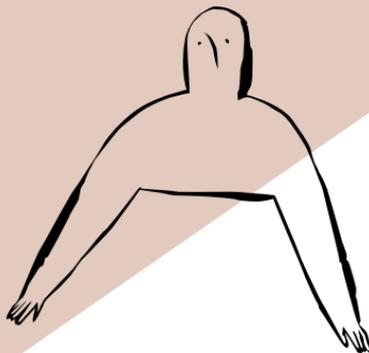


DIGITAL INTERVENTION IN SOCIAL INTERACTION

THE IMPACT OF TECHNOLOGY ON SOCIAL BEHAVIOR AND INTERACTION



HE'S GOT HIS
AND I'VE GOT MINE



Sanja Najdovska

PREFACE

For 21 years I was almost constantly surrounded with lots of people. I shared my life with them, to a point where there was no space for being alone - And I didn't need that. My family and friends I grew up with, were what gave my life a meaning. In September 2010 I moved to Amsterdam to start my studies at the Gerrit Rietveld Academy. Being alone for the first time, I was determined to make new friends. Indeed throughout the years I met a lot of people and made friends who not only gave meaning to my new life, but also had great impact on my personality. However, the one thing I missed from the way I knew friendship to be in Macedonia was the idea of close and casual friendship. The difference between my Macedonian and Amsterdam friendships is a simple one: everything has to be scheduled here. Having coffee with friends means finding a date in our agendas in the future when everyone is available, which might be a week upfront or more. Back home, it seems the one thing we always have time for is meeting with friends. We would just go to someones place to have a coffee, no need to call in advance - if they are busy, we simply would leave and meet up latter in the day.

The starting point for my thesis was my personal experiences and perception of friendships, which led me to research how social interaction has changed and evolved through the past decades. Technology and living habits have great impact on our society, and through my thesis I have tried to understand where we are today , and towards where we are heading

I would like to thank Igor Delov for helping me with the design and print preparation of the thesis booklet; Zula W. Ford for the text editing; Stefan Auberg, for always being there for me; my parents and my sister for their unconditional love, help and support; Stefan Bogeski for always being my dose of happiness; Gerrit Rietveld Academy and my teachers for guiding me through these 4 amazing life changing years of my life.

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INTRODUCTION

A man standing on a crowded Muni train pulls out a .45-caliber pistol. He raises the gun, pointing it across the aisle, before tucking it back against his side. He draws it out several more times, once using the hand holding the gun to wipe his nose. Dozens of passengers stand and sit just feet away - but none reacts. Their eyes, focused on smart phones and tablets, don't lift until the gunman fires a bullet into the back of a San Francisco State student getting off the train. Investigators say this scene was captured by a Muni camera.

An article taken from www.sfgate.com/crime. Absorbed device users oblivious to danger. Published on Monday, October 7th, 2013.

Starting the 1940s a wave of new technologies was introduced, changing the way we perceive communication and interaction. This period called, the Digital Revolution, or the Third Industrial Revolution, started with one fundamental idea - connectivity.

First the transistor¹ became a widely spread communication device, and paved the way for the development of more advanced technologies - the computer². A long way since then, in just a few decades the computer became familiar to the masses, becoming an irreplaceable asset in the office and at home. Soon after the first cell phone³ was also introduced, making it easier than ever to stay connected no matter where one was. A decade later the World Wide Web⁴ was introduced, and by the beginning of the 21st century internet-enabled portable computers and phones became part of our everyday lives. Since then the Digital Revolution has been spreading all over the developing world. Nowadays Internet-enabled smart phones⁵ and gadgets⁶ are commonly seen all around us and the number of users continuously grows. They have become our necessity, an extension of us and the new standard for everyday communication.

In which ways and how much have these developments influenced our everyday behavior? Sitting with friends, walking down the street, even going to bed - people are constantly checking and looking at their smart phones... no one is actually looking around! A lot of things are not seen just because people don't bother to look.

In the case of the San Francisco gunman-story, it is ironic how it was the gadgets that stole away people's attention of noticing the gun, but then again, it was another digital device that captured the criminal and helped the police solve the case.

As we become more and more equipped with technology, we are also becoming more and more distant from the physical environment. However the environment also gets distant from us, as a result of it getting technologically equipped too. Therefore, those who don't make use of technology, are finding it harder to function efficiently.



¹ The transistor was first introduced in 1947. The government, military and other organizations made use of computer systems during the 1950s and 1960s.

² computer is a general purpose device that can be programmed to carry out a set of arithmetic or logical operations

³ cell phone is a device that can make and receive telephone calls over a radio link while moving around a wide geographic area. It is connecting to a cellular network provided by a mobile phone operator, allowing access to the public telephone network.

⁴ world wide web - commonly known as the web, is a system of interlinked hypertext (the underlying concept defining the structure of the www) documents accessed via the internet. With a web browser, one can view web pages that may contain text, images, videos, and other multimedia and navigate between them via hyperlinks.

⁵ smart phone is a mobile phone built on a mobile operating system, with more advanced computing capability and connectivity than a feature phone.

⁶ Gadget is a small tool such as a machine that has a particular function. In the software industry, "Gadget" refers to computer programs that provide services without needing an independent application to be launched for each one, but instead run in an environment that manages multiple gadgets

The digital revolution challenged technicians to develop these new technological devices and designers to design the process of receiving and working with digital data. In the design world this led to the development of a new design approach, called interactive design. Interactive design enabled us to interact with our surroundings, using technological gadgets, on an everyday basis. Therefore a whole new world of opportunities arose and confronted the designer. Static familiar surfaces become a challenge for the designer to make them interactive. By making them interactive, different information can be layered, making the user experience (UX) richer, more informative and immersive. Now we come across walls that react and display relevant information when we approach them or furniture that changes color, shape or temperature, in relation with our body or the environment. All of these developments have also affected the way we interact with each other, how we see and experience our world. However most importantly, these developments have changed our expectations of everything that is surrounding us.

This is daring the interaction between people, changing our behavior and influences our society. Long term commitments are not expected and involvements are compressed in time. We are creating new values in atmosphere of instant intimacy; we are living the future shock as Alvin Toffler described it already in 1970.

The aim to achieve perfection has always been the goal of humanity. However, humanity is not perfect, and those imperfections and flaws is what make us compassionate and sensitive towards each other. I feel that the urge to engineer the perfect machine that offers the ultimate user experience, might play against us in the greater scheme of things.

