How Opening Everyone's Windows Eventually Locked Everyone In

A Critical Examination of Three Decades of Digital Technology

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Introduction

Over the time span of three decades, digital technology has gained a strong foothold in society on many levels. By digitizing work processes and creating a high-tech global economy, we have entered the Information Age. Much discussion is taking place about this role of technology in our everyday lives. At the heart of most of these discussions lies the broader sociotechnical discussion between technological determinism and social constructivism. Technological determinists are convinced that technology determines the way society and individuals develop. They regard technology as the driving force behind social structures and cultural values. A change in technology will therefore equally cause a change in society. Social constructivists on the other hand, believe that individual behavior is only determined by social interactions and constructs, like customs, expectations or education.

In this thesis, I would like to claim that digital technology is increasingly determining our social interactions. Where the early digital developments of the twentieth century were met with great enthusiasm, it seems to me that the new millennium has introduced a growing pessimism towards technology's influence on social human interaction. In addition, I would like to suggest that not only has technology come to strongly determine our social behavior, it has also downgraded our social standards.

I will examine my hypothesis by critically evaluating the ideas of three theorists: Sherry Turkle, Jaron Lanier and Douglas Rushkoff. They each focus on the interaction between society and technology and have furthermore all been engaged in the sociotechnical debate since the early digital developments in the twentieth century. In this thesis I will discuss in detail how their thinking has evolved over the years and how their ideas relate to one another. While both Lanier and Rushkoff have written about the interaction between technology and social, technical and economic factors, this thesis will mainly focus on the social aspects. Lanier has for instance covered the economic effects of Web 2.0 and Rushkoff has written a book called *Life Inc., How the World Became a Corporation and How to Take It Back*, in which he discusses, as the title already suggests, how business corporations have become dominant factors on many levels of our contemporary lives.[1] However, these economic issues will not be further discussed, as the main

[1] <http://www.rushkoff.com/life-inc/> (20 August 2014).

focus lies with the interaction between technology and social tendencies.

This thesis is furthermore divided into two chapters; the first chapter – called “Leaning Into the Future” – focuses on the digital developments during the twentieth century. The second chapter – “Standing Up Into the Present” – covers the further developments in the twenty-first century. Each chapter begins with a comprehensive overview of the most prominent digital developments, followed by three sections that cover themes central to the respective time period.

The themes of the two chapters stand in sharp contrast to one another. By looking at the ideas of Turkle, Lanier and Rushkoff, I have found that the digital technologies of the twentieth century caused people to focus on exploring their own identity and abolishing existing boundaries. In the twenty-first century however, these values have rotated and turned into a diminishing notion of authenticity and sense of freedom.

However, before these developments will be outlined, Turkle, Lanier and Rushkoff will be briefly introduced.

§ 1 Sherry Turkle

Sherry Turkle is a sociologist and psychologist. She received a joint doctorate in sociology and personality psychology from Harvard University and is a licensed clinical psychologist. In the early 1980s she joined the faculty at Massachusetts Institute of Technology to study computer culture. The reason Turkle pursued this unconventional trajectory, was that she sensed that people started to describe their own behavior in computational terms.[2] Being a professional psychologist, she was interested in these expressions, for she thought they signified an altered understanding about individuality. She thought that computers were starting to change the way people thought about themselves, and that this idea revealed itself in the expressions people used. She deployed this interest further in her first book; *The Second Self: Computers and the Human Spirit*, first published 1984. In this book, she states that the computer presents itself as an intelligent tool and that it shows similarities with the human mind. She thus regarded the computer as a presence that prompted self-reflection. She noticed how technological concepts like 'debugging' and 'programming' were being picked up as metaphors to describe certain psychological processes. Turkle conducted numerous interviews with children and adults and reported her findings in *The Second Self.*

After the publication of *The Second Self*, Turkle's focus shifted from the one-on-one relationship people had with their computer, to the role the computer played as an intermediary for social relationships. Turkle described and analyzed these new developments in her second book *Life on the Screen: Identity in the Age of the Internet*, published in 1995.

Throughout the years, the human-technology interaction stayed the central topic of her work. In 2001 Turkle founded the MIT Initiative on Technology and Self, where she is presently still working as an Abby Rockefeller Mauzé Professor of the Social Studies of Science and Technology in the Program Science, Technology, and Society. In 2011 she wrote her most recent book, called *Alone Together: Why We Expect More From Technology And Less From Each Other.* In this book, Turkle discusses how the most recent digital technologies have influenced human interaction. Just as in her previous books, Turkle's method of research for *Alone Together* is ethnographic and clinical. She has spent a lot of time with computer scientists, computer hobbyists and children and adults who were spending time with smartphones, social media websites, 3D virtual worlds and sociable robots.

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[2] S. Turkle, *Alone Together: Why We Expect More From Technology And Less From Each Other* (New York: Basic Books, 2011), p. ix

These interviews caused her to conclude that people favored their relationship with their devices over face-to-face contact. She saw that we have become insecure about our social interactions, and choose to communicate via digital mediums instead. She furthermore senses that relationships with robots are on the verge of becoming a substitute for relationships with real people. All this is caused by the underlying 'robotic moment': our present moment in time in which we live in a state of emotional and philosophical readiness towards artificial intelligence. Turkle states that we have accepted – and even embraced – the idea that robots may be able to engage in meaningful interactions.[3] This also extends to our usage of networked devices. According to Turkle we have reached a point where we favor machine-mediated communication and have grown insecure by spontaneous, face-to-face contact.[4]

[3] Turkle, *Alone Together*, p. 9.

[4] Turkle, *Alone Together*, p. 11.

§ 2 Jaron Lanier

Jaron Lanier is, unlike Turkle and Rushkoff, not an academic. He started his career as a computer scientist and has notoriously been called an 1980s "Silicon Valley digital-guru rock star"[5]. This characterization has been inspired by his remarkable dreadlocks, his fascination with exotic musical instruments, his record label contract, as well as the fact that he is an influential critical thinker and a pioneer in the field of Virtual Reality. He began his colorful career as a computer scientist in 1983, when he started working for Atari Labs, a company specialized in developing video games. In 1984 he left Atari and founded his own company, called 'Visual Programming Languages' (VPL).

During this time, Lanier was particularly concerned with the developments of computer-simulated experiences. In 1986 he coined the term 'Virtual Reality' to describe these simulated environments.[6] Virtual Reality is an immersive, interactive system based on computable information that is constantly updated. As an effect, the immersed person imagines himself in a different, three-dimensional environment. In this virtual environment, the person is not only digitally presented with images of a different environment, but his movements and senses are also virtually recreated.

During the 1980s, Jaron Lanier was part of the first 'digerati'; the elite of the computer industry. These people were digital futurists, true believers in the promise of the digital world. Their efforts resulted in numerous technological achievements, with the popularization and expansion of the World Wide Web as one of the most prominent designs. Lanier has been an insider of this community for thirty years and has in 2010 even been named one of the hundred most influential people in the world by Time Magazine.[7] From 1984 to 1990, VPL Research created a range of implementations. They developed the first avatars, as well as applications for surgical simulations, vehicle interior prototyping and virtual sets for television production.[8] After VPL Research, Lanier started working on prototypes of tele-immersion for Internet2, an international community of leaders in research, academics, and government who create and collaborate via innovative technologies.[9]

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[5] B.S. Hall, 'Jaron Lanier got everything wrong', *readwrite*, 13 March 2013 <http://readwrite.com/2013/03/13/jaron-lanier-got-everything-wrong#awesm=~oIG03siCyxdscg> (12 October 2014).

[6] M. Heim, *Virtual Realism* (New York, Oxford: Oxford University Press, 1998), p. 5

[7] D. Reed, 'Jaron Lanier. The 2010 TIME 100', *TIME*, 29 April 2010 <http://content.time.com/time/specials/packages/article/0,28804,1984685_1984745_1985490,00.html> (12 October 2014).

[8] <http://www.jaronlanier.com/general.html> (28 July 2014).

[9] <http://www.internet2.edu/about-us/> (28 July 2014).

After Internet2, Lanier started working for Microsoft Research as an interdisciplinary scientist.[10]

However, since the turn of the century, Lanier has been having serious doubts about the course these digital developments have taken. In 2010 his first book was published, called *You Are Not A Gadget*. In this book, he expresses his concerns about the modern design of the internet. He criticizes Web 2.0 in particular, which is a collective noun for websites whose designs are not static but 'open'. These websites allow users to interact and collaborate with each other via social media pages or by contributing to websites that are built on user-generated content. Lanier states that Web 2.0 diminishes the notion of identity and personhood. For example, he regards social media websites as rigid frameworks that suppress individual creativity and authenticity.

Lanier argues that Web 2.0 promotes anonymous comments and contributions and creates fragmentary content. He claims that this input is used to create large amounts of data, which in turn will serve as the basis for the 'Singularity'; the idea that one super-consciousness will eventually replace all individual identities. This consciousness would be the product of all individual contributions to the world wide web. Lanier is himself sceptical that the Singularity will one day come into existence because he is not convinced of the fact that human beings are replaceable.

His ideas and concepts are gradually being acknowledged by various institutions. This year, his most recent book won the Harvard's Goldsmith Book Prize.[11] And he has recently also received the 2014 Peace Prize of the German Book Trade, due to his recognition of these inherent risks of the digital world.[12]

[10] <http://www.jaronlanier.com/general.html> (28 July 2014).

[11] <http://www.jaronlanier.com/general.html> (10 November 2014).

[12] 'Jaron Lanier to Receive the 2014 Peace Prize of the German Book Trade' *Friedenspreis des Deutschen Buchhandels* < http://www.friedenspreis-des-deutschen-buchhandels.de/445941/?mid=800945> (10 November 2014).

§ 3 Douglas Rushkoff

The third theorist to be discussed is Douglas Rushkoff. He has a long resumé; after receiving an MFA in Directing from California Institute of the Arts, he finished a post-graduate fellowship from The American Film Institute. He then got a PhD in New Media and Digital Culture from Utrecht University, by writing a dissertation on new media literacies. In the course of his career he has published fourteen books: eleven non-fiction books, two novels and a graphic novel. He has also directed three award-winning documentaries for PBS Frontline. He furthermore gives lectures at universities around the world and is a frequently seen guest in various tv-programs and conferences. All his studies, as well as his publications and lectures, revolve around the interplay of media, society and economics. Because not all of his work can be discussed at length in this thesis, only the books that most clearly highlight his ideas will be analyzed. By comparing his early work with his ideas over the last few years, one is able to grasp the development of his line of thinking during this period of time.

