2015].

Verhoeven, D. (2014). *Wanna Play?*. [online] driesverhoeven.com. Available at: http://www.driesverhoeven.com [Accessed 7 May 2015].

Yoshida, E. (2013). *Black Mirror, Episode 3, The Entire History of You: Total Redo.* [online] Grantland. Available at: http://grantland.com/hollywood-prospectus/black-mirror-episode-3-the-entire-history-of-you-total-redo/ [Accessed 15 Feb. 2015].

Reference to conversations with Florian Cramer, Aymeric Mansoux, Füsun Türetken conducted between January and May 2015.

Filmography

Black Mirror - Fifteen Million Merits. (2011). [episode in a TV series] Charlie Brooker.

Black Mirror - The Entire History of You. (2011). [episode in a TV series] Charlie Brooker and Jesse Armstrong.

Black Mirror - Be Right Back. (2013). [episode in a TV series] Charlie Brooker.

Black Mirror - White Bear. (2013). [episode in a TV series] Charlie Brooker.

Ex Machina. (2015). [film] Alex Garland.

Her. (2013). [film] Spike Jonze.

Rear Window. (1954). [film] Alfred Hitchcock.

Transcendence. (2014). [film] Wally Pfister.

Illustration Credits

Figure 1: *Family sitting around the radio.* (n.d.). [image] Available at: http://www.masterfile.com/stock-photography/image/846-02796720/1940s-FAMILY-MAN-FATHER-WOMAN-MOTHER-BOY-SON-TWO-GIRLS-DAUGHTERS-SITTING-TOGETHER-LISTENING-TO-RADIO [Accessed 2 Mar. 2015].

Figure 2: *Family listening to the radio while doing other activities.* (n.d.). [image] Available at: http://www.sospirando.altervista.org [Accessed 2 Mar. 2015].

Figure 3: *Family watching TV.* (n.d.). [image] Available at: http://www.gettyimages.ca/detail/photo/family-watching-television-in-the-living-high-res-stock-photography/86002839 [Accessed 6 Mar. 2015].

Figure 4: *Hugo Gernsback watching a 1.5 inch square television in August 1928.* (1933). [image] Available at: http://arstechnica.com/tech-policy/2010/05/ralph-124c-41-a-century-later/ [Accessed 1 Mar. 2015].

Figure 5: Zenith Radio Corporation, (1950). *"Lazy Bones": The First TV Remote Control*. [image] Available at: http://www.factfixx.com/2011/08/17/lazy-bones-the-first-tv-remote-control/ [Accessed 2 Mar. 2015].

Figure 6: Busani M. (2015). *Evolution of the syntax of the living room based on the increasing dimension of the screen and on the appearance of the remote control.* [diagram] In possession of: The author: Rotterdam.

Figure 7: Busani M. (2015). *User-device interaction from the radio to the computer.* [diagram] In possession of: The author: Rotterdam.

Figure 8: *Programma 101 - the earliest mass-produced personal computers.* (n.d.). [image] Available at: http://www.storiaolivetti.it/percorso.asp?idPercorso=630 [Accessed 2 Jun. 2015].

Figure 9: *Home computer advertisement*. (n.d.). [image] Available at: http://www.globalnerdy.com/2008/08/18/the-way-computers-were-in-the-seventies/ [Accessed 3 Feb. 2015].

Figure 10: *Smartphones are a clear example of portable technology.* (2015). [image] Available at: http://www.docinforma.it/Upload/Modules/News_Article.php?ID=33366 [Accessed 7 Mar. 2015].

Figure 11: *Interior of Kisho Kurokawa's Nakagin Capsule Tower.* (n.d.). [image] Available at: http://www.archdaily.com/110745/ad-classics-nakagin-capsule-tower-kisho-kurokawa/l [Accessed 28 May 2015].

Figure 12: *Total Furnishing Unit by Joe Colombo.* (1971). [image] Available at: http://socks-studio.com/2013/10/16/joe-colombo-total-furnishing-unit-1971/ [Accessed 28 May 2015].