I believe it is a designer's obligation to question this technological Digital information is data which we can not physically touch, but

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I believe it is a designer's obligation to question this technological and digital revolution through design. Everything is designed! Everything that we use on a daily basis and how we use it, is designed by someone. For us to make conscious choices, I believe it is important for designers to find a way to address the issue of how things are changing and evolving because of the digital advancements.

Through my thesis I will explore and discuss the role of design in shaping and creating the future. I will look into how technological developments affect the interaction between people, focusing on where and how the digital and physical worlds meet. The definitions of virtual and physical have become so blurred, I can't help but wonder: How far can we extend the borders of what is humanly acceptable? Will we know when we have reached the limits, if there are any...



⁷ Future Shock is a book written by the futurist Alvin Toffler in 1970. In the book, Toffler defines the term "future shock" as a certain psychological state of individuals and entire societies. His shortest definition for the term is a personal perception of "too much change in too short a period of time".

1

EMOTIONAL IMPACT

Digital information is data which we can not physically touch, but can access via a technological device. Because devices displaying the digital data are interactive, meaning an action by us results in a reaction by the device, not only we can create digital data but we can also work with it. Our physical space on the other hand, is defined by things we see, touch and feel. This is how we make sense of our surrounding and how we understand it. Digital data exists in a physically non-defined- virtual space, that used to be unclear and undefined to us. Based on what we used to know, and what we consider understandable, we have come to make sense of the virtual world.

This seems to blur, the line between the virtual and the real. Attempts are made to bring the digital closer to us in order to better understand it and make better use of it.

Digital space and digital information have no limits, space-wise they are limitless. In stark contrast, the physical space has its own limits. Think of storing and collecting - think of the capacity of virtual versus

physical space. Like the garbage bin in your kitchen, every three days you have to change the garbage bag, whereas the garbage bin on your phone or computer almost never gets overloaded.

In order to improve the quality of our physical and the virtual world, designers, technicians and developers are working on ways to mix the digital with the real. Throughout examples I will explore the nature of the relation between the physical and virtual. I will point out techniques that are being used in order to bridge the gap between these two worlds.

A memory fades away, becomes less detailed, or is even forgotten. Throughout our lives we are constantly receiving new information, but because we can only remember so much we tend to forget things. Some things we don't remember because we consider them not to be important, some are simply forgotten because we are growing older. As Gordon Bell says, every day we are losing a little bit of our minds.

MEMORY

Remember or forget

A project called Total Recall by Gordon Bell is a great example that shows how we can use digital information in order to stretch the human capability of memorizing.

"I'm losing my mind. Not the Gordon - needs - a - high - priced - psychiatrist kind of losing one's mind, although my teenage granddaughter may disagree. Instead, each day that passes

I forget more and remember less. I don't have Alzheimer's or even brain damage. I'm just aging. Yes, each day I'm losing a little bit more of my mind. By the way, so are you."

Gordon Bell ⁸, *Total Recall*, Chapter "the vision" page 3

We as humans have limited memory. But what if we can change that, what if we can upgrade our memory and stretch our limits?

We only start storing information in our brain at around the age of three. With every new piece of information we receive an old memory fades away, becomes less detailed, or is even forgotten. Throughout our lives we are constantly receiving new information, but because we can only remember so much we tend to forget things. Some things we don't remember because we consider them not to be important, some are simply forgotten because we are growing older. As Gordon Bell says, every day we are losing a little bit of our minds.

Back in 1998 Gordon Bell started an experiment together with Jim Gemmell - a test case, based on experience from their MyLifeBits project at Microsoft Research, to explore the benefits of electronic memories. They attempted to digitally record as much of the life of Gordon Bell as possible. Photos, letters, notes, everything was scanned.

To some extent we all seem to be doing this. Almost unconsciously we are creating digital records of everything important to us - holidays, birthdays, anniversaries, special occasions and celebrations. Even our phone calls are registered, every bank transaction, conversation - everything. We are creating a digital database ⁹ and we can recall that at any time. Today, the human

capability to remember things has been elevated to a whole new level. With time it will stretch even more, to a point where we are going to be able to recall every second of our lives. And that is what Total Recall is about - a revolution that will transform the way we think and the way we live our lives even more.

Imagine you could remember everything? Imagine that every second of our lives was recorded and therefore you could recall any moment of your life.

The movie *Eternal Sunshine of the Spotless Mind*¹⁰ portrays the opposite scenario of Total Recall. In this film, a company offers people the possibility to erase their memories of a specific person, in order to overcome painful events and the longing for that person. If total recall happens (and it will) we will be challenged to pragmatically decide to delete or save things in life.

But can we do this? Do we want to constantly be reminded, or have the opportunity to be reminded of everything, or do we want to be able to forget certain things? How could one decide to delete or keep information? How would our behavior change if we had radical control over our brain?

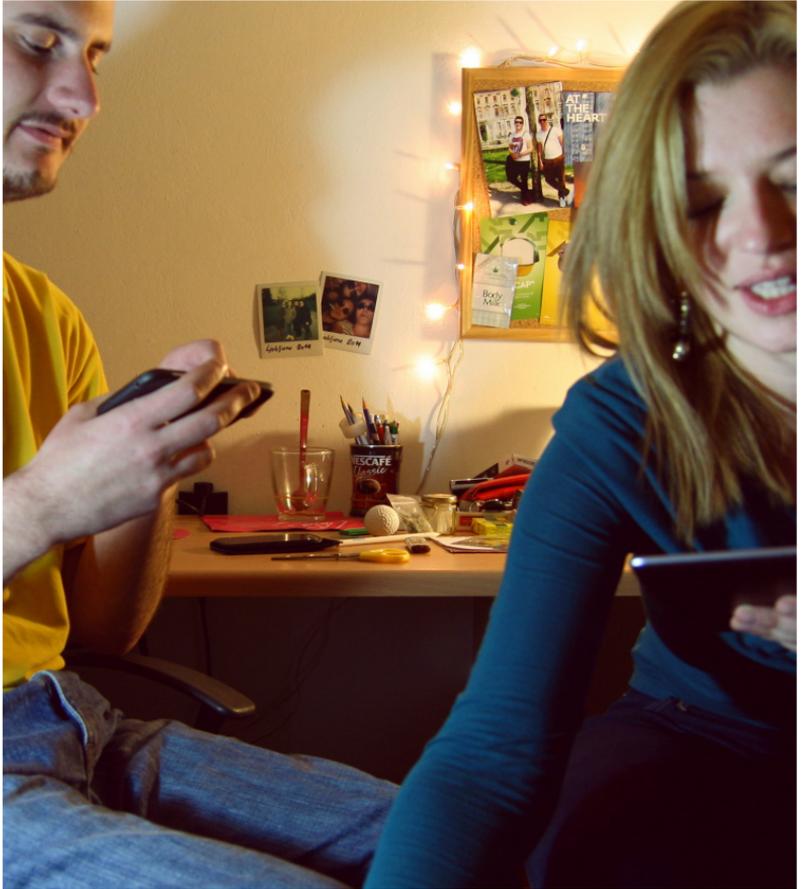
I believe that going through ups and downs in life is what makes us who we are. The successes, the falls, the losses, the joys and grievances... Both the triumphs and failures define who we are. And it is through these experiences that we learn to be compassionate and open to the others - we are human in all our complexity.