Like Turkle and Lanier, Rushkoff has been engaged in the socio-technical debate since the early developments of the World Wide Web. In 1994 he wrote his first book, called *Cyberia: Life in the Trenches of Hyperspace*, in which he describes the first digital natives of the cyberpunk movement. Rushkoff argued that these digital natives would be able to open up the existing media landscape by creating new images or reorganizing the ones that were presented to them. Instead of passively watching television, they could go online and share different stories. According to Rushkoff, by co-constructing the media landscape, we would be able to escape the established authoritative control systems.

While Rushkoff still believes in this principle, he has witnessed how people have been pushed into a contrary direction. Digital technology has, among other things, influenced how we interact with each other and how we experience time. He states that we have turned into ‘digifrenics’ in trying to divide our attention between different digital sources. And the authority he thought we would gain in the twentieth century, has been handed over to the computer programmers instead. He therefore argues that we should develop a digital literacy, so that we are able to escape the authoritative control of technology.

PART ONE

Leaning Into the Future

§ 4 Digital Developments in the Twentieth Century

The computer originally started off as a calculator, invented in 1623 by Wilhelm Schickard. This calculator was a mechanical six-bit 'counting clock', that was able to add and subtract. During the following centuries, other scientists picked up Schickard's invention and assigned it additional functionalities. In the nineteenth century, Charles Babbage had managed to make it into a programmable machine, which in turn formed the foundation for the 'Turing Machine', designed by Alan Turing in the twentieth century. This machine worked according to an algorithmic logic that could perform various functions. The Turing Machine resulted in the first modern digital electronic programmable computers taken into production in the 1940s.[13]

A few decades later, in 1981, the 'Apple Lisa' was build. This was the first computer – built by Steve Job's Apple Computer company – with a Graphical User Interface (GUI) and a Windows, Icons, Mouse and Pull-down Menus (WIMP) environment. This graphical interface was extremely user-friendly because it concealed the complex underlying technological system.[14] Users now did not have to type commands themselves, but could give instructions to the computer by navigating the windows, icons and menus. In 1983 Microsoft launched its own version of a GUI/WIMP environment with 'Windows', thereby replacing their command-line operating system MS DOS. When in 1990 version 3.0 was introduced, Windows experienced an unprecedented popularity.[15]

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[13] A. van der Weel, *Changing Our Textual Minds. Towards A Digital Order of Knowledge* (Manchester University Press, 2011). p. 110-111.

[14] van der Weel, *Changing our Textual Minds*, p. 128.

[15] van der Weel, *Changing our Textual Minds*, p. 131-132.

Sherry Turkle states that during the 1980s, most personal home computers were owned by computer hobbyists.[16] Statistics assembled by The United States Census Bureau – a principal agency of the U.S. Federal Statistical System – show that computer ownership experienced a sudden exponential growth. In 1984, 8.2 percent of all households in the United States owned a personal computer. In the year 2000, this percentage had grown to 51%.[17]

One of the reasons the computer grew in popularity, was the commercialization of the World Wide Web in 1993. The roots of this expansive network go back to the early 1970s, when the Advanced Research Projects Agency Network (ARPANET) allowed clients to give instructions to a host computer. In 1971, an e-mail function was implemented, and soon after that, various existing networks were linked together into a single network; the Internet. At that stage, the internet was mainly used by scientific and military organizations. In the two decades that followed, the network was gradually used by other parties as well.

However, it was the introduction of the World Wide Web 1991 that truly offered interesting possibilities for the mainstream audience. This system of interlinked hypertext documents allowed internet users to share texts, images, videos and other multimedia.[18] This sharing system offered by the World Wide Web, facilitated a new kind of connectivity between computer users around the world. Users began to engage in online chatting; sending each other digital messages that were received in real time. The early World Wide Web furthermore offered the possibility to maintain personal web pages, created according to one's own design and content.

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[16] Turkle, *Alone Together*, p. ix.

[17] T. File, 'Computer and Internet Use in the United States', *Census*, May 2013, p.2.

[18] van der Weel, *Changing our Textual Minds*, p. 135.

§ 5 Exploration of the Self

In this section I will look at the consequences of the early networked computer for people's perception of themselves. Both Sherry Turkle and Jaron Lanier sensed that the developments outlined in the previous section fueled personal introspection, as well as new expressions of creativity. Sherry Turkle published her first book called *The Second Self: Computers and the Human Spirit* in 1984, in which she analyzes how the computer has affected the way people think about themselves. I will now explain in more detail how, according to Turkle, the computer managed to evoke social behavior. Turkle identified three tendencies; the computer evoked self-reflection, it created a 'holding power' which drew people towards the computer, and finally it bore the ability to make us feel less alone.

First, the computer evoked self-reflection because the machine showed similarities with the intelligence of the human mind and therefore raised fundamental questions about the human mind. People began wondering whether machines possessed the same kind of intelligence as humans. The workings of the computer presented no easy analogies with other objects or processes, except for people and their mental processes.[19] This pressed the question on how the human mind is different from the workings of a computer. The introduction of intelligent robots further amplified this new attitude. Turkle stated that the Artificial Intelligence community was building a new paradigm for thinking about people.[20] Where Copernicus and Darwin had initiated a different perspective on the position of humanity in relation to the universe, Artificial Intelligence had created an impulse to question humanity and the self.[21] Being a psychologist, Turkle saw huge potential in this prompted self-reflection: 'Psychoanalysis relies on the analytic experience, the 'talking cure', to defamiliarize the mind to itself and thus reveal what would otherwise be hidden in the light.'[22] This was especially the case for adolescents, as they are constantly trying to find out who they are by using different materials, like music and clothing. The computer could become a similar tool for discovering and defining one's identity.

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[19] S. Turkle, *The Second Self: Computers and the Human Spirit* (New York: Simon and Schuster, 1984), p. 27.

[20] Turkle, *The Second Self,* p. 267.

[21] Turkle, *The Second Self* , p. 308-309.

[22] Turkle, *The Second Self,* p. 3.

When the internet went mainstream in 1993, the exploration of the self got taken to another level. People began to experiment with the creation of new identities in online virtual realities, thereby exploring their own identity. Turkle described and analyzed these new developments in her second book *Life on the Screen: Identity in the Age of the Internet*, published in 1995. She saw that the parallel lives lived in virtual realities ultimately resulted in a view of the self that was less unitary and more protean.[23] Turkle approached these developments with optimism; she believed that those parallel lives could serve as new opportunities for the exploration of identity online.[24]

The second effect the computer brought about is what Turkle called a 'holding power'. Turkle stated that people were being drawn towards the computer because it recalled two opposite feelings in its users. On the one hand, people were afraid of the computer because it showed striking similarities with the intelligence of a human being. This intelligence made it on the other hand also fascinating. This delicate interplay of threatening and fascinating properties, caused a strong allurement.[25] Here Turkle's background in psychoanalysis becomes prominent; she claimed that people were drawn to those elements that evoke strong emotions: 'We are drawn to what frightens us, we play with what disturbs us, in part to try to reassert our control over it.' (Turkle, *The Second Self*, p. 37) The fact that most people are being drawn to rollercoasters and horror movies, serves as an illustration of this assumption. Here Turkle sees an analogy with the reception of psychoanalysis in the early twentieth century. At that time, people were similarly confronted with the concepts of determinism and free will. Turkle states that psychoanalysis had soon embedded itself in the popular imagination:

> Freud's theory of dreams, jokes, puns, and slips (...) is evocative. (...) Interpreting dreams and slips allows us all to have contact with taboo preoccupations (...).
> My interpretation of the computer's cultural impact rests on its ability to do something of the same sort. For me, one of the most important cultural effects of the computer presence is that the machines are entering into our thinking about ourselves. If behind popular fascination with Freudian theory there was a

[23] Turkle, *Alone Together,* p. xi.

[24] Turkle, *Alone Together,* p. xi.

[25] Turkle, *The Second Self*, p. 299.

> nervous, often guilty preoccupation with the self as sexual, behind increasing interest in computational interpretation of mind is an equally nervous preoccupation with the idea of self as machine. (Turkle, *The Second Self*, p. 29)

The third result of the computer's intelligent characteristics observed by Turkle, was that a new form of companionship could be formed. When doing research for *The Second Self*, Turkle sensed that a lot of people she interviewed were afraid of intimacy:

> Hysteria, its roots in sexual repression, was the neurosis of Freud's time. Today we suffer not less but differently. Terrified of being alone, yet afraid of intimacy, we experience widespread feelings of emptiness, of disconnection, of the unreality of self. And here the computer, a companion without emotional demands, offers a compromise. You can be a loner, but never alone. You can interact, but need never feel vulnerable to another person. (Turkle, *Alone Together*, p. 279-280)

Turkle specifically encountered this 'schizoid compromise' for not being alone when she spoke with hackers. She was aware of the fact that they formed a niche group and that most people were not involved with computers in the way hackers were. Unlike most people, these young optimists were completely dedicated to the computer.[26] However, Turkle saw this relation between the hackers and their computers as an exemplary scenario of what could happen when someone would spend a lot of time with a computer and would begin to understand its internal logic.

However, the computer did not only offer a form of companionship, it also offered the young hacker a medium through which he could express himself. As the hackers performed their own programming, it enabled them to experience the computer as a constructive tool:

> [Most young adolescents] integrate their computer experience into their developing identities in ways that have nothing to do with becoming computer experts. They use programming as a canvas for working through personal concerns. They use the computer as a constructive as well as a projective medium. (Turkle, *The Second Self* p. 132)

[26] Turkle, *The Second Self*, p. 187.

This constructive aspect was a result of the computer's open structure. People were able to develop their own programming style, which many regarded as a creative process. They witnessed how they could master their own programming and how they were able to control everything that appeared on the screen. It allowed them to control, examine and manipulate the computer's working.[27]

Jumping a decade further into the future, Jaron Lanier saw the early individual web pages as a way to experiment with one's own creativity. Being able to create a web page, people were able to design their own creative ideas and share personal photos and texts. Lanier saw these websites as creative outlets; they had 'the flavor of personhood'[28] because no webpage was identical to another. They were designed according to one's own preferences. Because it became popular to own a personal webpage, many people who did not regard themselves as a creative person, started to design personal layouts by experimenting with different fonts, colors and arrangements.

[27] Turkle, *The Second Self*, p. 137.

[28] J. Lanier, *You Are Not a Gadget* (London: Allen Lane, 2010), p 48.