Figure 13: *Steve Mann, "the father of wearable computing".* (2012). [image] Available at: http://upload.wikimedia.org/wikipedia/commons/thumb/c/cc/SteveMann_30_years_of_WearableComputing_and_AR_in_everyday_life.png/1024px-SteveMann_30_years_of_WearableComputing_and_AR_in_everyday_life.png [Accessed 2 Jun. 2015].

Figure 14: *Michael Radford's Nineteen Eighty-Four*. (n.d.). [image] Available at: http://www.cb01.eu/orwell-1984-1984/ [Accessed 10 May 2015].

Figure 15: *François Truffaut's. Fahrenheit 451.* (n.d.). [image] Available at: https://nerdpopculture.wordpress.com/2013/07/23/10-film-distopici-che-se-non-li-hai-visti-chiamo-la-neuropolizia/ [Accessed 10 May 2015].

Figure 16: *Lana and Andy Wachowski's The Matrix.* (n.d.). [image] Available at: http://lifestyleofpeace.blogspot.nl/2015/02/what-is-matrix.html [Accessed 10 May 2015].

Figures 17-24: Screenshots from *Black Mirror - Fifteen Million Merits*. [Accessed 10 February 2015].

Figures 25-27: Screenshots from *Black Mirror - The Entire History of You*. [Accessed 10 February 2015].

Figure 28: *Tinder chat with Ex Machina's Ava*. (n.d.). [image] Available at: http://producerbooster.com/2015/03/16/sxsw-tinder-users-are-falling-for-a-sexy-robot-in-clever-ex-machina-marketing-stunt/ [Accessed 28 May 2015].

Figures 29-30: Screenshots from *Her*. [Accessed 10 February 2015].

Figure 31: *Theodore's apartment*. (n.d.). [image] Available at: http://archinect.com/mehruss/project/interiors-journal [Accessed 10 Mar. 2015].

Figure 32: *Avatar personalisation in Second Life*. (n.d.). [image] Available at: http://www.virtualworldsmagazine.com/second-life-e-morta-viva-second-life/ [Accessed 12 Apr. 2015].

Figure 33: *"Friends meeting" in Second Life*. (n.d.). [image] Available at:

http://www.repubblica.it/tecnologia/2014/05/25/news/second_life_il_ritorno_mondi_sempre_pi_reali_con_oculus_e_priovr-87142773/ [Accessed 12 Apr. 2015].

Figures 34-35-36: *Mixed Reality Living Spaces.* (2014). [image] Available at: http://mfadt.parsons.edu/2014/project/mixed-reality-living-spaces [Accessed 18 Apr. 2015].

Figure 37: *Ferdinand de Saussure's model of communication.* (1915). [image] Available at: http://www.jansvenungsson.com/images7/potsdam/potsd_iw12.html/ [Accessed 12 Apr. 2015].

Figure 38: Busani M. (2015). *Adaptation of Ferdinand de Saussure's model of communication*. [diagram] In possession of: The author: Rotterdam.

Figure 39: Busani M. (2015). *Communication evolution.* [diagram] In possession of: The author: Rotterdam.

Figure 40: Busani M. (2015). *Intangible channel created between the two physical spaces.* [diagram] In possession of: The author: Rotterdam.

Figure 41: Busani M. (2015). *Google Maps Street View in an exterior.* [screenshot] In possession of: The author: Rotterdam.

Figure 42: Busani M. (2015). *Google Maps Street View in an interior*. [screenshot] In possession of: The author: Rotterdam.

Figures 43-44: Clang, J. (2010). *Being together.* [image] Available at: http://www.johnclang.com/artwork/beingtogether.html [Accessed 30 Jan. 2015].

Figure 45: Busani M. (2015). *Blurring distances.* [diagram] In possession of: The author: Rotterdam.

Figure 46: Busani M. (2015). *24-hour-long Skype cohabitation*. [image] In possession of: The author: Rotterdam.