So what if we are able to erase all the bad things we've experience in our life? To what can we refer to then in order to know what is good and what is bad? We learn by comparing things. If everything is happy and good, how will we know what is not? Will we be able to appreciate happiness and still be happy and fulfilled?

⁹

¹⁰ Database is a program for storing and retrieving large collections of interrelated information.

¹⁰ Eternal Sunshine of the Spotless Mind is a movie presented to the public in 2004. Written by Charlie Kaufman, Michel Gondry and Pierre Bismuth and directed by Michel Gondry



¹¹ The Final Cut is a movie presented to the public in 2004, written and directed by Omar Naim.

¹² Big Brother is a fictional character in George Orwell's novel "1984". He is the enigmatic dictator of Oceania, a totalitarian state taken to its utmost logical consequence – where the ruling Party wields total power for its own sake over the inhabitants.

¹³ The Ministry of Truth is involved with news media, entertainment, the fine arts and educational books. Its purpose is to rewrite history to change the facts to fit Party doctrine for propaganda effect. For example, if Big Brother makes a prediction that turns out to be wrong, the employees of the Ministry of Truth go back and rewrite the prediction so that any prediction Big Brother previously made is accurate.

I don't necessarily think that remembering everything is great power nor do I think we should forget everything. The balance between remembering and forgetting is already made by the human.

Right now everything that we experience and know exists in our own brains. If this information is digitized, if our knowledge, memories and everything that makes us who we are is available outside our head, does that make it prone to theft? Or what happens with "digitalized me" when the real me is gone?

If you think of this, the Total Recall project, the scenario of the future might be what the movie Final Cut¹¹ portrays. In this film parents decide for their children to have an implant that records everything they see. The child is told about the implant at the legal age of twenty one, when he/she becomes mature enough to understand and deal with this information. The implant is entirely organic: accepted by the baby's organism grows with the brain and nerves, making it undetectable for any kind of scanning. When a person dies all the data of his/her life goes to a cutter. A cutter is a person whose profession is to compile the entire life of a person into a short movie.

Imagine this is possible and real. Imagine yourself, your life, and your memories from birth to death compiled in a movie. Are you going to live your life differently? Make better or at least different choices, knowing someone is, or will be able to see it all through your eyes? This sounds extreme, but rather possible for where our future is going, I'd say.

How George Orwell saw the future of the world in his novel Nineteen Eighty - Four was that people were going to be living in a society that was constantly watched over. Big Brother¹² would have total control over people, watching and dictating every move. Using the

“Ministry of Truth¹³” Big Brother would spread false information to the masses for his own personal benefit and to manipulate history. This may be an extreme scenario of the future, but might not be so far from where we are going. Think of the identities and truths we are generating on our social network profiles. If a digital trace is what we leave behind as a record of our existence, think how easy it will be to manipulate that information and change the legacy we leave behind.

NOSTALGIA

Analog versus digital – past versus present

I remember the analog cameras we had, just fifteen years ago. It was only for special occasions that we would use them, like birthdays and holidays - special moments worth keeping forever. After taking 36 pictures we would have to wait for a week, if not for a month, to have those pictures developed and to finally be able to see them. It was a very special process: taking pictures, developing the film, waiting and finally being able to see them! Then came the arranging of them in albums and labeling them. We had full boxes with photo albums, all neatly organized and labeled with names and the year when they were taken.

Photography was a medium that gave a physical dimension to something emotional. It was and still is a medium that makes moments last forever.

After analog cameras, digital cameras came. With their greater capacity we started translating even greater quantities of our emotional being into digital data. About 5 years ago I got a professional digital camera, and since then I have captured and digitized an immense amount of all kinds of moments. Going through my digital archive is not as romantic as it was going through



analog albums. Maybe it's nostalgia, but going through pictures, telling stories is what used to bring people together. Compared to how we used to experience sharing and viewing developed analog photos, nowadays sharing photos online may be a lot easier but it seems a lot more distant and impersonal. Not only photos, but any kind of analog data that physically exists, contrary to the non-physical existence of the digital. Naturally, we deal with digital data differently. Today we share digital information, in the virtual space, mostly through social networks. We inform our friends and family about what we are doing and stay in touch through facebook, instagram, flickr etc. The interaction happens through the screen and this creates a sort of habit for distant communication and physical de-socialization, whereas analog information was creating sort of a social event where friends and family got together to share and create new memories.

The digital is improving our lives and helps us to be more organized. We are aiming to become more sufficient in every aspect of lives. The digital revolution created the right tools for reaching this goal. But we have to be aware of all the changes that are caused by this digital revolution. Why this is important, is because seeing the improvement of one aspect doesn't necessarily mean improving the entire picture. And if it doesn't we simply need to react constructively on that. Examples of this kind, where things are being partly improved with the digitization, are all around us.

Think of an e-mail (a digital letter) versus the physical mail our parents used to send to each other. E-mail is much more convenient and time efficient, but on the other hand is being standardized and simple, it is missing that emotional element that a personal letter has. The content is personal maybe, yet every e-mail looks the same as the previous one. Whereas a letter written by hand will take much more time to write and reach the other person, but is unique every time

In some of the new schools in Netherlands, also known as Steve Jobs schools children start their education at the age of four and it is mandatory for them to have a digital tablet instead of a paper notebook. When I found out about this I was shocked, thinking how is it possible to skip that precious moment of learning how to write by hand. For me it is strange to think that one day people won't know how to write with pen and paper. But then again, I remember how strange it was for me to have to repeatedly explain my grandmother how to text and call from her mobile phone, just a decade ago. Since today our lives revolve around our tablets and smart phones, meaning they serve as our agendas, reminders and notes, a way to connect to people and visa - versus, I could begin to imagine why kids won't have to learn how to use pen and paper... However, a messy, yet charming handwritten note from a child saying "I love you mom" is a lot more personal and heart-warming, then a typed out one. I believe this highlights how digitalizing things do not necessarily improve it, but quite the contrary, digitalizing could mean making things dull and impersonal.