§ 6 Dissolving Boundaries

In the previous section we saw how the early digital developments fueled new forms of self-reflection. Another important effect of the early digital developments was that theoretical and physical boundaries started to fade. Both Jaron Lanier and Douglas Rushkoff described how the new technologies blended into our physical reality.

At the start of his career, Lanier was particularly concerned with the developments of computer-simulated experiences. In 1986 he coined the term 'Virtual Reality' to describe these simulated environments.[29] Virtual Reality is an immersive, interactive system based on computable information that is constantly updated. As an effect, the participating person imagines himself in a different, three-dimensional environment. In this virtual environment, the person is not only digitally presented with images of another environment, but his movements and senses are also virtually recreated.

Virtual Reality can be defined by three 'I's': immersion, interactivity, and information intensity.[30] The immersion is accomplished by an isolation of the senses so that a person becomes unaware of his actual physical environment. The interactivity is then generated by a computer that tracks the physical movements of the immersed person. This enables the presented point of view to change, corresponding to the person's physical movements. This is accomplished through the use of bodysuits, including data gloves, goggles and ear phones. The data glove is a lightweight glove onto which flexible fiber-optic cables are attached. By slipping a hand into this glove, each movement of the hand is translated into the movements of the virtual hand. The goggles and the ear phones then make it possible to perceive the visual and auditory parts of the virtual world. Furthermore, the information intensity consists of the possibility to present entities in the virtual world that show a certain degree of intelligent behavior.

When Lanier founded his company, worldwide only twenty groups of people were building virtual realities.[31] The most research was done by the military, who built simulators for their soldiers and pilots. By stepping into a simulator, the military staff was able to experience and practice virtual situations of the battlefield.[32] The National Aeronautics and Space Administration (NASA) was also

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[29] M., Heim, *Virtual Realism* (New York, Oxford: Oxford University Press, 1998), p. 5.

[30] Heim, *Virtual Realism*, p. 7.

[31] 'An Interview with Jaron Lanier', *Whole Earth Review*, 1989, p. 108.

[32] Heim, *Virtual Realism*, p. 24.

developing virtual realities for the benefit of planetary exploration. They would use the information they had gathered about the moon and would use it to create a virtual representation of it. By doing this, they could virtually walk on the moon.[33]

Douglas Rushkoff witnessed how some of the first digital natives were equally preoccupied with abolishing the boundary between the physical and the virtual. Rushkoff has described and analyzed their 'cyberpunk' movement in his first book, called *Cyberia: Life in the Trenches of Hyperspace*, published in 1994. In order to be able to fully comprehend the principles of this movement, it is crucial to explicitly mark its moment in history. One year after its original publication, Rushkoff wrote a short preface in which he stresses how important the context of his book is. He emphasizes that America Online[34] – one of the biggest internet providers of the United States – had not yet begun to facilitate internet access for people outside military and academic circles. The internet did not yet have twenty million subscribers; the popularity of the internet had grown dramatically in the year between the original publication of *Cyberia* and the moment Rushkoff wrote his preface. He therefore feels compelled to pay special attention to this unique moment in time:

> Cyberia is about a very special moment in our recent history – a moment when anything seemed possible. When an entire subculture – like a kid at a rave trying virtual reality for the first time – saw the wild potentials of marrying the latest computer technologies with the most intimately held dreams and the most ancient spiritual truths. (Rushkoff, *Cyberia*, preface)

The new digital technologies inspired young people to think about reality in a different way. These members of the cyberpunk movement had come to believe in 'Cyberia'; a boundless territory in which reality is being elevated to a new dimension. Digital developments were offering their users a new reality where time and place were not behaving according to the rules people were used to. Instead, documents could be e-mailed to one another; making no use of time-consuming postal services but only of a machine that delivered the document almost instantaneously. In the same way, people from all over the world could speak to one another as if they were in the same room by using a webcam. The Virtual Reality equipment that has been discussed earlier was equally

[33] Heim, *Virtual Realism*, p. 8.

[34] America Online is currently known as AOL.

regarded as a groundbreaking innovation, as people could immerse themselves in a dream-like landscape.

Moreover, digital environments were seen as a reality that blended into the reality we were already familiar with. It was believed that cyberspace and the physical reality were in fact part of one non-hierarchical system. Inspired by psychedelic drugs, the young cyberpunks even claimed that they were able to access cyberspace without logging onto a computer. Instead, they would make use of drugs, dance, spiritual techniques, chaos math and pagan rituals to experience a reality that would yield no limitations to time, distance or one's own body.[35] They saw their psychedelic experience scientifically confirmed by quantum physicists, who started to see that tiny particles in fact did not behave in a predictable manner, as was thought for a long time. Mathematicians were also providing evidence for the claims of the young idealists; they saw that computers were capable of generating psychedelic paisley patterns that represented reality more accurately than the classic geometric model they used before.[36]

At the heart of this paradigm shift lay the conception that our world could be interpreted as one interdependent system. This belief was founded on the idea that the earth is a biosphere. The young cyberpunks were inspired by the 'Gaia' hypothesis, conceptualized by James Lovelock in the 1970s. According to the Gaia theory, the earth is a living being, consisting of both animate and inanimate elements that together form a self-regulating system.[37] The young hackers regarded the development of the digital landscape – the datasphere – as the hardwiring of a global brain. This intelligence would then bring a new dimension to reality. This new boundless territory would serve as an environment in which human consciousness could thrive. It would open up possibilities for new ways of expression, communication and understanding.

As has been discussed in the previous section, Sherry Turkle witnessed yet another instance whereby the boundary between the animate and the inanimate seemed to dissolve. She noticed how the distinction between the human mind and the computer began to be questioned. The computer 'defamiliarized' the mind; people thought they knew themselves and how their brain worked but seeing how the computer worked in a similar way, they were forced to ask themselves

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[35] D. Rushkoff, *Cyberia: Life in the Trenches of Hyperspace* (New York: HarperCollins, 1994), p. 3.

[36] Rushkoff, *Cyberia*, p. 3.

[37] J.E. Lovelock, "Atmospheric homeostasis by and for the biosphere: the Gaia hypothesis" *Tellus* XXVI, 1-2, 1973.

fundamental questions about their own being. Turkle found herself alone in the assumption that computers were intellectually affecting our attitude towards our own identity:

> My colleagues often objected, insisting that computers were "just tools". But I was certain that the "just" in that sentence was deceiving. We are shaped by our tools. And now, the computer, a machine on the border of becoming a mind, was changing and shaping us. (Turkle, *Alone Together*, p. x)

While Turkle detects a strong determining force coming from the computer, she does accentuate the positive effect it has on its user. As a psychologist, she encouraged all forms of introspection.

This introspection could take on many forms. For example, people would suddenly realize that the appearance of complexity was a result of causal simplicity. People could rationally argue that the computer was not possessed with a spiritual mind, but was instead being ruled by basic queries. They therefore began to believe that whatever looks intuitive can ultimately be formalized.[38] This realization ultimately resulted in questioning the essence of human authenticity.

Turkle furthermore not only claimed that people slowly gave up the distinction between the computer and the human mind, but they also wanted to become one with the computer. She explained that during the Romantic era, people wanted to escape rationalism by becoming one with nature. In the 1980s, this had been translated into a merging with the computer.[39] Turkle saw this attitude towards the computer amplified in the subculture of the hackers; the computer scientists who created computer operating systems. Turkle described the hacker's relationship with the computer as artistic and romantic. The hackers often regarded the operating system they built as a reflection of their own mind and soul. In this regard they were creative artists, rather than technicians.[40]

Turkle, Lanier and Rushkoff have thus all witnessed and celebrated the same tendency. The distinction between the animate and the inanimate, the physical and the virtual began to be questioned. Physical movements could be virtually recreated and people believed they could enter cyberspace by using drugs and dance rituals. Mathematicians saw reality accurately represented by computer patterns, and people began to realize that they could not find a clear distinction between

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[38] Turkle, *The Second Self*, p. 246.

[39] Turkle, *The Second Self*, p. 280.

[40] Turkle, *The Second Self*, p. 280.

their own mind and the computer. These developments fueled a great optimism about the computer's possibilities. As a result, people started to lean even further into the future, as I shall point out in the following section.

§ 7 The Promise of Cyberia

As has been outlined in the previous sections, the revolutionary developments in the field of electronics in the twentieth century had a dramatic impact on people's perception of themselves and their surroundings. Jaron Lanier has described it as an 'opening-of-everyone's-windows'.[41] The new digital medium spurred a new kind of self-reflection, and started to dissolve the boundary between the physical and the digital. These tendencies issued a sense of optimism:

> (...) 1984, is of course iconic in Western intellectual thinking, tethered as it is to George Orwell's novel. *Nineteen Eighty-Four* describes a society that subjects people to constant government surveillance, public mind control, and loss of individual rights. I find it ironic that my own 1984 book, about the technology that in many a science fiction novel makes possible such a dystopian world, was by contrast full of hope and optimism. (Turkle, *Alone Together*, p. xi)

As has been mentioned, Turkle saw huge potential in the self-reflection people experienced when they found themselves confronted with the computer. The introduction and the following popularity of the networked home computer offered a different way to think about one's own identity and relationships. The uncanny intelligence of the computer caused people to reflect upon their own intelligence and inevitably caused them to ask themselves which characteristics set them apart from the computer. Being a psychoanalist, she believed that reflecting upon one's mind formed an essential part of any mental healing process: 'Psychoanalysis relies on the analytic experience, the "talking cure," to defamiliarize the mind to itself and thus reveal what would otherwise be hidden in the light.'[42] The computer could thus become a tool suitable for discovering and defining one's identity, either by asking oneself philosophical questions or by actively interacting with the computer.

The new digital medium also bore the promise of being able to fundamentally alter common injustices and misconceptions. Jaron Lanier founded the company Visual Programming Languages for the production of communication tools. He saw Virtual Reality as a 'reality-built-for-two or

[41] Lanier, *You Are Not a Gadget*, p. 15.

[42] Turkle, *The Second Self*, p. 3.

