Artificial intelligence (AI) in society, and the issue of human dignity

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tetem

THE BMS LAB

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MASTER PROGRAMME
PSTS

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This e-book has been published for the exhibition Reflections in Tetem, Enschede, and results from the research project Man and Machine - Learning in the Digital Society of prof.dr.ir. Mieke Boon in collaboration with ATLAS-UCT en PSTS students, and the BMS-lab at the Universiteit Twente.

Design e-book: Erik Peters


VIRTUALIZER

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WELCOME

Dear reader,

The exhibition Reflections reflects on the role of artificial intelligence (AI) in the near future and what this implies for human dignity.

Visitors of this exhibition are invited to reflect on a number of questions related to the theme of each installation. You can view these questions and the answers that visitors gave to them via the hyperlinks in the explanation of each installation in this e-book.

INTRODUCTION

You can first watch this introduction video to the exhibition.

What will our digital future look like? What kind of role will man and machine have in it? In the hybrid exhibition Reflections you will find yourself immersed, through the means of online and offline installations, in a story about algorithms, artificial intelligence and machine learning technology. Who are you? Can the machine get to know you? How does AI work? Does your life get better when algorithms 'optimize' your decisions? Is your expertise still worth something if machines think faster and search better? What will then be left of you?

This exhibition invites you to reflect on these questions and to take a moment to reflect on the societal challenges we are now facing. AI experts expect that by 2060 the machine will dominate man in all domains. But if people are no longer needed for their cognitive and artistic skills, what are we still needed for then? If machines will soon be able to think, calculate, paint and compose better than we ourselves, if their stories are more captivating and poignant than ours, from where do we as human beings then derive our meaning and what will then be our new role? In order to be happy as a human being in 2060 we need to think about our digital future, the relationship between man and machine and the place of human dignity therein.

Reflections is a collaboration between the University of Twente and Tetem. The exhibition was developed within the framework of Tetem's project Make Happiness and the research project Man and Machine – Learning in the Digital Society by Professor Mieke Boon with students of the Master's programme PSTS (Philosophy of Science, Technology and Society), the Bachelor's programme ATLAS-UCT, and the BMS lab of the University of Twente. The exhibition is designed by artist Jan Merlin Marski.

OVERVIEW

This exhibition consists of 8 installations that together form a storyline about artificial intelligence (AI) and self-learning systems (machine-learning technology, MLT) in our future society. Every installation has an English title in the form of a verb. The storyline is as follows:

1. Installation 1, Look, lets you look at yourself through different mirrors and filters – and asks you the question of who you are and what your identity is.

2. Installation 2, Understand, explains how AI works – and asks to what extent we should comprehend AI.

3. Installation 3, Experience, provides you with an experience of how apps use your data to tell you who you are – and asks the question of whether this approach of AI judges your identity and influences your self-image.

4. Installation 4, Create, shows the crucial role of human intelligence in the creation of data. Namely, the indispensable role of people who label and categorize data before it can be used by AI and self-learning systems – and asks the question of whether AI is actually as intelligent as we make it out to be.

5. Installation 5, Immerse, lets you experience a number of applications of AI, namely virtual reality (VR) and hyper reality – and asks the question of whether this experience contributes to your well-being.

6. Installation 6, Imagine, uses a number of video clips to show how filmmakers imagine the digital future – and poses the question of how you think about such depicted scenarios.

7. Installation 7, Learn, introduces you to a possible application of AI in the creation of future scenarios wherein you, as a citizen, can participate, learn and contribute – and asks the question of whether this form of citizen science could lead to better political decision-making.

8. Installation 8, Reflect, consists of the questions and quotes of the other seven installations. In this last installation you can subsequently see how other people think about these questions – and asks the question of whether or not citizens should participate in thinking about our digital future.

The structure of this e-book follows this storyline. The idea behind it is explained with every installation. Quotes and images that illustrate this idea are also shown for each installation. And you get access via hyperlinks to videos and websites that are shown in the physical installation, as well as to the reflection questions and a selection of the answers that visitors have given to them. The underlying idea for the installation developed by the students is often linked to their graduation research. Some of them have therefore also written a more in-depth essay for this e-book. These essays are the last part of this e-book.