Undeniably digitalizing has its perks, however my main concern is what kind of impact will this have on us and our behavior?

People might not realize to what extent these changes have influenced us, but just think of the lack of patience and focus we have - the obsession to excel in efficiency by overworking and multitasking - social and emotional awkwardness followed by restless phone checking. All of these are possible signs of things going wrong, or perhaps it is us evolving and adjusting to the new era. Humans have always dealt with changes. Understanding, learning and moving forward is our way of life.

The digital world is like a fantasy world, everything is, or could be possible. By means of technology it is possible to create a portal between the two and bring some of that magic inside the physical world. In the past few decades we have witnessed the digital world



2

PHYSICALAL IMPACT

making its way inside the physical because it gives a promise of a better, brighter tomorrow. Being able to interact with our environment, and for our environment to respond to us, makes the experience richer and more exciting. This is how Interaction Design was born.

The field of Interaction Design is on the rise, and we are seeing more and more responsive objects and services around us. The digital world is for most of us a language of codes and numbers that work logically, but very different from our human intuitive behavior. That is why in today's age and moving forward, designing new objects and services is a much more iterative process. It includes not only programmers, but also designers and psychologists that work back and forth with regular users with different backgrounds and knowledge to test and make sure things are understandable and easy to use. In this new world, we can see interaction designers as architects, or urban planners - designing the field where digital and physical overlap and meet. The goal is to make these new objects and services feel natural and intuitive, so the users can make the most of them.

Depending on the application, circumstances or goal, there are

different things that can be done to overlay digital information on to the physical environment. This doesn't mean that users can always interact with digital information, nor that environments have to be responsive. However, I would like to focus on how we can, and why we should make objects and environments responsive and interactive.

MEDIUM

Augmented reality and haptic holography

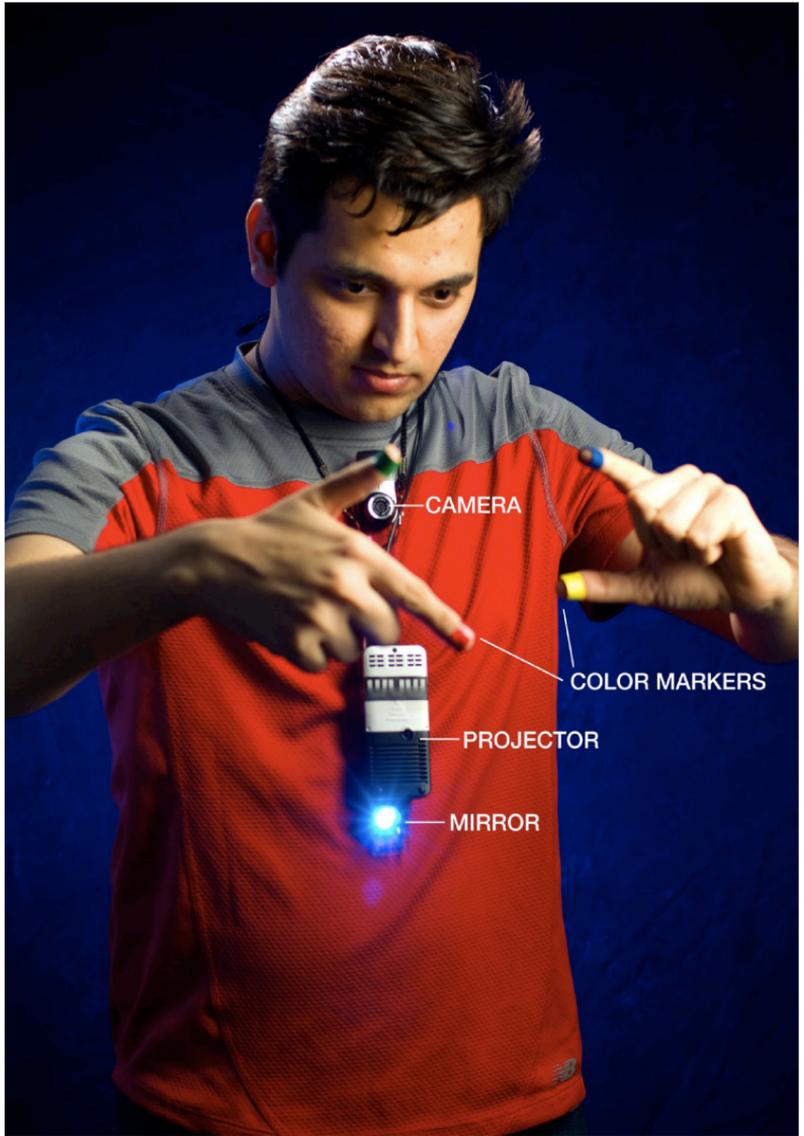
Augmented reality (AR) is a screen based live view of the physical environment that offers the possibility to add computer-generated elements such as video, sound, graphics and GPS data. Unlike virtual reality, which replaces the real world, augmentation is in real-time and it overlays artificial information about the physical environment and its objects. With the help of advanced AR technology, information about the surroundings become interactive and can be digitally manipulated.

I would like to use as an example the 2014 IKEA Catalog that makes it possible for users to plan their interior ahead. The actual paper catalog contains AR codes for each piece of furniture, which can be read with a smart phone running the IKEA Catalog application. As the smart phone camera captures the environment, the app layers a 3 dimensional view of the scanned furniture. This allows users to easily explore great numbers of furniture, from different directions in real time as they move around their own premises.

Taking this technology even further, Google glasses¹⁴ is the project by Google Inc, which was publicly introduced on April 4th 2012. The glasses display relevant digital information and enable live feeds on the go, without engaging with any hand-operated device.



¹⁴ Google Glass is a wearable computer that displays information in a smartphone-like hands-free format, that can communicate with the Internet via natural language voice commands.