'RB2'.'[43] Lanier's aim was for Virtual Reality to allow people to share imagination, and to dwell in graphic and auditory worlds that were mutually expressive. When immersed in a Virtual Reality, people were able to express and communicate without making use of conventional language and symbols.[44] Lanier's conviction was that this kind of communication would bring back a shared mystical sense of reality. He stated that such mystical experiences had always been central to civilization and culture, before patriarchal powers began to increasingly dominate many cultures. He envisioned that Virtual Reality would bring back a sense of tolerance and understanding amongst people.[45]

Lanier emphasized the importance of communication for our society. He argued that experiences shared in a Virtual Reality could potentially increase empathy and reduce violence:

> Virtual Reality is the ultimate lack of class or race distinctions or any other form of pretense since all form is variable. When people's personalities meet, freed of all pretense of that kind in the virtual plane, I think that will be an extraordinary tool for increasing communication and empathy. In that sense it might have a good effect on politics. ('An Interview with Jaron Lanier', p. 117)

Virtual Reality was thus not deployed by Lanier as an escapist technology, focused primarily on entertainment. Instead, he saw Virtual Reality as an opportunity to make people more aware of what it meant to be human in the physical world. People were not reflecting upon their lives and the society they lived in, because they were completely immersed in it. Therefore, Lanier saw Virtual Reality as a medium that would be able to offer an alternate reality. Subsequently, this would initiate a heightened sense of reflection and understanding, as well as renewed appreciation towards the physical world.

His technique for creating more sympathy and awareness was thus twofold: by immersing oneself in a Virtual Reality, all physical features of one's person could be altered, thereby ruling out discrimination of any kind. But people were also able to meet their physical reality with renewed appreciation after they had visited the Virtual Reality. The latter is reminiscent of Turkle's

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[43] Heim, *Virtual Realism*, p. 16.

[44] Heim, *Virtual Realism*, p. 17.

[45] 'An Interview with Jaron Lanier', p. 115.

psychoanalytic technique of defamiliarizing the familiar. Just as a confrontation with the computer caused a defamiliarization of the mind, immersing oneself in a Virtual Reality caused a defamiliarization of the physical reality. In both cases, the familiar would be challenged, thereby creating more awareness of its latent dysfunctions and misconceptions.

The cyberpunk movement described by Douglas Rushkoff was equally fueled by optimism. Not only would the new technologies enable people to experience unprecedented realities, they also saw the possibility to criticize and deconstruct existing establishments:

> Cyberians question the very reality on which the ideas of control and manipulation are based; and as computer-networking technology gets into the hands of more cyberians, historical power centers are challenged. (Rushkoff, *Cyberia*, p. 5)

This would also extend to politics and economics; if a young hacker only had enough time, he would be able to break into every single computer system. Hacking into the system of a powerful institution could be seen as an act of protest. In this way, Cyberia finally offered an opportunity to criticize and deconstruct existing monopolies.

While the 'cyberians' were part of a subculture, Rushkoff believed that their ideals and practices would soon be picked up by popular culture. He stated that many new movements started on the outer "fringes" of society, before gaining more territory. Rushkoff mentions the shift in recent mainstream media, which could point to one of the first signs of popular culture having picked up some of the issues raised by the cyberpunk subculture. He mentions the movies *Batman* (Tim Burton, 1989) and *Blade Runner* (Ridley Scott, 1982) and the novel *Neuromancer* (William Gibson, 1984). These stories took a realistic, posturban look at society and presented a world in which computers did not simplify pressing issues but instead exposed weaknesses in our assumptions about human identity.[46] Being a media theorist, Rushkoff believed that art and the entertainment industry often reflected certain pressing issues already circulating in society.

Cyberia thus would offer us an alternate reality which we could use to explore different concepts of time and place, while also reflecting upon our physical reality. In that sense, Turkle and

[46] Rushkoff, *Cyberia*, p. 5.

Lanier were also ambassadors of Cyberia. They equally saw the dialectic between the virtual and the physical as an important reflection process.

However, while Rushkoff got inspired by the cyberpunk's idealism, he was also cautious about the potential dangers of the electronic culture. He saw that people had gotten increasingly dependent upon technology in a short period of time:

> The battle for your reality begins on the fields of digital interaction. Our growing dependence on computers and electronic media for information, money, and communication has made us easy targets, if unwilling subjects, in one of the most bizarre social experiments of the century. (Rushkoff, *Cyberia*, p. 2)

With these 'bizarre social experiments', Rushkoff means new technologies like computer conferencing systems – which he regards as one of the early virtual communities – and the emergence of Virtual Reality. He shared the idealistic perspectives of the cyberians, while at the same time being hesitant about fully embracing these new technologies that were making their way into people's lives at a rapid speed.

While the following chapter will point out that during the years that followed, all three theorists recognized the dangers of the digital developments, Rushkoff was the first to modestly express his concerns. Rushkoff joined the cyberpunks in their enthusiasm, but was at the same time suspicious of the game-changing technologies. As I shall demonstrate in the following chapter, Rushkoff gradually saw his suspicion of these new technologies justified.

PART TWO

Standing Up Into the Present

§ 8 Digital Developments in the Twenty-First Century

In the previous chapter, we saw how Douglas Rushkoff defined video conferencing systems as 'one of the most bizarre social experiments of the century'[47]. At that time, he could not suspect how such 'experiments' would evolve. The networked computer has known an exponential growth since then. The United States Census Bureau, a principal agency of the U.S. Federal Statistical System, calculated that in 1984, 8.2 percent of all households in the United States owned a computer. In 2011, this had grown to 75.6 percent.[48] The number of computer users that has an internet connection has equally shown a dramatic increase. The United States Census Bureau has also gathered data about the internet usage throughout the United States. Their statistics show that in 1997, 18 percent of the households used internet at home. In 2011 this had increased to 71.1 percent.[49]

In the meanwhile, devices gradually became more portable. Landline telephones made way for mobile telephones. Desktop computers made way for laptop computers. However, the real turning point came with the popularization of the smartphone, which first gained mass popularity in Japan in 1999, when the 'i-mode' was introduced.[50] In the course of the following years, smartphones also gained popularity in the U.S.. The BlackBerry was one of the most used smartphones and its addictive nature soon revealed itself. The term 'Crackberry' was listed as Word of the Year in 2006 by the Webster's New World College Dictionary: 'Crackberry, winner of the 2006

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[47] Rushkoff, *Cyberia*, p. 2.

[48] File, 'Computer and Internet Use', p.2.

[49] File, 'Computer and Internet Use', p.2.

[50] F. Rose, 'Pocket Monster', *wired.com*, September 2001 <http://archive.wired.com/wired/archive/9.09/docomo.html> (10 October 2014).

Word-of-the-Year contest among the dictionary's staff, sums up the ubiquitous thumbing of keypads on handheld devices throughout the country.'[51]

By then, internet had also gone wireless, which dramatically changed the presence of the internet:

> (…) as connections to the Internet went mobile, we no longer "logged on" from a desktop, tethered by cables to an object called a "computer." The network was with us, on us, all the time. (Turkle, *Alone Together*, p. xii)

Our cellphones soon began to take over a wide array of tasks; they could function as organizers, cameras, telephones and computers. According to Turkle, this device often even serves as a thought-prosthetic, when used as a personal digital assistant or cellphone.[52]

Finally, the architecture of the internet also changed into what many call 'Web 2.0'. Tim O'Reilly has been regarded as the person who coined the term Web 2.0.[53] According to O'Reilly, it basically refers to the internet as a platform. The user actively engages with the internet; the web becomes bottom-up, instead of being only top-down. Where the internet was thus previously characterized by a relatively small number of people providing a larger group of users with a static website, Web 2.0 offers its users a chance to actively participate in the content of websites, by using platforms. This approach manifests itself in different formats; users are enabled to control their own data, there is an increasing focus on service instead of packaged software, and users are able to participate in the content.[54]

However, while the content is mainly generated by the users, the platforms themselves are owned by large companies. These companies are able to control the content by adjusting the design and architecture of the platforms and by applying algorithmic manipulation, as shall be discussed in more detail in the following sections.

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[51] N.J. Hoboken, 'Webster's New World® College Dictionary: Info Addicts Are All Thumbs' *prnewswire*, November 2006 <http://www.prnewswire.com/news-releases/websters-new-worldr-college-dictionary-info-addicts-are-all-thumbs-55824847.html> (10 October 2014).

[52] Turkle, *The Second Self*, p. 3.

[53] T. O'Reilly, *What is Web 2.0: Design Patterns and Business Models for the Next Generation of Software*. (O'Reilly Media, Inc., 2009). P. 1.

[54] O'Reilly, *What is Web 2.0,* p. 14.

§ 9 Degeneration of the Self

In the previous chapter, I have outlined how the early digital developments issued an exploration of the self and of people's surroundings. Turkle, Lanier and Rushkoff celebrated the intricate dialectic between the virtual and the physical, believing that it would positively affect social standards. However, as I have stated in the introduction, it is my understanding that digital technology is increasingly downgrading the state of our emotional lives. This means that the optimism of the twentieth century has made way for a growing pessimism. In this chapter, I will therefore try to find arguments for this hypothesis by examining how, according to Turkle, Lanier and Rushkoff, the attitude towards one's self and surroundings have evolved over the years.

Sherry Turkle describes how the new technologies of the twenty-first century have influenced social interaction. Her most recent book, called *Alone Together: Why We Expect More From Technology And Less From Each Other*, was published in 2011. Turkle's method of research for this book has been ethnographic and clinical. She spent time with computer scientists, computer hobbyists and children and adults who were spending time with smartphones, social media websites, virtual 3D worlds and sociable robots. These conversations have now urged Turkle to make bold statements about these new technologies.

She starts off her introduction with the following sentence: 'Technology proposes itself as the architect of our intimacies.'[55] The computer thus no longer evokes thoughts and feelings – like Turkle stated in *The Second Self* – but it has come to radically determine our emotional life. She comes to this conclusion by identifying several tendencies in the way we now communicate and interact with each other.

One of these tendencies is that people have started to prefer digital communication over face-to-face contact, which has led to machine-mediated relationships. Throughout her conversations with the people she interviewed, Turkle encountered the same stories: communication via text messages or email is experienced as being more convenient than talking to someone in person. A text message can be answered at a self-designated time, as opposed to a face-to-face conversation where one is expected to answer a question immediately. In the case of digital interaction, the interlocutor can be put 'on hold', which makes it more efficient and less demanding. Text messaging also allows us to conscientiously design what is being said, so that we

[55] Turkle, *Alone Together,* p. 1.

do not misspeak by accident. However, Turkle states that the occasional slips of the tongue which may occur when speaking face-to-face, can often reveal one's actual feelings. She stresses that it is during these unforeseen moments that we truly get to know one another. She concludes that as we tend to communicate more digitally, our relationships grow increasingly shallow.