.reality)
like)
VIRTUALIZER


(does.AI.know.you.better.than.you)


Koppelcode: 000000

1. LOOK

Lets you look at yourself through different mirrors and filters
– and asks you the question of who you are and what your identity is.

Carlos Mervich and Justin Loup

INTRODUCTION

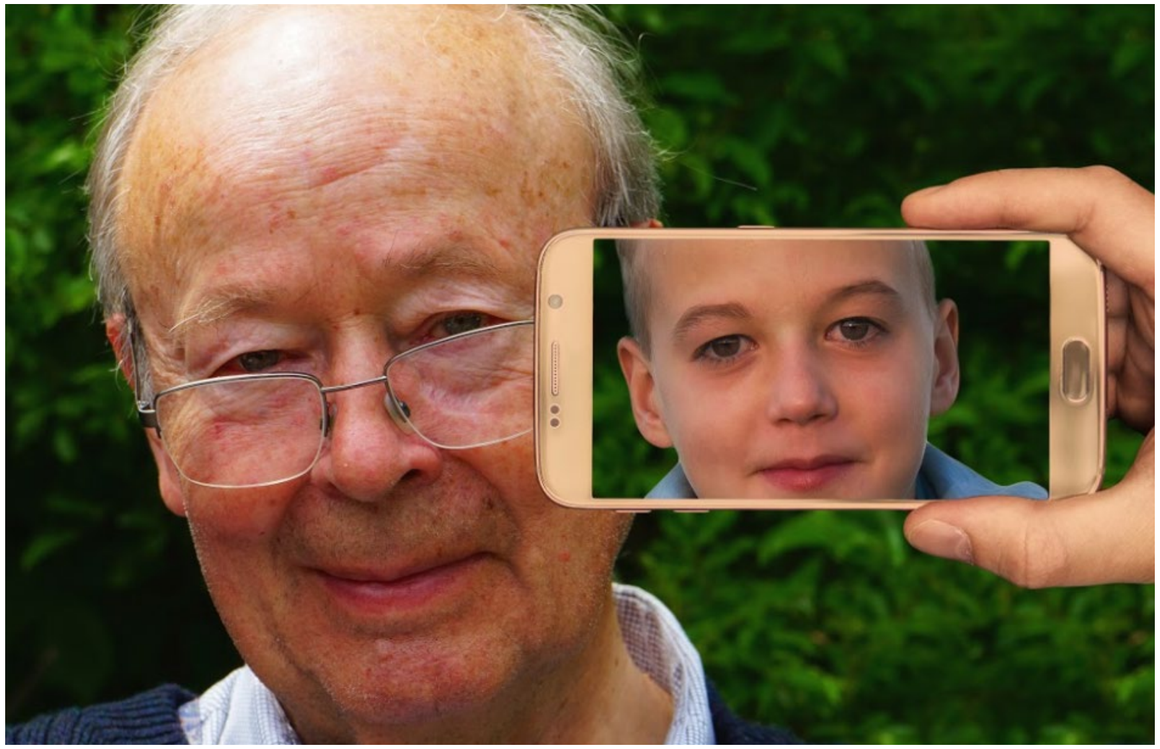
“Who am I?” introduces the main theme of “Reflections” by proposing an installation to reflect ourselves and upon ourselves. Technology has always mirrored our needs, potentials, aspirations and limits. It is with and through technology that we construct - and at the same time redefine - our identity. But how does the perception of our own identity change when AI technologies tell us who we are? How do we relate to our ‘self’ when our preferences, ages and even emotions are measured and displayed in front of us? It is increasingly complicated to understand what it means to be human in the digital age, and AI technologies put us in front of several significant questions. Human dignity and its worth are continuously questioned, especially when AI seems to become more and more human. What should humans become then? With this installation, we offer a moment to (literally) reflect. Visit the website of installation 1

PHILOSOPHICAL REFLECTION

Philosophy can help us to create a space to question ourselves and our relation to technology. Nothing better than a question can provide us with the tools to think about who we are, and how technology shapes who we think we are. “Who am I?” aims to put ourselves, as in front of a mirror, to look at the image that technology reflects of our bodies and identities. This installation represents the intricate, hybrid relation between humans and technology, where what we consider to be “real” is mixed with digital elements. Behind which of all these analog and digital reflections is the “real you”?