CAMERA

COLOR MARKERS

PROJECTOR

MIRROR



15 American superhero film based on the Marvel Comics of the same name written by writer Kieron Gillen

Another example of this concept is the research project Meet the Sixth Sense Interaction, by Pattie Maes and Pranav Mistry. They have developed a device that enables the users to add a digital layer, while physically interacting with each other. Hanging on the user's neck, this device is a combination of a small camera, a projector and a mirror. With the camera able to capture faces, the device runs recognition software and searches for publically shared data on the internet. Once relevant data has been found, the device then projects it onto the person across. These are examples of how the need of the phone screen can be diminished, in order to bringing back the focus of human, eye to eye interaction and still be able to host richer and more informative experiences.

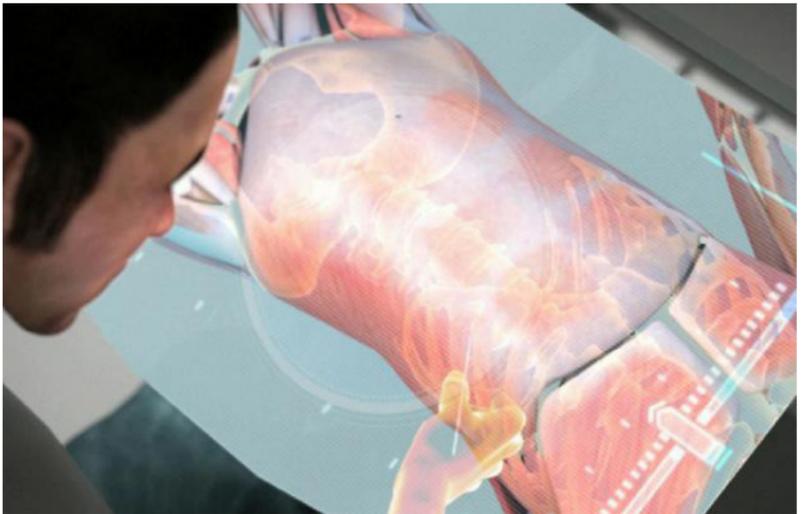
Developing ideas of how to maximize the benefits of adding a digital layer to the physical environment, and what that could mean for our future, have always been a passion for film makers. The movie Iron Man¹⁵ is currently fictional, but may be portraying a future scenario, of a technologically advanced world that exceeds the limitations of ours today. The main character is a wealthy industrialist and master engineer, Tony Stark (Robert Downey Jr.), who has a soft spot for technology. Owner of "Stark Industries", he leads the biggest technologically advanced weapons corporation. On a trip to Afghanistan to demonstrate the latest weapon made by his corporation, Mr. Stark is imprisoned by a terrorist group. In the process he is critically wounded by one of his own weapons, leaving him with numerous shrapnel shell shards traveling through the bloodstream to his heart. To save his life, a fellow captive, engineers and installs an electromagnet into Mr. Stark's chest. Once he regains consciousness, he comes to a realization of how his corporation is affecting the world in a negative way and decides to take matters into his own hands. He and the fellow captive start working on a powerful electric generator to power Stark's electromagnet and a suit of armor. This initial armor suit helps him escape, but in order to fight evil Mr. Stark builds a powered exoskeleton and becomes

the technologically advanced superhero Iron Man. His suit is equipped with many sensors and gadgets, making maximum use of technology and the benefits it offers. For example, the information about his surroundings or the condition of his suit is displayed on the helmet in front of his eyes. He is able to access valuable information on the go, while having a clear view of his environment without any obstructions.

This movie is seen as a great inspiration for many interaction designers, as the use of technology seems to be so natural and intuitive, almost as if it is woven into the fabric of what makes Tony Stark who he is. His whole workshop and the core of his work revolve around technology. While working on the design and the usability of the suit, Mr. Stark is modifying a virtual model with his hands, almost as if it is a physical volume he is holding. There are no screens, stacks of paper, sketches and notes, nor multiple physical models. Instead, the things and materials relevant for what he is working on at that time, appear as interactive holograms, and quickly go away once he is done. Any information or reference is just a quick voice command away. Models can be modified countless times, and it doesn't take any extra physical space, nor does it create waste. When the design and engineering is finalized, the real model can be physically made.

Today's holography is a 3-D image projection that is rather familiar to the masses as it has been around for a few decades. One of the most recent memorable hologram shows happened during the 2012 Coachella festival, where rapper 2Pac made an appearance, sixteen years after his death. Together with Dr. Dre and Snoop Dog they performed on stage Hail Mary and 2 Of Amerikaz Most Wanted. Holograms can create a believable visual experience, however they are lacking in any sort of tactile sensation or feedback.

The issue here is that we live in the physical world and have



¹⁶ Holography is a technique which enables 3D images to be made. It involves the use of a laser, interference, diffraction, light intensity recording and suitable illumination of the recording. The image changes as the position and orientation of the viewing system changes in exactly the same way as if the object were still present, thus making the image appear 3D.

learned to interact with each other and our environment through movements and gestures. This is called intuitive or natural behavior. The difference is that the virtual, or digital world exists between circuit boards and codes, displayed on a screen. So far, our way of interacting with it, has been through a mouse, keyboard and touch-screens. However, lately a lot of experiments have been made to interact with machines and computers with the natural movements of human beings. A device such as Kinect that detects gestures and movements, enables users to interact with computers in a more intuitive manner. The challenge though, is how can we touch the untouchable, digital and virtual bits? There are examples of soon-to-come consumer technology called "haptic holography"¹⁶ that I believe will be part of the next wave that will change the way we live.

So, what is Haptic Holography? Haptic stands for something tactile, something we can physically feel. When it comes to technological devices, they often give haptic feedback - like a small vibration when typing on a touch-screen phone. Therefore, Haptic Holograms are the ones that people will be able to physically interact with.

Imagine the far-reaching practical benefits of this, from entertainment to advances in medicine. Imagine medical students being able to practice surgical procedures on a hologram, where they can easily zoom in to focus on specific organs of the human body as they become more comfortable with the surgery. Imagine history teachers taking students for a "virtual trip" through history, making education more immersive, engaging and exciting than ever.