Figure 47: Busani M. (2015). *Rotterdam apartment with spatial addendum.* [diagram] In possession of: The author: Rotterdam.

Figure 48: Busani M. (2015) *Spatial perception during the 24-hour-long Skype cohabitation.* [diagram] In possession of: The author: Rotterdam.

Figure 49: *X-men superhero Shadowcat.* (n.d.). [image] Available at: http://shadowcatlovesseries.blogspot.nl/2012/07/autoreverse-fumettofilmtelefilm-prima.html [Accessed 29 May 2015].

Figure 50: *Star Trek's Transporter.* (n.d.). [image] Available at: http://www.livescience.com/34005-science-fiction-fact-teleporters-beam.html [Accessed 29 May 2015].

Figure 51: *Star Trek's Transporter room*. (n.d.). [image] Available at: http://en.memory-alpha.wikia.com/wiki/Galaxy_class [Accessed 29 May 2015].

Figures 52-53: Screenshots from *Transcendence*. [Accessed 25 May 2015].

Figure 54: *Scene from L'arrivée d'un train en gate de La Ciotat.* (n.d.). [image] Available at: http://it.paperblog.com/squarci-di-settima-arte-le-origini-e-il-cinema-muto-1596261/ [Accessed 29 May 2015].

Figures 55-56-57: *The Neighbors*. (2013). [image] Available at: http://arnesvenson.com/theneighbors.html [Accessed 14 May 2015].

Figures 58-59: *Wanna Play?*. (2014). [image] Available at: http://www.driesverhoeven.com/en/project/wanna-play [Accessed 14 May 2015].

Figures 60-63: Screenshots from *Black Mirror - Be Right Back*. [Accessed 10 April 2015].

Figure 64: Busani M. (2015) *Trial 1 (door - projected image).* [image] In possession of: The author: Rotterdam.

Figure 65: Busani M. (2015) *Trial 2 (mirror - projected image)*. [image] In possession of: The author: Rotterdam.

Figure 66: Busani M. (2015) *Trial 3 (rotated surfaces - projected image).* [diagram] In possession of: The author: Rotterdam.

Figures 67-68: Busani M. (2015) *Trial 3 (rotated surfaces - projected image).* [image] In possession of: The author: Rotterdam.

Figure 69: Busani M. (2015) *Trial 4 (sharpness - projected image).* [diagram] In possession of: The author: Rotterdam.

Figures 70-71: Busani M. (2015) *Trial 4 (sharpness - projected image).* [image] In possession of: The author: Rotterdam.

Figure 72: *JenniCam* (n.d.). [image] Available at: http://www.quazoo.com/q/Jennifer_Ringley [Accessed 5 Jun. 2015].

Figures 73-77: Screenshots from *Black Mirror - White Bear.* [Accessed 10 April 2015].

Figure 78: Busani M. (2015) *The fourth wall*. [diagram] In possession of: The author: Rotterdam.

Figures 79-80: Screenshots from *Rear Window.* [Accessed 10 April 2015].

Figure 81: Busani M. (2015). *Actual configuration of my Rotterdam apartment.* [diagram] In possession of: The author: Rotterdam.

Figure 82: Busani M. (2015). *Shared activities.* [diagram] In possession of: The author: Rotterdam.

Figure 83: Busani M. (2015). *Abstraction of the shared activities.* [diagram] In possession of: The author: Rotterdam.

Figure 84: Busani M. (2015).*Staged interior.* [diagram] In possession of: The author: Rotterdam.

Figure 85: Busani M. (2015). *Staged interior with fourth wall.* [diagram] In possession of: The author: Rotterdam.

Figure 86: Busani M. (2015). *Staged unified interior.* [diagram] In possession of: The author: Rotterdam.

Figure 87: Busani M. (2015). *Behaviours in the staged unified interior.* [diagram] In possession of: The author: Rotterdam.

Figure 88: *Internet café in Rotterdam*. (n.d.). [image] Available at: http://contemporary-home-computing.org/still-there/belhuizen.html [Accessed 5 Jun. 2015].