The idea of having an installation composed of both analogue and digital elements (a “non-reversing” mirror, and a digital screen displaying 4 different filtered faces) involves the participant into thinking what is the most representative of her/his identity. After the participant is asked to choose who the “real you” is, the results of the choices of all participants are statistically displayed.

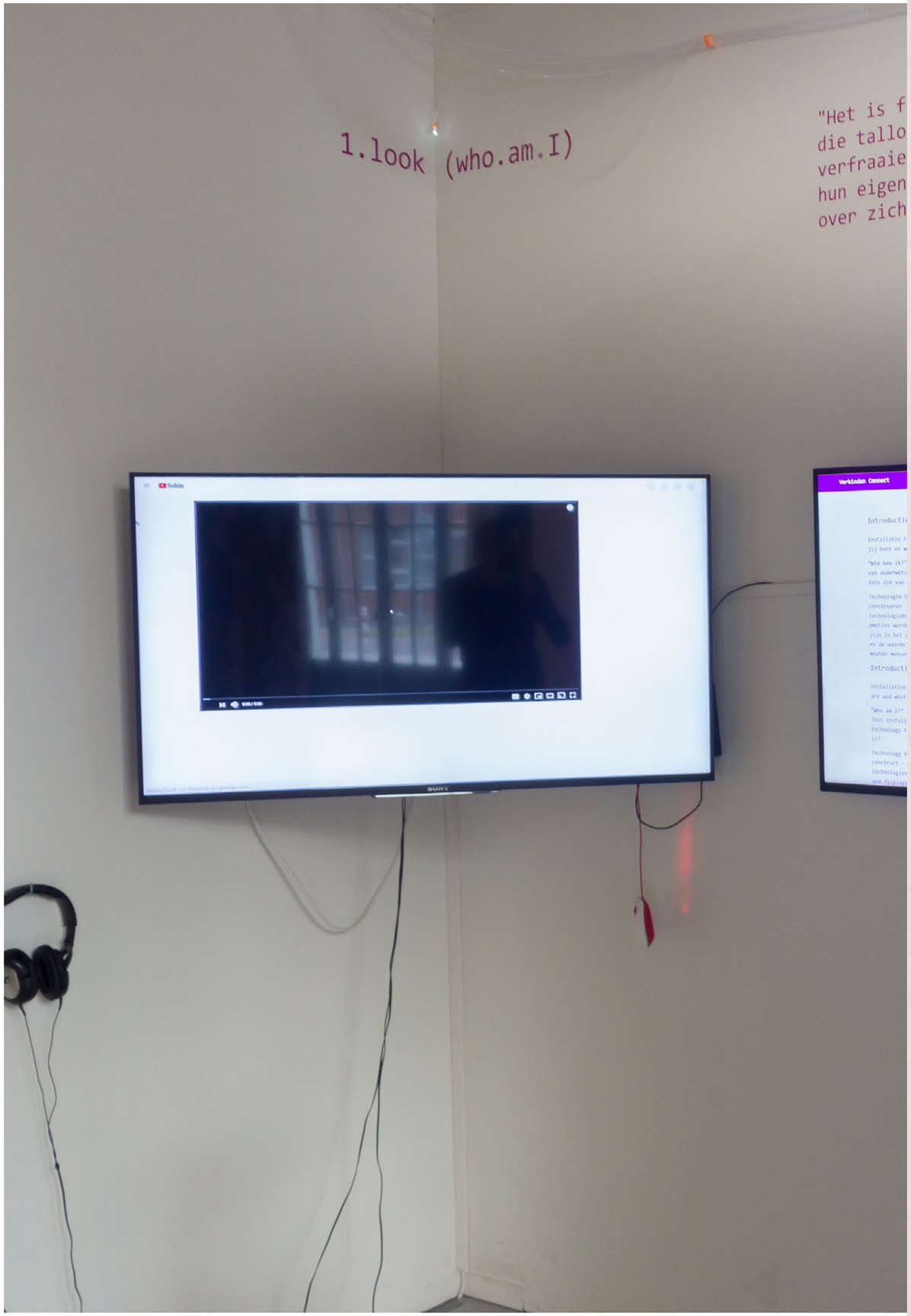
But what would an AI technology answer if we asked it “Who am I?”. AI researcher Kate Crawford and artist Trevor Paglen provide us with a visual suggestion in the