TIME FACTOR

To apply or not to apply

We come across many cases where the digitalization is not necessarily improving but just changing our everyday life for no reason. Maybe for entertainment... but we should consciously apply digital layers in areas that could bring about something meaningful. I'll take as an example the 100-year old carillon clock Glockenspiel, in Munich. Every day at 11 AM, the clock chimes and re-enacts two stories from the 16th century: the top half of the Glockenspiel tells the story of the marriage of the local Duke Wilhelm of Bavaria, to Renata of Lorraine. In honor of the happy couple there is a joust with life-sized knights on horseback representing Bavaria and Lothringen. The bottom half and second story talks of a myth, originating from 1517 when there was a plague in Munich. The cooper, who made the barrels in which beer is stored, used to dance through the streets to, bring fresh vitality to fearful dispositions. The coopers and their dance came to symbolize perseverance and loyalty to authority through difficult times. By tradition, the dance is performed in Munich every seven years. I find this to be a sentimental story, and it makes sense to me that it should be kept as a special event in the day when people gather to pay their respect to the urban stories and past. However, the company Metaio¹⁷ created an smart phone application that by means of AR lets people experience this 11AM moment at any time of the day. In my opinion, digitally recreating the scenery and making it always available, takes out the symbolism, meaning and value of the stories. It makes the whole event no longer magical, but something very ordinary. The uniqueness of this event is not only in the physical re-enacting of the story, but also the clock chiming as a moment that is socially shared. It connects and brings people together in the same spot. The smart phone app doesn't quite offer the same experience as it is impossible for people to share the moment. One phone, one screen, one pair of headphones – one person.



¹⁷ Metaio is a worldwide leader in Augmented Reality research and technology. Based in Munich and San Francisco, founded in 2003.

Digitizing stands for convenience, and as practical as this is, it is also often removes the magic from things, experiences, and most importantly moments. Moments are something we've always cherished as they are short and never repeating. I think it goes for everyone, we all remember our first kiss, first dance or first live performance. Technology lets us capture these moments, but there is a difference in experiencing the moment and watching it. Concerts have this special overwhelming atmosphere that takes over each individual and is shared and passed on through the crowd. Moments of absolute happiness when you meet the eye of a performer, or catch a drum stick. Lately however, increasing numbers of people (if not all) are experiencing concerts through their smart phones. Being physically there, people are partly detached from the atmosphere as they focus on recording the whole show to be shared afterwards.

Our behavior is changing as we look through the eyes of machines, living in the virtual world. The sensorial experience of our world with all its physical limitations is no longer enough for us. We turn to the digital world on daily basis for more informative, richer and convenient ways of living. At this point, I wonder if it is even possible to go back, or does it make sense to do so? Maybe what we need is a step back to understand and digest how we got here, and how we would like to continue.

People are earning and spending money without ever touching it. In fact, economists estimate that only 8 percent of the world's currency exists as physical cash. The rest exists only on a computer hard drive.

Fact taken from an article from www.howstuffworks.com/currency6 . Article: Forms of Currency: Electronic

3

SOCIAL IMPACT

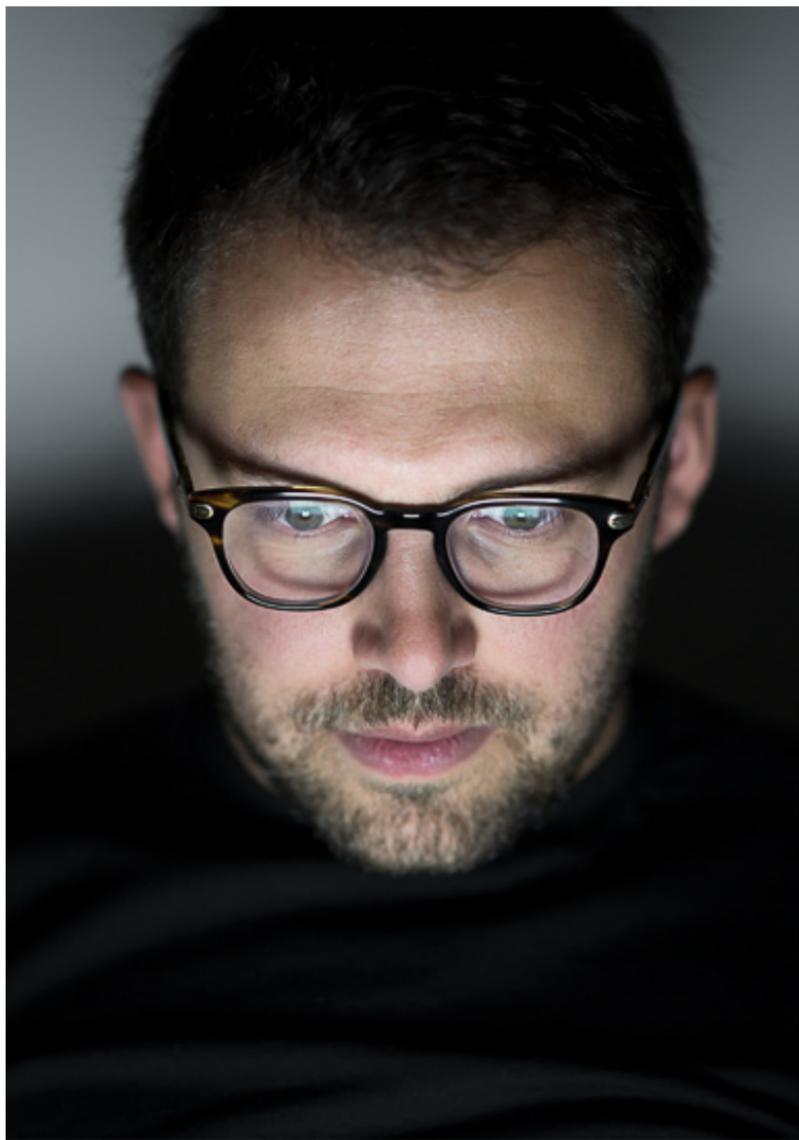
Digital loneliness is a term that I find to be a fitting explanation of what the generations born during and after the Digital Revolution are experiencing. The project "Lonely Window" by a Parisian photographer Julian Mauve portrays this phenomenon, in hope of addressing the side effects caused by increased virtual connectivity and lack of physical interaction. The screen, being on a computer, tablet, phone or info point, becomes a barrier instead of a portal to the world. It seems to be altering not only our relationships with people, but also our relationship with ourselves. It is changing our perception of what it means to be by ourselves and not feel lonely.

The internet and virtual world offers many benefits. It is fast and makes it easier to share information and connect people from different corners of the world. This convenience however, created a different kind of distance. We are witnessing people next to each other completely immersed into the virtual world, detaching from the physical environment and one another. No longer do we need to speak, listen or see people, we can simply turn to the inviting light of a screen and we are connected to others thanks to our best friend - the Internet. The definition of social interaction is redefined, mainly because it is almost dependent on technological gadgets

and the internet. More and more of the human aspects have been introduced and applied in much technological advancement. The fact that we are getting used to technology replacing physical interaction between people, might raise some concerns about how we as a society will move forward in the future. From this stand point, if we look back into the past and evaluate where these technological developments have brought us, it wouldn't be unjustified that people initially feared the machines "taking over" humanity.