Douglas Rushkoff equally identifies the problem of mediated communication. According to him, certain nuances are lost in digital translation, like eye contact, physical touch and facial expressions.[56] By investing in offline interaction, we could reach a more meaningful level of communication. Moving away from mediated communication may furthermore also put us in contact with people around us, with whom we would otherwise not interact. This may broaden our social horizon.[57]

Virtual realities offer yet another kind of mediated communication. In the previous chapter, I have already mentioned how, during the twentieth century, people experimented with parallel lives in online virtual realities. However, while Turkle initially saw these virtual personas as a way to explore one's identity online, she has now encountered a lot of people who have become addicted to their virtual identity: '(...) life on the screen moves from being better than nothing to simply being better.'[58] According to Turkle, the danger of this development lies in the fact that the virtual life is perceived as being free of risk. Once you become bored or disappointed, you can quit your avatar and simply start again.[59] Communicating via text messages and leading a life in online virtual worlds thus share the same advantage over interaction in real life: it creates a risk-free mode of activity where one feels less vulnerable. Turkle finds this development alarming because she claims that we need to engage in unpredictable and potentially dangerous relationships because those enable us to reflect upon ourselves and others.

Besides these developments in communication and online identities, Turkle also discusses at length the growing acceptance of sociable robots. These come in various sorts; she discusses the robot toys designed for children to play with, the robots intended for elderly care, as well as intelligent robots developed by Artificial Intelligence scientists. Turkle introduces the term 'robotic

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[56] J. Hansen, W. Luers, S. Alizadeh, and D. Grigar, 'A Study Guide to Program or Be Programmed: Ten Commandments For A Digital Age' *#nextchapter*, p. 5.

[57] Hansen, Luers, Alizadeh and Grigar, 'A Study Guide to Program or Be Programmed', p. 4.

[58] Turkle, *Alone Together*, p. 218.

[59] Turkle, *Alone Together,* p. 218.

moment'. This concept entails a state of emotional and philosophical readiness towards robots.[60] According to Turkle, we are ready to engage with robots on an emotional level. Turkle even found that most children made no fundamental distinction between a real and a robotic pet. Most children furthermore regarded their pet robots as being even more convenient and less demanding than real animals. A robot pet does not bite or die, just as one cannot be allergic to it.[61] Turkle mentioned that virtual realities had evolved from 'being better than nothing', to 'simply being better'.[62] It seems that the same has happened with machine-mediated communication and relationships with sociable robots. The shared conception lies in the fact that these new technologies are less demanding. They are designed to serve our needs, and they do not expect much from us in return. Digital messaging does not require us to reply instantaneously and virtual realities allow us to create a body and life that we have always dreamed of and that we can easily end when things get difficult. Finally, sociable robots can be designed in such a way that they fulfill our needs of companionship, without demanding investment in return.

While these technologies answer to our need for low maintenance and risk-free interactions, they fail to meet the necessity of emotionally challenging relationships. The modern machinery does not longer evoke self-reflection, but instead it numbs our sense of self, as well as our social relationships.

Jaron Lanier equally identifies an altered sense of authenticity and individuality. He primarily blames the modern design of the internet for this. During the 1980s, Jaron Lanier was part of the first 'digerati'; the elite of the computer industry. These people were digital futurists, true believers in the promise if the digital world. Their efforts resulted in numerous technological achievements, with the popularization and expansion of the World Wide Web as one of the most prominent designs. Lanier has been an insider of this community for thirty years and was in 2010 even named one of the hundred most influential people in the world by Time Magazine.[63]

However, since the turn of the century, Lanier started to have serious doubts about the course these digital developments have taken. In 2010 his first book was published, called *You Are Not A Gadget*. In this book – which is presented as a manifesto and is therefore highly fragmented

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[60] Turkle, *Alone Together,* p. 9.

[61] Turkle, *Alone Together,* p. 59.

[62] Turkle, *Alone Together*, p. 218.

[63] Reed, 'Jaron Lanier. The 2010 TIME 100'.

in both argumentation and presentation – he expresses his concerns about the modern internet. He criticizes Web 2.0 in particular; a collective noun for websites whose designs are not static but 'open'. These websites allow users to interact and collaborate with each other via social media websites or by contributing to websites that are built on user-generated content. Lanier argues that Web 2.0 promotes anonymous comments and contributions and creates fragmentary content. Not only does this architecture have consequences for one's authenticity, they also facilitate risk-free communication. Lanier is therefore critical about the ideas Web 2.0 expresses about human interaction and identity.

Lanier identifies several tendencies that support his claim. First, he regards social media websites as rigid frameworks that suppress individual creativity and authenticity. Lanier states that a website like Facebook uses a template that only presents the possibility of multiple-choice definitions of human beings. When creating a profile, one has to name one's profession, marital status and residence. Lanier argues that with this one-dimensional representation, life is turned into a database. This kind of personal reductionism is an inherent property of information systems; Lanier explains that one's status always had to be declared in reductive ways when filling a tax return. However, on a website like Facebook these database-like entries enter the realm of social interaction.[64] Lanier states that this particular configuration of social media is denying users their own creativity and freedom of expression. The reductionism is not limited to setting up a profile. In the case of Facebook, a dating agency has been developed that draws connections between people based on their profiles. And a social networking website like LinkedIn attempts to make similar connections based on people's field of work. According to Lanier, these are shallow services because they focus on virtual simplifications, rather than on real, complex human beings.

Lanier's complaints go on; not only are the social media profiles themselves based on simplifications, he also argues that the social media platforms are designed to facilitate fragmentary and superfluous communication. He mentions Twitter as an exemplary medium that allows users to share short messages. He shares the following advice:

> "If you are twittering, innovate in order to find a way to describe your internal state instead of trivial external events, to avoid the creeping danger of believing

[64] Lanier, *You are Not a Gadget*, p. 69.

that objectively described events define you, as they would define a machine."
(Lanier, *You Are Not a Gadget*, p. 21)

Lanier states that the architecture of these social media platforms influences the content. Forcing people to post a limited number of characters, ultimately results in superfluous utterances. Lanier further argues that most users of social media websites create online fictions about themselves. He states that maintaining one's profile asks for social sensitivities. Insincerity is therefore often highly rewarded. Interaction on social media is, according to Lanier, thus superfluous and insincere.[65]

Sherry Turkle has come to the same conclusion, after she interviewed numerous adolescents for whom social media websites formed an important aspect of their social activities. Like Lanier, she concludes that activity on a website like Facebook is foremost a performance. Most people tend to share content that will yield the right impression upon their friends. Their activity is thus premeditated and carefully constructed. As a result, the social media profiles are not a platform for spontaneous interaction, but forms a representation of the individual one feels one is expected to be.

Turkle furthermore states that the social interactions on these websites are in fact not social. According to her, the high number of direct and indirect messages we receive online, result in a depersonalization of the people who send the messages. Attending to all these messages becomes like working down a list, and as a result we tend to treat the people we meet in online spaces in the same way we treat objects. She furthermore states that when we send a message ourselves to a group of friends, we treat those individuals as one single unit.[66] In this sense, social media platforms have the tendency to focus on depersonalized interactions.

This depersonalization also reveals itself in the promotion of anonymous content. According to Lanier, the designs of Web 2.0 are based on the philosophy that anonymity and fragmentation are more important than autonomous creativity. A high number of websites allow users to contribute on an anonymous basis, so that one's identity is not revealed when a comment is made or content is being uploaded. Lanier stresses that online anonymous posting of comments has a negative side effect. It encourages 'trolling'; the abusing of other users in an online environment. According to Lanier, trolling occurs on a large scale and each person has an 'inner troll' inside of him:

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[65] Lanier, *You are Not a Gadget*, p. 71.

[66] Turkle, *Alone Together*, p. 168.

> (...) the user interface designs that arise from the ideology of the computing cloud make people – all of us – less kind. Trolling is not a string of isolated incidents, but the status quo in the online world. (Lanier, *You are Not a Gadget*, p. 61)

Douglas Rushkoff equally suggests that we should try to omit anonymous contributions from our online activity. He regards online anonymity as an unfavorable tendency. Rushkoff has also witnessed an alarming amount of careless and hurtful online comments posted anonymously by people who have a tendency to verbally abuse other internet users. He concludes that anonymous commenting makes us careless. Because these anonymous comments are not being associated with our own personality, we fail to acknowledge the impact they may have on others. Rushkoff argues that we should therefore try to develop a new sensitivity towards the effects of our online actions, or we should stop posting anonymous content altogether.

While Lanier and Rushkoff only speak of trolling when it comes to anonymous users, I would like to suggest that the tendency to troll also applies to non-anonymous contributions online. The fact that people do not know each other and are not in physical contact with each other, increases the number of casual placed comments.

However, many people have expressed their worries about the phenomenon of trolling. One example is the campaign by the Dutch independent foundation called Sire, which tries to bring social problems to the attention of a broad audience. Throughout the years, they issued several campaigns about trolling amongst children. One of the printed campaigns summoned parents to monitor their children's online behavior (fig. 1).

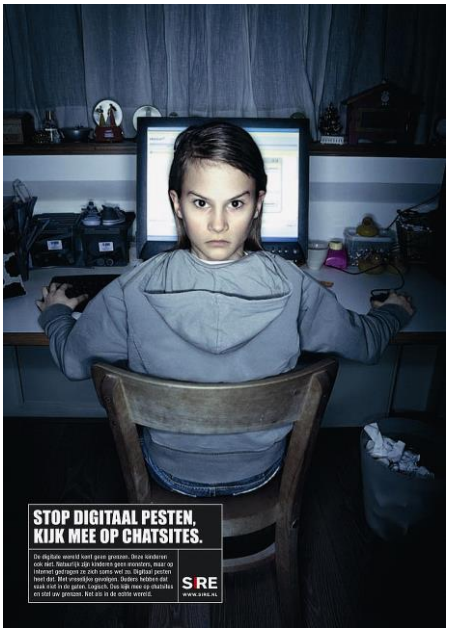

Figure 1. Campaign Sire <http://www.sire.nl/campagnes/stop-digitaal-pesten>

Apparently, people do not only tend to maintain a fiction of themselves on the internet – either in virtual realities or on social media websites – but their anonymous online contributions also tend to make them insensitive to social standards. Ultimately, people are thus not only actively degrading their sense of authenticity, they may also abandon their moral standards when they inadvertently bully other online users. Further insecurities may of course arise when one is being subjected to trolling oneself.