photography exhibition “Training Humans” last year at Fondazione Osservatorio in Milan: the exhibition exposes hundreds of images depicting the faces of people collected from all over the world, which are used as valuable information for AI systems to learn how to “see” the world, by recognizing patterns and structures among the data. AI can then learn how to recognize different features, such as age, gender and emotion in the faces of people within its field of vision.

> 27 years old, female, happy.
> 32 years old, male, angry.
> 14 years old, female, sad.

AI classifies, categorizes and interprets the world around it on the basis of the millions of pictures that are used to train it. But what can it really tell us about “Who am I”? How should we interpret the proposed results? These and other fascinating questions are what this installation aims to raise.


1.look (who.am.I)
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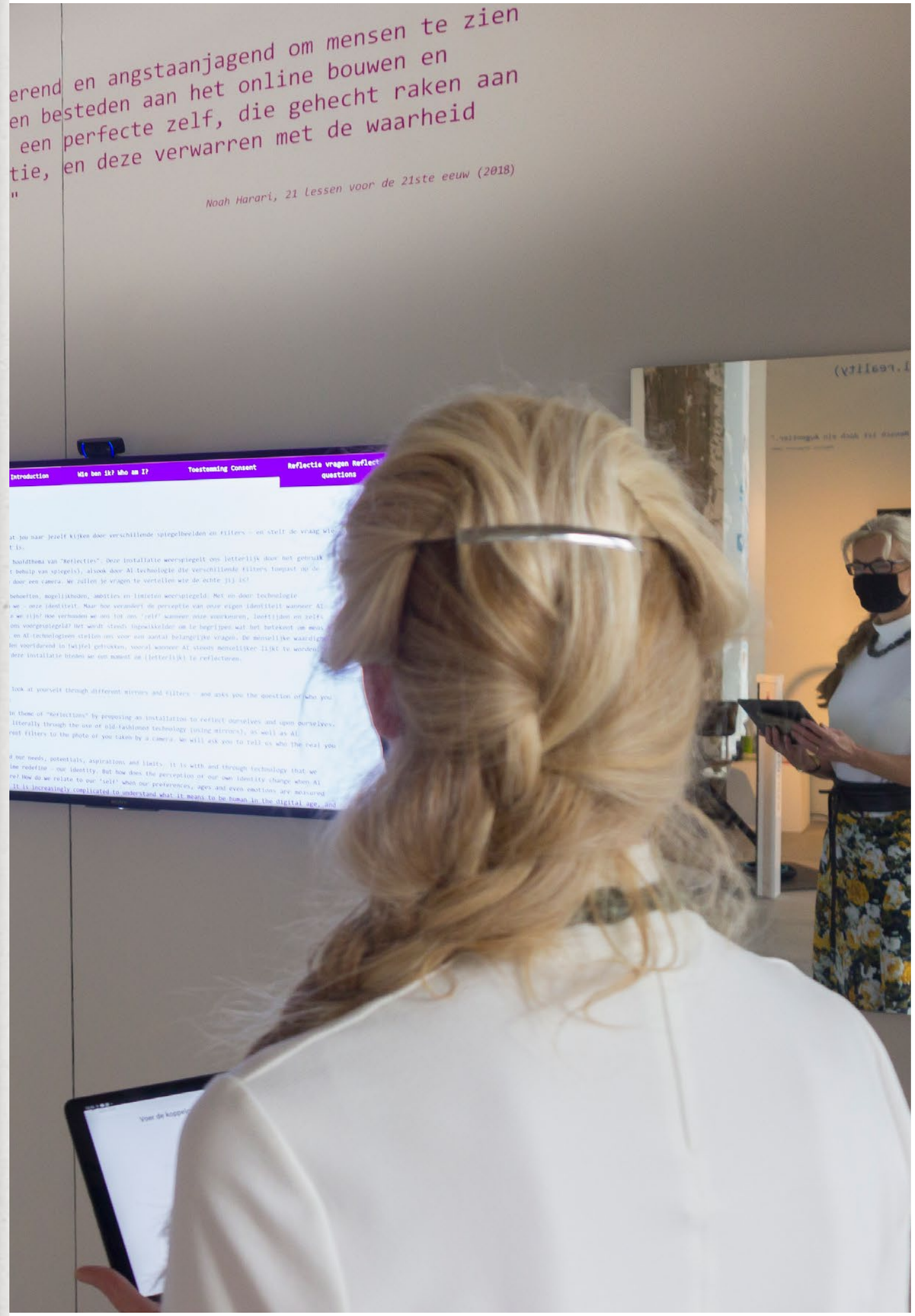
verfraaie
hun eigen
over zich
Verbinden Connect