In the beginning of the 19th century, when the Industrial Revolution took place, a radical shift in the social structures happened. Although the Industrial Revolution improved and supported technological developments, it was not always perceived as a positive thing. Already then machines started replacing people by taking over their jobs. There was one main group that rebelled against this kind of progress, and they were called Luddites. They used rather violent forms of rebellion to protest against advancements in the wool and cotton industry. Luddites travelled the country breaking machines, in order to express their rage towards introduction of machinery that would reduce handweavers wages and ultimately make them obsolete.

Machines stood for order and mass production - they could do the job faster, cheaper and on a larger scale. People on the other hand, offered craftsmanship, custom-made, and a human component - much appreciated by customers, but business-wise limited in so many ways that machines weren't. It was in this period that the competition between machines and humans started, questioning and evaluating the capability, efficiency and sustainability of both. Machines were created by people, and in a way they are our babies. At the beginning they were maybe unable to function on their own, but today's machines can operate independently. The question is, to what extent can we compare ourselves to machines? Do we want





to, and can we compare our capabilities and limitations to those of machines?

The human race is a social kind. We are bound to be part of society - part of someone else's life and to have people in our own life too. It is in our DNA to always strive for social interaction, physical but mostly emotional. In the era of machines and technological advancements it is no wonder that we even try to implement human components and behavior in a box filled with wired up circuits. Nothing human about that, but yet we keep reinventing ways to connect and interact with each other. This interaction and bond is what defines us. And as things change, our definition of what social interaction is changes too. If in the past it was sitting across someone, looking into each other's eyes, holding hands and talking - nowadays it is sitting on the other side of a screen, texting and sending photos... while maybe even talking with someone else physically in front of you.

It is because of this that I find it to be somewhat challenging the way we use technology and digital data. Technology is becoming more interactive and responsive, and this starts changing our behavior, interaction and expectations of reality. As writer, artist, publisher, and technologist James Bridle, said during his talk at the 2011 Web Directions South. "There is a big ethical negotiation of how technology and we see the world and how that is changing". This is where, what we previously considered to be normal social behavior, is becoming scary and uncomfortable for younger generations. They are born into this era of technology, so they learn and create new kinds of social interaction as they go along. It comes as natural for younger generations, but for people born before the Digital Revolution, this is a new territory yet to be learned and explored. Nowadays we are seeing the world through the eyes of robots. We are teaching our machines, feeding them with information about our world. We are sharing our social world with them and giving

them access to it. Just like consumerism, technological benefits are so seductive, that it makes us addicted.

So how does technology really change and push the borders of humanity?

We all share and access public data, which some could argue is private, over social and professional networks such as Facebook or LinkedIn. Because of this, it is easier for us to learn details about others, and vice-versa - it is easier for others to get an idea about who we are, what our interests are, our work and education experience. All of this can be done without ever physically meeting anyone. In an interview for Conan O'Brian, standup comedian Louis C. K. talks about how phones are toxic for young kids.

“They don’t look at people when they talk to them, and they don’t build the empathy, you know. Kids are mean and it is because they are trying it out. They look at a kid and they go “you are fat”, and then they see the kids face scrunch up and they go, “uuugh that doesn’t feel good to make a person do that” ...But when they write - you are fat, they go like “ uuum that was fun, I like that ”

Written text has a tone, but because it doesn't have a voice, or face - that tone can be easily misinterpreted. You cannot hear your friend's friendly, sarcastic or upset voice, in order to truly understand his/her reaction. You cannot see him/her laugh out loud, or politely smile. Short text messages hardly ever convey tone. Lacking the physical aspect, we all have experienced numerous situations where we misunderstood messages and signals.

It is very important to understand how technology shapes our behavior, feelings and culture, while engaging with it. Accepting all the changes that come along with using technology requires from us to let go of some old paradigms. We must be able to acknowledge the positive sides of change and embrace it, but at the same time we must find ways to keep true to ourselves as humans and what makes us who we are. One of the most marking characteristics is being able to feel - it is what separates us from machines. If we start ignoring our feelings, that could be the first step of losing our humanity. Sadly, this is what I believe is happening to us today. Due to social media and the internet, we don't really have to ever truly deal with our own feelings. The virtual world offers a sort of escape from emotional confrontation. This was also addressed by Louis C. K. in his interview for Conan O'Brien:

“You need to build up an ability to just be your self, and not be doing something. That’s what the phones are taking away, is the ability to just sit there [...] Because underneath everything in your life, there is that thing, that empty, forever empty thing [...] Sometimes when things clear away, you are not watching anything, you are in your car and you start going: “oooh now here it comes that I am alone” like it starts visit on you [...] And so you are driving and you go: “ooooh” (reaching for your phone) and so that’s why we text and drive. I look around and pretty much 100% of the people are driving while texting. People are ready to ruin someone else’s life and their own cause they don’t want to be alone for a second [...] Sadness is poetic, you are lucky to live sad moments [...] When you let yourself feel sad, your body has like antibodies, happiness that comes to meet the sadness [...] Because we don’t want the first bit of sad, we

push it away with a little phone, you never get completely sad or completely happy. You feel kind of satisfied ”

Whether we are talking to people or checking what people are doing, we seem to be needing someone around, almost as if we have unlearned or forgotten how to be by ourselves. If we are not doing something involving other person that keeps us busy on the surface, we tend to feel lonely. That is why we always carry our phones around so we can connect to people and at the same time, safely disconnected from our immediate environment. The project “Een Maal” by a Dutch designer Marina Van Goor ¹⁸ and creative agency Vandejong ¹⁹ is another attempt to make a critical comment on the subject of social disconnection.