Turkle, Lanier and Rushkoff thus share the conviction that anonymous activity on the internet causes people to grow disconnected from their true selves. Lanier and Rushkoff believe that people who post anonymous content are inclined to grow careless about the comments they make because they cannot be held accountable for their statements. They are also less aware of the consequences their online actions have in the offline world. Sherry Turkle argues that virtual selves do not longer serve as a playful way to explore one's identity, but have become an escapist technology in which we do not longer have to face the difficulties we have in our real lives. While these technologies and implementations answer to our need for convenient and risk-free interactions, they fail to meet the necessity of demanding relationships. The machinery does not longer evoke self-reflection, but instead it numbs our sense of self:

> Those who use BlackBerry smartphones talk about the fascination of watching their lives "scroll by." They watch their lives as though watching a movie. One

says, “I glance at my watch to sense the time; I glance at my BlackBerry to get a sense of my life.” (Turkle*, Alone Together*, p. 163)

Where Turkle, Lanier and Rushkoff embraced the virtual during the twentieth century, believing it would have a positive influence on the physical, they are now skeptical about this relationship. The separation of people’s virtual and real lives is problematic; our experiences in virtual worlds do not prepare us for difficulties we may meet in real life. Instead, it has made us insensitive to social standards, made us focus on depersonalized interactions and has started to make us prefer risk-free communication over socially demanding relationships.

§ 10 Locked In

As has been mentioned before, Jaron Lanier characterized the early digital developments of the twentieth century as an 'opening-of-everyone's-windows'. However, since then, all three theorists have rather witnessed a 'closing-of-everyone's-windows'. While during the twentieth century the digital developments caused certain boundaries to dissolve and slowly fade away, the digital inventions of the twenty-first century have caused boundaries to further establish themselves in various ways. Turkle, Lanier and Rushkoff have all identified tendencies that have socially and technologically created closed concepts and territories.

Jaron Lanier argues that the digital world is inherently tied to the notion of 'lock in'. On a technical level, software is always dependent on other software. When a certain underlying structure is designed, and the software becomes a success, other software will have to follow the same structure and design. Lanier further explains this dynamic by discussing the example of MIDI. This is a representation for musical notes, invented in the early 1980s by a music synthesizer designer. MIDI was able to conceive digital musical notes in the same way the sounds of a keyboard are arranged. This meant that the musical notes were divided into instructions like 'key-down' and 'key-up'. MIDI was thus not able to digitally reproduce the entire spectrum of musical notes but had to reduce these notes to a limited number of digital instructions.

MIDI was originally invented with a single purpose, namely to connect multiple synthesizers together so that a larger palette of sounds could be created while playing one single keyboard. However, MIDI soon became the standard scheme to represent music in software. This meant that following music programs and synthesizers were designed to work with MIDI. Lanier explains that when this happened, most other software had to follow the same underlying structure. At that point, the concept and structure of MIDI had become locked-in.[67]

Lanier warns us that the same is happening with personal ideologies. He argues that software always expresses ideas. And computer scientists occasionally have the tendency to design new software without sufficiently contemplating its effects. He argues that when software is being subjected to lock-in, the ideas it carries out are also locked-in. Software can express for example ideas about how human interaction should take place. When these ideas get locked in, it becomes difficult to critically examine them or to even change them: 'Lock-in makes us forget the

[67] Lanier, *You are Not a Gadget*, p. 9.

lost freedoms we had in the digital past. That can make it harder to see the freedoms we have in the digital present.' (Lanier, *You Are Not a Gadget*, p. 14)

Lanier therefore stresses that we should be extremely careful about the choices we make and the software we use. However, when people are obliged to use the formats presented to them, the ideology at hand will be able to ingrain itself into society over time. He therefore tries to give us insight into this mechanism so that we will be able to retreat from the dominant designs before we degrade our sense of individuality:

> The new designs on the verge of being locked in, the web 2.0 designs, actively demand that people define themselves downward. It's one thing to launch a limited conception of music or time into the contest for what philosophical idea will be locked in. It is another to do that with the very idea of what it is to be a person. (Lanier, *You Are Not a Gadget*, p. 19)

Lanier has thus identified two different scenarios of lock-in. The concept of lock-in can take place on the level of programming. Whenever a software program builds upon another program by following the same technical principles, the programs become interdependent and the technical principle is then locked-in. I shall call this type programmed lock-in. The second type regards the ideas expressed by software. Lanier argues that software always expresses ideas about how we should organize various aspects of our lives. As soon as the software gains popularity and is implemented in our daily lives, the ideas that are expressed by this software, are also implemented into our thinking. This type can therefore be called conceptual lock-in. While both types of lock-in are problematic, Lanier is specifically alarmed about the conceptual lock-in, for he worries about the ethical implications. However, he does argue that we might be able to escape the pointed direction once we recognize the underlying ideology and the conceptual lock-in principle at play. Therefore one has to recognize and identify the underlying mechanism and must be willing to take an oppositional stand.

Douglas Rushkoff does not speak about the principle of lock-in, but he does agree with Lanier that the digerati give expression to how we should manage our lives. He states that the software we use has been designed by an elite group of programmers. And as Lanier has already pointed out, most of these programmers have a particular view on how the internet should be

structured and used. Like Lanier, Rushkoff aims at creating more awareness about the impact software may have on our lives:

> As popular understandings of technologies have always been one step behind the technologies themselves, we have become complacent users rather than agents of our own computing activities. This situation allows those with the ability to create through programming to maintain control, simply by designing the technology for or against their natural biases, leaving us to either fall in line or struggle against the natural flow. (Rushkoff*, A Study Guide*, p. 22)

The Dutch television program *Tegenlicht* had an interview with Douglas Rushkoff in April 2014, following the publication of his most recent book *Present Shock, When Everything Happens Now*. The broadcast was called "De herovering van het Nu".[68] In this interview, Rushkoff stresses the fact that we should learn to create our own programs:

> Most people think that learning to program is like becoming an automechanic. They say "Look, I know how to drive my car, I don't have to know how to fix it.".
>
> I'm not talking about the difference between an automechanic and a driver, I'm talking about the difference between a driver and a passenger. If you're gonna live in an automative culture, are you content with being a passenger? Maybe, but what if you're a passenger in a car where everything is blacked out and you can't even look out the windows? You got to now trust the driver to take you where he's saying is the best place. To the best supermarket, to your friend's house.
>
> "Oh, your friend's house isn't there anymore."
>
> "What to you mean, it's not there?"
>
> "It's just not there… I'll take you to this other friend, it's closer…"
>
> (De herovering van het nu, 41:23)

[68] English Translation: "Reclaiming the Now".

Rushkoff's sinister depiction of our growing dependency upon an elite group of digerati is compelling. According to him, the digital road we are travelling has direct consequences for our social interactions. We might trust our driver when he describes what he sees along the road, and for him to make the right choice for us. But if we cannot see where he is taking us, we might pass our friend's house without even knowing it. How do we know he only acts in our best interest? Rushkoff therefore advocates a digital literacy, so that we are able to avoid being locked into a car without windows.

One of the instances where software already acts like such a vehicle, is when we search the internet for information through the use of a search engine. We trust this engine to provide us with the most accurate search results. However, Rushkoff argues that most search results are being filtered – according to our own search history, preferences and customs. Rushkoff refers to a book called *The Filter Bubble, What the Internet is Hiding from You*, written by internet activist Eli Pariser. In this book, Pariser shows how various programs and websites exercise an invisible algorithmic editing of the web. Pariser talks about the newsfeed of Facebook, which is being edited according to our behavior. Their software is able to monitor which links we click most, from which our probable preferences can be extracted. Pariser states that Facebook then selects the status updates that match these preferences, and makes sure that these are the updates the user is presented with. As a result, the less popular updates are left out of the feed.

What troubles Pariser most, is that this selection occurs without consultation of the user. Like Rushkoff, he mentions the algorithm that Google uses to present us with search results that are tailored to our own personal preferences. He argues that Google automatically stores our search queries and activity, in order to adjust future search results. But even when we use Google from another computer, and its software does not have access to our personal search history, the search results will still be customized. According to Pariser, this is based on fifty-seven different signals. For instance, Google's software is able to establish our location, and manages to identify the computer and browser we are using. By categorizing these variables, the software can then estimate the likelihood of a certain socio-economic status. This kind of customization also extends to news websites, which are experimenting with various degrees of personalization.

Pariser therefore speaks of a 'filter bubble'; our own personal, unique online universe of information that we live in. He states that this kind of bubble is not a new phenomenon. He argues that before the internet, a select group of people would control which information would reach us

via newspapers and television. He therefore states that instead of the human gatekeepers who were in control of the information that reached us through older mediums like print and television, we now have digital, algorithmic gatekeepers. Pariser argues that the problem with these digital automized gatekeepers lies in the fact that they do not possess an embedded form of ethics. They curate the world for us but do not possess a sense of moral responsibility. This may jeopardize a nuanced depiction of the facts. Pariser therefore calls for algorithmic gatekeeping that is both more transparent, and monitored by human assessment.

But our choices are not only determined by the digerati currently in control. Douglas Rushkoff argues that the inherent binary wiring of digital technology also puts a restriction upon our experiences. He explains that the software of computers is at the core being run by binary digits. This is the computer's essential code, which consists of ones and zero's. These two elements regulate the flow of electricity. Rushkoff argues that this binary foundation translates itself into the software as well. In order to operate, computers have to divide data into clearly defined options. Software is therefore not an infinite landscape to explore, but a finite collection of options. This dynamic can be seen on various levels. For example, computers continuously offer the possibility to choose screen A or screen B; to click on hyperlink A or hyperlink B, or to choose answer A or B from a vast set of possible answers. Of course, this has consequences for the way software can be used and experienced:

> This binary system forces humans into making choices that are narrow and finite (one of the other, this or that) without any space around them for possibilities. Our reliance on digital technology allows the computers we thought we controlled to make minute choices about how we experience the world in ways we are not even aware of – and meanwhile we try to cram the human experience into the searchable confines of a database. (Rushkoff*, A Study Guide*, p. 7)

Because software forces us to choose from a limited amount of options, our freedom of choice has become restrained and we are locked into finite possibilities.

Digital technology thus has the tendency to lock us in. First, there is the binary wiring of the technology which forces software to implement predetermined options. Second, digital structures may become unalterable once they are used in multiple software programs. Both programmers and

users are then stuck with this particular concept. Third, the philosophies expressed by software are also subject to lock-in. This is both a result of the programmed lock-in, and of the users becoming used to certain ideologies. Lanier warns that these concepts can get easily absorbed by the mainstream audience and over time, people tend to forget that things were once different. A fourth instance where software locks us in, is when algorithms are used to manipulate the feed of information we are presented with. This may have both intellectual and social consequences. Choices are made for us without us recognizing it. We trust that the software we use answers a pre-existed need and is there to make our lives more efficient. We also trust it to present us with objective, unfiltered information. However, this software has initially been designed according to particular philosophies about personal identity, communication, society and efficiency.