erend en angstaanjagend om mensen te zien
en besteden aan het online bouwen en
een perfecte zelf, die gehecht raken aan
tie, en deze verwarren met de waarheid
"
Noah Harari, 21 lessen voor de 21ste eeuw (2018)
Introduction
Wie ben ik? Who am I?
Toestemming Consent
Reflectie vragen Reflect
questions

INTERVIEW ITALIAN EXHIBITION ‘TRAINING HUMANS’

This video (English, 5 minutes) shows an interview with the two creators, Kate Crawford and Trevor Paglen, of the exhibition Training Humans. This exhibition took place at the Osservatorio Fondazione Prada in Milan (Italy) from the 12th of September 2019 until the 20th of February 2020. The video was made by Jacopo Farina and curated by Federico Circosta.
Several of quotes from this interview add to Installation 1 LOOK, and also point ahead to Installation 4 CREATE, which is about data labelling (such as the labelling of photos), and the crucial role in it of human intelligence:

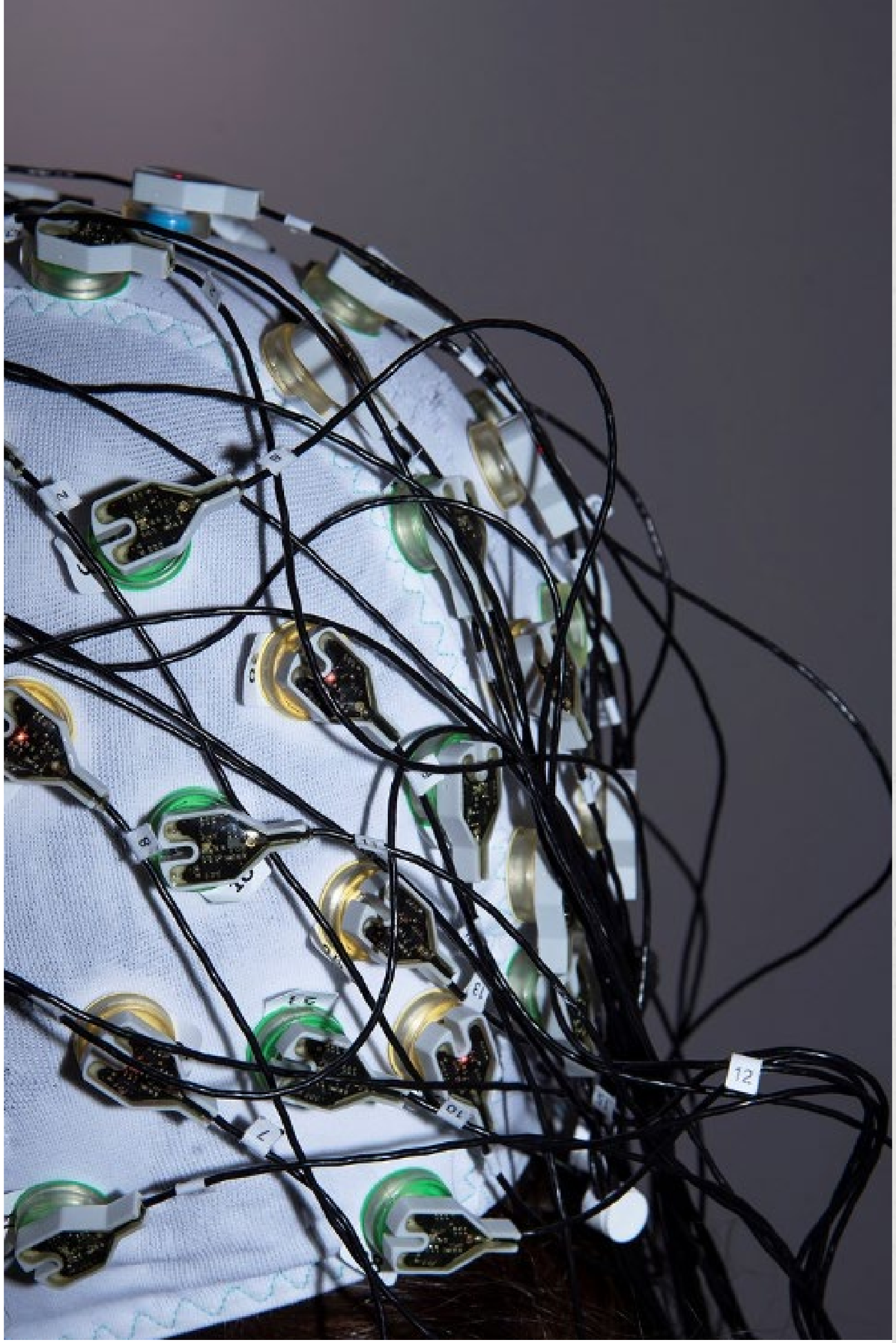
“We started to look at the corporate history of data collection & production. ... How AI systems learned to ‘see’ the world ... What happens when you open up the lid on a technical system, and see how humans have been classified, and then to think, what does that mean for every-day life? What does that mean for civil society when these systems are deciding for us how we will be classified?’ ... and how every exchange, every relationship is being tracked and understood and interpreted!” Kate Crawford in: http://www.fondazioneprada.org/project/training-humans/?lang=en