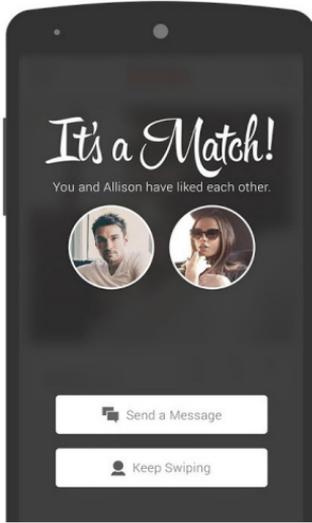
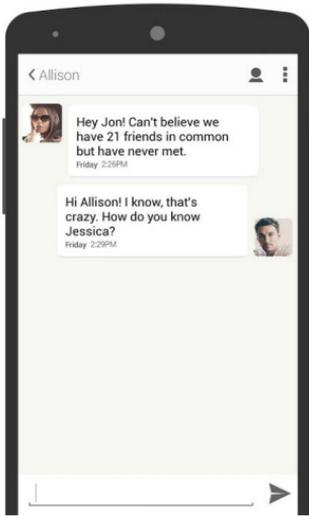
The starting point for this project was the theme of loneliness, which is an increasingly important issue in our society, but people don't want to confront themselves with it. Een Maal, or translated in English “one time” or “one meal” was a pop-up restaurant, located in Amsterdam . It was open for two days and visitors could only sit and eat alone. One person per table – that's it. Taking the one event that associates “togetherness” the most, and making it one-person-per-table-only in my opinion made a very strong point of disconnection.

If we think of what the main idea of internet used to be, to enable us to stay connected with people all over the globe, nowadays we are witnessing increasing number of mobile applications that do that. One of these application is Tinder. Designed by Justin Mateen, Sean Rad, Jonathan Badeen, and Christopher Gulczynski this application facilitates anonymous communication between users. It is used for dating as well as other kinds of networking. So instead of approaching someone and starting a conversation, we turn the application on and clever algorithms calculate who could be



¹⁸ Strategic designer+Designer and developer of EENMAAL, the first one-person restaurant of the world.

¹⁹ Vandejong is a creative agency based in Amsterdam. They develop new formats for an ever-changing world helping organizations to transform and reconnect with their community.



a potential match, based on mutual interests and location. Each profile has a few pictures, and you decide if you like a person or not just by that. If the person has liked you back “it is a match” and you can then start sending messages. Imagine this situation in real life: Why is it awkward to just go and say “Hi, I like you” and start a conversation – if the person likes you back?

After downloading the application, I started talking with few people and decided to meet with one soon after. Texting with him through the app was fun, and I wanted to see if meeting in person would create the same feeling. We set a place and time to meet. As soon as I arrived, my phone went off and I couldn’t switch it on anymore. After unsuccessfully trying for a while to find a way to turn on my phone, I finally decided to stop and look around to see if he was already there. And there he was just two tables away. Later when I charged my phone I received the messages the guy has send me to confirm if I am the girl sitting 2 tables away from him. We both knew we were there to meet, yet none of us looked around and said “Hi” straight away.

This is a clear example of how face-to-face interaction is replaced by a digital device. It is sad to think that digitally supported interaction is changing and maybe even replacing physical interaction, which used to be the normal and natural one. I like to believe that we are still striving for that.

CONCLUSION

... Like, an old friend gives us a sense of security, a feeling that some things at least stay the same. It's a feeling we need very much in this changing world. Every day we are bombarded by choices, we need to make instant decisions. We are in endless combat with our own environment, with all its paste and all its variety, its choice and over choice...

A monolog from the movie Future Shock , based on the book "Future Shock" by Alvin Toffler

Nowadays groundbreaking discoveries and drastic changes are achieved faster than ever. It's getting harder and harder to take things for granted, as modern society is built on human values that keep evolving.

Naturally we doubt change because it seems frightening – it takes us outside of what we know, outside of our comfort zone. However, we are an evolving species and it is the rule of nature to move forward and discover new grounds. Therefore change is inevitable. Some people are curious and eager to try new things, but not everyone can evaluate the impact and ripple effect for the greater good. One point stands true - if things are changing rapidly it is hard to keep hold of true values. Values are our anchors, our ultimate truth - something we can refer to. For some that is religion - a stable and reliable reference. But for everyone the greatest anchor that makes us human - is being "human". But what does it mean to be "human"? What is the thing that makes us "human"? I believe that one of the greatest human values is to act consciously and compassionately in relation to others.

As discussed throughout the chapters, the main issue that needs to be addressed is the impact that the digital revolution is having on social interaction. Undeniably we combine digital and real in order to maximize our capabilities on an individual level. But it is sad to imagine that one day we might disappear and drown in this convenience. Thanks to technology, today we do our shopping and socializing from the comfort of our homes. Picture extreme, but probable future scenario, never leaving the house. If while talking to someone next to us we also check our e-mails or chat online with another person, is it still needed to be next to someone?

"Our modern technology has achieved a degree of sophistication beyond our wildest dreams. But this technology has exacted a pretty heavy price. We live in an age of anxiety, a time of stress. And with all our sophistication we are in fact, the victims of our own technological strength."

Oscar Welles "Future Shock" 1972

A computer game called Second Life, is giving people the opportunity to have, as the name suggests, a second life – a virtual one. Their tag line is “Experience endless surprises and unexpected delights in a world imagined and created by people like you”. In the game, one can do everything that is done in real life and all people inside the game are actual players. Initially the game was meant for people who have difficulties to interact socially, because it helps them to meet other people while remaining in their comfort zone. However, for many users this game became a great escape from real life. One might ask: why play this game instead of living life in the real world? The answer is simple – socializing virtually is a lot easier. When you don't have to show your face to people and stand there behind your actions, when you are in your comfort zone observing at a distance it is much easier. You can choose on what to react and what to ignore. You can scale and take back your reaction to things. In the virtual world the definition of “the moment” is different - it is created and manipulated over and over again.

The virtual world competing with the real one, creates new human values. Therefore we are forced to partly adopt these new values and partly adjust the old ones.

I believe that through design we can stimulate behaviors that benefit society. As designers we should aim to make people aware of what the indirect influence of things are. It is our obligation to closely look at innovation and question its impact in different aspects of life. In today's very connected society it is easier than ever to reach out to people through different media platforms. We can use these platforms as tools to softly adjust human behavior. For example, nowadays almost everyone has a Facebook profile. What if Facebook introduces a plugin that would hide the friends in our nearby surroundings? Maybe this would change our interactions with our friends. This might motivate us to physically meet more often instead of virtually engage.

The digital image of reality looks perfect but it doesn't really exist. Yet it shapes and sets the standards of what to expect from reality. Sort of ironic if you ask me. Perfection is abstraction that humankind will always strive for, but will possibly never reach. So if we can digitally achieve perfection that we can interact with, how could we not become lost in that virtual world of perfection?

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