These various occurrences of lock-in stand in sharp contrast with the boundaries that were fading during the twentieth century. Where the digital landscape described in the previous chapter held the promise of societal progress, the architectures of today's internet rather tends to intellectually and socially lock us in. It thus seems that with the turn of the century, the boundaries have been re-established.

§ 11 Captured by the Singular

Just like the sentiments around the digital developments in the twentieth century epitomized in the concept of 'Cyberia', the architecture of today's internet is equally inspired by an ideology. This ideology is called 'the Singularity', which focuses on the emergence of one super-consciousness. The notion is most famously conceptualized by Ray Kurzweil in his book *the Singularity Is Near: When Humans Transcend Biology*, published in 2005. He theorizes that the Singularity is the final product of all digital data produced by individual internet users. When we spend time browsing the internet to gather information, to communicate with each other, or to post our own content, all of these activities can be monitored and stored. From this stored pile of data, one is then able to extract an average that will reveal a new kind of intelligence. This is also known as the 'noosphere' or the 'Singularity'. Just like the notion of Cyberia, the Singularity focuses on the emergence of one central consciousness. Cyberia constituted a territory that would bring a new dimension into being which bore the promise of facilitating new ways of expression, communication and understanding. The Singularity does however not aim to enhance our communication or experiences, but will rather replace individual human intelligence. It thereby reduces individuality to bits of data, as Lanier points out:

> Ever more extreme claims are routinely promoted in the new digital climate. Bits are presented as if they were alive, while humans are transcient fragments. Real people must have left all those anonymous comments on blogs and video clips, but who knows where they are now, or if they are dead? (Lanier, *You Are Not a Gadget*, p. 26)

The Singularity is thus the product of all data extracted from the internet. It is therefore able to achieve an extremely high level of intelligence, thereby rendering individual intelligence obsolete. The conviction that the Singularity will take place in the near future, is widespread among computer

scientists.[69] However, Lanier ridicules the concept of the Singularity and calls it a naïve religion. He states that the Singularity is solely a popular chimera of the computer scientist's inner circle.[70]

In 2000 Lanier wrote an online article called *One-half of a Manifesto*, which was published in *Wired Magazine*. In this article, he fiercely protests against the Singularity and tries to explain why the concept of the Singularity has no scientific basis. He is convinced of the fact that computers will not be able to reach a human-like consciousness:

> I share the belief of my cybernetic totalist colleagues that there will be huge and sudden changes in the near future brought about by technology. The difference is that I believe that whatever happens will be the responsibility of individual people who do specific things. (Lanier, 'One half of a manifesto')

However convincing his objections may be, Lanier finds himself quite alone in this sceptic attitude. Various key figures of the digital world have argued in favor of the Singularity. One of these figures is Kevin Kelly, the founding executive editor of *Wired Magazine*. In 2010 he wrote a book called *What Does Technology Want?*. As early as 2005, he gave a TED-talk about this same question. By asking this question, he tries to determine the inherent trends, biases and tendencies of technology over time. He compares technology to biological organisms. He states that we can only understand the tendencies of technology when we apply a reductionist view and compare it to genes– just like Richard Dawkins does in his book *The Selfish Gene*, when he asks the question 'What do genes want?'. Kelly states that technology is a cosmic force and follows the same principles as genes. It strives towards specialization, diversity and complexity – just like biological genes. Technology thus has an inherent drive to evolve, which leads Kelly to suggest that technology will accelerate evolution.[71] One of his theses is for example that we will soon have one global book, instead of

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[69] Lanier, *You are Not a Gadget*, p. 26.

[70] What Lanier fails to mention, is that the concept of the noosphere was already introduced in the early Twentieth Century by Édouard Le Roy (1870-1954), Vladimir Vernadsky (1863-1945) and Pierre Teilhard de Chardin (1881-1955). These three thinkers all had a different vision on how the noosphere would manifest itself.

[71] Kelly, K., 'How Technology Evolves' *TED*, February 2005 <https://www.ted.com/talks/kevin_kelly_on_how_technology_evolves#t-946412> (26 July 2014), 14:50.

numerous separate books. This universal book will be the product of the textual fragments from all books that have ever been written.[72] As a consequence, individual authors will become obsolete.

Chris Anderson – also connected to *Wired* magazine – equally promotes the dominance of the collective over the individual. In an article called "The End of Theory", he argues that the digital cloud will soon be able to understand scientific theories better than individual scientists. This will develop according to the same principle: large quantities of data will exceed individual insights.

Turkle, Lanier and Rushkoff all passionately argue against the Singularity. Jaron Lanier is able to describe his disapprovement of the movement most fiercely:

> This digital revolutionary still believes in most of the lovely deep ideals that energized our work so many years ago. At the core was a sweet faith in human nature. If we empowered individuals, we believed, more good than harm would result.
>
> The way the internet has gone sour since then is truly perverse. The central faith of the web's early design has been superseded by a different faith in the centrality of imaginary entities epitomized by the idea that the internet as a whole is coming alive and turning into a superhuman creature. (Lanier, *You are not a Gadget*, p. 14)

Douglas Rushkoff is just as passionate about the topic. He argues that we should be on 'Team Human', so that we might be able to keep our authority over our own authenticity.[73]

However, Lanier, Rushkoff and Turkle do not only protest against the Singularity and the digerati who are trying to facilitate this direction. They have also witnessed a more widespread trend that focuses on singular, isolated fragments. One example is of course the way people tend to produce fragments of data, instead of more elaborate narratives or contemplations. As Lanier has argued, social media websites are designed according to this formula. On the website Twitter, people express themselves in sentences that can be no longer than one hundred and forty characters. And on the social media website Facebook, people's personal profiles consist of

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[72] Lanier, *You are Not a Gadget*, p. 26.

[73] D. Rushkoff, 'De Herovering van het Nu' *Tegenlicht*, April 2014 <http://tegenlicht.vpro.nl/afleveringen/2013-2014/de-herovering-van-het-nu.html> (24 August 2014), 33:30.

numerous separate posts. These posts most often do not cross-reference each other, nor is there an underlying narrative. Online, people thus tend to express themselves in fragments.

This fragmentation also applies to our sense of time. In his most recent book, called *Present Shock, When Everything Happens Now*, Douglas Rushkoff focuses on our modern perception of time. He argues that digital technology has turned our lives into sequences. The computer continuously presents us with a series of choices, inherent to the computer's binary wiring. However, our attention is furthermore also divided between multiple devices, websites and messages. Rushkoff states that this tends to makes us 'digifrenic'; we constantly have to divide our attention between multiple digital sources.[74] Rushkoff argues that because the organization of our time is highly sequenced, we experience time as moving from minute to minute. Digital clocks are exemplary of this development. These clocks only show us frozen instances of time, with the clock's digits jumping from minute to minute. Analogue clocks however, rather present a linear movement through time. The hands of those clocks are in continuous motion, thereby accentuating the linear, organic passage of time.

This altered sense of time has caused us to increasingly focus on the present moment, which consists primarily of a multitude of external impulses:

> (…) our culture becomes an entropic, static hum of everybody trying to capture the slipping moment. Narrativity and goals are surrendered to a skewed notion of the real and the immediate; the Tweet; the status update. (Rushkoff, *Present Shock*, p. 6)

This present moment furthermore stands in isolation with the past and future. Rushkoff explains how the first people who developed the desktop computers and networks had envisioned a computer that would do our remembering for us. And they have succeeded; information can now be stored and subsequently requested at high speed and this has freed us from excessive mental 'luggage'.[75] However, Rushkoff explains that this has not necessarily made us more receptive towards the moment we live in. Instead, we are mostly attentive to the continuous stream of digital utterances and information, which are ultimately a distraction:

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[74] Rushkoff, 'De herovering van het Nu', 24:00.

[75] D. Rushkoff, *Present Shock, When Everything Happens Now* (New York: Penguin Putnam Inc, 2014), p. 4-5.

> [Our focus on the present] has not actually brought us into greater awareness of what is going on around us. We are not approaching some Zen state of an infinite moment, completely at one with our surroundings, connected to others, and aware of ourselves on any fundamental level. (…) Instead of finding a stable foothold in the here and now, we end up reacting to the ever-present assault of simultaneous impulses and commands. (Rushkoff, *Present Shock*, p. 4)

As a result, we are less focused on narrative and more focused on singular fragments. In merely focusing on singularities, we lose the ability to discover what it is we truly want. Not only do we attend to trivial external matters, we also tend to make impulsive choices instead of contemplating our long-term goals.

It seems to me that this has consequences for the narrative of one's self, and the articulation of one's identity. As I have mentioned, Jaron Lanier argues that Web 2.0 promotes fragmentary and shallow interaction which causes a devaluation of authenticity. Sherry Turkle has argued that most people favor short text messages over lengthy emails, telephone calls or face-to-face contact. They are trapped in a present that claims their full attention, and they try to efficiently divide this attention.

I would furthermore like to suggest that the popularity of virtual worlds and sociable robots may also be ascribed to this focus on the present moment, beside the inherent devaluation of meaningful and demanding social contacts. Virtual worlds and sociable robots can offer us moments of comfort. As soon as our real life becomes difficult, we can escape it for a moment and imagine to live another, more comforting life. And as soon as this virtual life becomes disappointing, we can simply quit the avatar. Sociable robots offer the same momentary pleasure; it gives us companionship and we can turn it off as soon as its presence becomes inconvenient. However, by choosing these moments of comfort, we lose touch with dynamic relationships that grow increasingly meaningful over time.

I would then also state that this focus on the present moment and the easy comforts that it may offer us, can make us more receptive towards new technologies. We accept them and embrace them because we find them convenient of entertaining and do not ponder their possible consequences. When we lose touch with long-term societal and personal narratives, we find it

difficult to look beyond the immediate present. It is therefore also likely that we are less critical about the way we manage our lives.

§ 12 A Time For Opportunity

Douglas Rushkoff writes in the preface to his last book how the turn of the millennium caused a shift in the way people experienced their moment in time:

> Something did shift that night as we went from years with 19's to those with 20's. All the looking forward slowed down. The leaning into the future became more of standing up into the present. People stopped thinking about where things were going and started to consider where things were. (Rushkoff, *Present Shock*, p. 11)

While Rushkoff refers in this quote to the growing focus on the present moment from the millennium onwards, his observation is equally applicable to the intellectual course taken by Turkle, Lanier and Rushkoff. During the twentieth century, these three scholars were mostly focused on the possibilities technology could bear in the future. Jaron Lanier saw infinite possibilities for the implementation of Virtual Reality; his technology would yield more understanding and solidarity amongst people. He also saw the early days of the internet as a medium through which people could experiment with their creativity. Sherry Turkle was similarly optimistic; she saw therapeutic value in the interaction between the computer and its user. Finally, Douglas Rushkoff immersed himself in the cyberpunk movement that envisioned open structures and politics. Within this movement, computers and the internet were regarded as vehicles to another, enriched dimension.