Figure 89: *Fifteen Million Merits - screen-based cell room.* (2011). [image] Available at: http://www.creativereview.co.uk/cr-blog/2011/december/behind-the-scenes-of-black-mirror [Accessed 5 Feb. 2015].

Figure 90: Busani M. (2015). *Top view of the two rooms.* [diagram] In possession of: The author: Rotterdam.

Figure 91: Busani M. (2015). *Side view of the rooms with the projected images on.* [diagram] In possession of: The author: Rotterdam.

Figure 92: Busani M. (2015). *Projected images trial.* [image] In possession of: The author: Rotterdam.

Timeline (listed according to the timeline chronological order)

Alexander Graham Bell demonstrates speaking into the telephone using a model prototype in 1876. (1876.). [image] Available at: http://archive.wired.com/science/discoveries/news/2008/03/dayintech_0310 [Accessed 4 Jun. 2015].

Print the News, Right In Your Home!. (n.d..). [image] Available at: http://www.smithsonianmag.com/history/print-the-news-right-in-your-home-68822637/?no-ist [Accessed 4 Jun. 2015].

The invention of TV dinners. (n.d..). [image] Available at: http://www.mortaljourney.com/2010/11/1950-trends/tv-dinners [Accessed 4 Jun. 2015].

LG presenta la storia del telecomando TV. (n.d..). [image] Available at: http://news.tecnozoom.it/tv-lcd/lg-presenta-la-storia-del-telecomando-tv-foto-post-32089.html [Accessed 4 Jun. 2015].

LIFE at the Movies: When 3-D Was New. (n.d..). [image] Available at: http://time.com/3878055/3-d-movies-revisiting-a-classic-life-photo-of-a-rapt-film-audience/ [Accessed 4 Jun. 2015].

Home video recorder. (n.d..). [image] Available at: http://ceta.ufm.edu/?p=665 [Accessed 4 Jun. 2015].

Electronics/ TV of the 1950s. (n.d..). [image] Available at: http://www.vintageadbrowser.com/electronics-ads-1950s/66 [Accessed 4 Jun. 2015].

NASA's Historic Apollo 11 Moon Landing in Pictures. (1969). [image] Available at: http://www.space.com/15864-nasa-apollo-11-moon-landing-photos.html [Accessed 4 Jun. 2015].

Datapoint 2200. (n.d..). [image] Available at: https://www.pinterest.com/crescentcityweb/vintage-computers/ [Accessed 4 Jun. 2015].

*Motorola DynaTac8000. (n.d.). [image] Available at: http://www.androidare.it/buon-comp*leanno-cellulare/ [Accessed 4 Jun. 2015].

The first PC. (n.d.). [image] Available at: http://www.wikiwand.com/en/Personal_computer [Accessed 4 Jun. 2015].

E-commerce. (n.d..). [image] Available at: http://smartmoney.startupitalia.eu/47395/e-commerce/le-commerce-cambia-pelle-airbnb-ci-costera-meno-skype-piu/ [Accessed 4 Jun. 2015].

Flat Screen. (n.d.). [image] Available at: http://www.houzz.com/photos/modern/flat-screen-TV-entertainment-center- [Accessed 4 Jun. 2015].

Smart LED TV. (n.d..). [image] Available at: https://www.conforama.it/multimedia/tv/tv-led/?page=6 [Accessed 4 Jun. 2015].

3D glasses. (n.d..). [image] Available at: http://www.nextme.it/tecnologia/realta-aumentata/631-3d-microsoft-mette-a-punto-un-nuovo-schermo-addio-occhialini-fastidiosi [Accessed 4 Jun. 2015].

Skype Log In. (2015). [image] Available at: https://login.skype.com/login?setlang=it [Accessed 4 Jun. 2015].

YouTube App. (n.d..). [image] Available at: http://android.giorgiotave.it/android-chat-live-youtube/1353 [Accessed 4 Jun. 2015].