Most important, all three theorists believed that the technology could be used to serve people's own purposes. Especially Lanier and Rushkoff saw great possibilities for societal progress in virtual realities and networked computers. Their thinking was thus primarily dominated by social constructivism. Turkle took on a more moderate position. She saw that computers were not merely subjected to it user's wishes, but evoked certain behavior within its users:

> My method, attentive to the detail of specific relationships with computers as they take place within cultures, provides a kind of evidence that undermines both extreme positions. Technological determinism is certainly wrong: there can be no simple answer to the question "What is the effect of the computer on how

> people think?" As we shall see, computers evoke rather than determine thinking. The consequences of interaction with them are dramatically different for different people. But the idea that what is changing is "all in the mind" does not hold up, either. (Turkle, *Second Self*, p. 22)

Turkle stated that the computer influenced but did not determine the user's thinking. It raised questions about the human mind but it did not outline the answers or reactions to these questions. Turkle saw the computer as a Rorschach image; an ambiguous medium onto which different forms could be projected. It could take on many different shapes and meanings; how people interacted with the computer, reflected their personal preoccupations.[76]

Three decades later, these scholars stopped, looked around, and considered where things were. They then identified several alarming tendencies. The social constructivism seems to have given way to technological determinism. They concluded that people have embraced the new technologies offered to them without being aware of their disruptive aspects. The recent digital technologies have spurred a direction that seems to be unauthorized by its users. As both Lanier and Rushkoff have pointed out, software engineers determine this direction for us. They design gadgets and websites that we use and which express specific ideas about efficiency, creativity and communication. However, technology is deterministic in two ways. First, there is the compulsion to use the digital tools offered to us by the digerati. These tools attractively offer us ways to make our lives better, while secretly influencing our social behavior.

Secondly however, technology has also an intrinsic determining quality; fueled by the notion of lock-in. The programmed lock-in creates a co-dependence between software due to their shared underlying structure. Therefore, decisions that seem rather trivial at the outset, may prove to become unchangeable programming rules. Lock-in can furthermore also occur on a conceptual level, whereby users become accustomed to the designs they are using and the designs are locked into the societal discourse.

While Turkle, Lanier and Rushkoff have thus witnessed an increase of the determining impact of technology on society, they also see opportunities for a change of direction. They state that it is now time to reconsider how to use our technologies. Turkle argues that we should ponder whether our usage of the contemporary technology corresponds to the way we want to use them:

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[76] Turkle, *The Second Self,* p. 20.

> We make our technologies, and they, in turn, shape us. So, of every technology we must ask, Does it serve our human purposes? (...) Technologies, in every generation, present opportunities to reflect on our values and direction. I intend *Alone Together* to mark a time of opportunity. (Turkle, *Alone Together*, p. 19)

Jaron Lanier equally promotes an intervention, and states that computer engineers should be more aware of their moral responsibility towards the users of their software. At the same time, users should also be more critical towards the choices that are being made for them. In an ideal situation, the programmers and users would together participate in a discussion about the design of the software.

Finally, Douglas Rushkoff argues that all computer and internet users should develop a certain degree of computer literacy. They should learn to understand how the programs they are using work, or even learn to program themselves. This is reflected in one of Rushkoff's catchphrases; 'If you don't know how the system you are using works, chances are the system is using you.'[77] Users should thus try to escape this authority and learn how to drive their own car and choose their own destination.

It remains to be seen whether this supposed opportunity will indeed proof to be realistic. However, what Turkle, Lanier and Rushkoff inherently seems to motivate in their writing, is to call attention to the current influence of technology on society. It is their aim to expose the hidden mechanisms at play. As has been pointed out, digital technology is determining our lives in ways most people are not aware of. By creating insight in these hidden agendas and opening up a dialogue within society, they wish to restrain technology's determining force.

[77] <www.rushkoff.com> (15 August 2014).

Conclusion

This thesis started off with the claim that digital technology has, since the turn of the century, increasingly determined our social interactions. I suggested that the possibilities of the new technologies were, during the twentieth century, initially celebrated. But once we entered the twenty-first century, these technologies soon appeared to downgrade our social standards.
I have examined my claim by critically evaluating the ideas of three theorists: Sherry Turkle, Jaron Lanier and Douglas Rushkoff. I have tried to distill overlapping themes in their thinking, in order to provide a 'zeitgeist' relating to the use and reception of digital technology during the twentieth and the twenty-first century. It has turned out that the themes of the second chapter of this thesis mirror the themes of the first chapter; the exploration of the self and one's surroundings has gradually turned into a degradation of the self and the boundaries that were first fading away, were later re-established.

I have showed that the popularization of both personal desktop computers in the 1980s and the World Wide Web in the 1990s has had a dramatic impact on people's perception of themselves and their surroundings. Jaron Lanier has described it as an 'opening-of-everyone's-windows'.[78] The distinction between the animate and the inanimate, the physical and the virtual began to be questioned. Physical movements could be virtually recreated and people believed they could enter cyberspace by using drugs and performing dance rituals. Mathematicians saw reality accurately represented in computer patterns, and people began to realize that they could not find a clear distinction between their own mind and the computer.

The new digital medium furthermore bore the promise of being able to fundamentally rectify common injustices and misconceptions. Virtual Reality offered the possibility to immerse oneself in an alternate reality, creating more awareness and sympathy between the individuals that were immersed in this virtual world. Ultimately, the physical reality could be met with renewed appreciation, create more awareness and sympathy between individuals. The confrontation with the computer brought forth a new kind of introspection, according to the psychoanalytic principle of defamiliarizing the familiar. Just as immersing oneself in a Virtual Reality caused a defamiliarization of the physical real, a confrontation with the computer caused a defamiliarization of the mind. In both cases, the familiar

[78] Lanier, *You Are Not a Gadget*, p. 15.

would be challenged, thereby creating more awareness of its latent dysfunctions and misconceptions. People were dreaming about real societal progress, which was further accelerated as the internet became available for the mainstream audience. People could now freely communicate and share information, thereby broadening their horizons.

However, the turn of the millennium caused a shift in perspective. Technology seemed to gain a growing impact on social interaction and on the capacity for self-reflection.[79] Sherry Turkle opened her most recent book with the statement that technology now acts as the architect of our intimacies.[80] Where the digital developments of the twentieth century promoted an exploration of the self and of the physical reality, the digital developments that followed reverted this direction. Most people started to engage in machine-mediated relationships through the use of text messaging and social media and started to spend an increasing amount of time in virtual worlds. These digital environments create a risk-free mode of activity whereby one feels less vulnerable to insecurities. They furthermore tend to suppress individual creativity and authenticity as they create virtual simplifications of individuals. The acceptance of sociable robots equally points to a growing desire for low-maintenance relationships, just as the tendency to make anonymous online contributions. These anonymous users even tend to abandon their moral standards when they inadvertently bully their peers.

While these modern technologies and implementations answer to our need for convenient and risk-free interactions, they fail to meet the necessity of demanding relationships. The technologies do not longer evoke self-reflection, but instead numb our sense of self, as well as our social relationships.

Furthermore, while during the twentieth century the digital developments caused certain boundaries to dissolve and slowly fade away, the digital inventions of the twenty-first century have caused boundaries to further establish themselves in various ways. First, there is the binary wiring of the technology which forces software to implement predetermined options. Second, digital structures are subjected to programmed lock-in. Both programmers and users are then stuck with existing formats. Third, the philosophies expressed by software are susceptible to conceptual lock-in. A fourth instance where software locks us in, is when algorithms are used to induce an invisible editing of the web so that we are locked into our own filtered bubble.

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[79] Turkle, S., 'Connected, but alone?' *TED*, February 2012 <http://www.ted.com/talks/sherry_turkle_alone_together> (9 April 2014).

[80] Turkle, *Alone Together,* p. 1.

The digital trends of the twenty-first century furthermore reveal a focus on singular fragments. The architecture of today's internet is inspired by the notion of the Singularity. Like the concept of Cyberia, the Singularity focuses on the emergence of one super-consciousness. However, this consciousness will not be here to enhance our communication or experiences, but will instead replace individual human intelligence. For the Singularity is the final product of all digital data produced by individual internet users. The architecture of Web 2.0 is built in such a way that internet users create short fragments of data, which can be easily processed by algorithms. This has of course also consequences for individual internet users. By focusing on fragments of data, they stop investing in elaborate narratives or contemplations.

These fragments are exemplary for the sequenced narration of our lives. Our attention is continuously divided between multiple devices, websites and messages, which has made us digifrenic. We are therefore prone to perceive time in singular instances, instead of one linear, continuous movement. This altered sense of time has caused us to increasingly focus on the present moment, which consists primarily of a multitude of external impulses. As a result, we are less focused on personal and societal narrative and more on singular fragments and momentary pleasures. In merely focusing on singularities, we lose the ability to discover what it is we truly want. Not only do we attend to trivial external matters, we also tend to make impulsive choices, rather than contemplating our long-term goals.

Virtual worlds and sociable robots can offer us moments of comfort. However, by choosing these moments of comfort, we lose touch with dynamic relationships that grow increasingly meaningful over time. Our focus on such momentary pleasures also tends to make us more receptive towards new technologies. We accept them and embrace them as soon as we find them convenient or entertaining and do not ponder their possible consequences. When we lose touch with long-term societal and personal narratives, we find it difficult to look beyond the immediate present. It is therefore also likely that we are less critical about the way we manage our lives.

It thus seems that digital technology has indeed highly determined and downgraded our social standards. The windows that were once opened at the end of the twentieth century, have now been closed again. Technology has begun to act as the architect of our intimacies. And as we engage in various machine-mediated relationships that have the tendency to downgrade the emotional level of our interactions and are looking no further than the immediate present, the software is emotionally locking us in.

Sherry Turkle, Jaron Lanier and Douglas Rushkoff therefore state that it is now time for an intervention. We have to start contemplating our long-term goals. While they have clearly witnessed the determining force of technology, all three scholars argue that there is room for change. The digerati should become aware of their moral responsibilities and their users should gain awareness about the impact of the technologies they are using. It is finally time to escape the technology's deterministic influence and start constructing our own future.

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