“In het tijdperk van Social Media zoals Facebook en Instagram kun je het proces waarbij mensen een mythe rond zichzelf creëren beter zien dan ooit, omdat ze dit proces hebben uitbesteed aan de computer in plaats van het zelf te bedenken. Het is fascinerend en angstaanjagend om mensen te zien die ontelbare uren doorbrengen om een ‘perfecte’ on line representatie van zichzelf te construeren en te verfraaien, waarbij ze gehecht raken aan hun eigen creatie, en deze vervolgens verwarren met de waarheid over henzelf.” (Vrij vertaald uit: Yuval Noah Harari, 21 lessons for the 21st century).

“When it comes to consumer technology products, they have, alongside their built-in eagerness to be liked, a built-in eagerness to reflect well on us... We star in our own movies, we photograph ourselves incessantly, we click the mouse and a machine confirms our sense of mastery. We like the mirror and the mirror likes us.” (Paraphrased from: Jonathan Franzen, Liking Is for Cowards. Go for What Hurts).

“Technology has always mirrored our needs, potentials, aspirations and limits. It is with and through technology that we construct - and at the same time redefine - who we are. How does your relationship with technology define how you perceive yourself?” (Carlo Mervich and Leon Borgdorf, this exhibition).

Here you can find the reflection questions for 1, look



2. UNDERSTAND

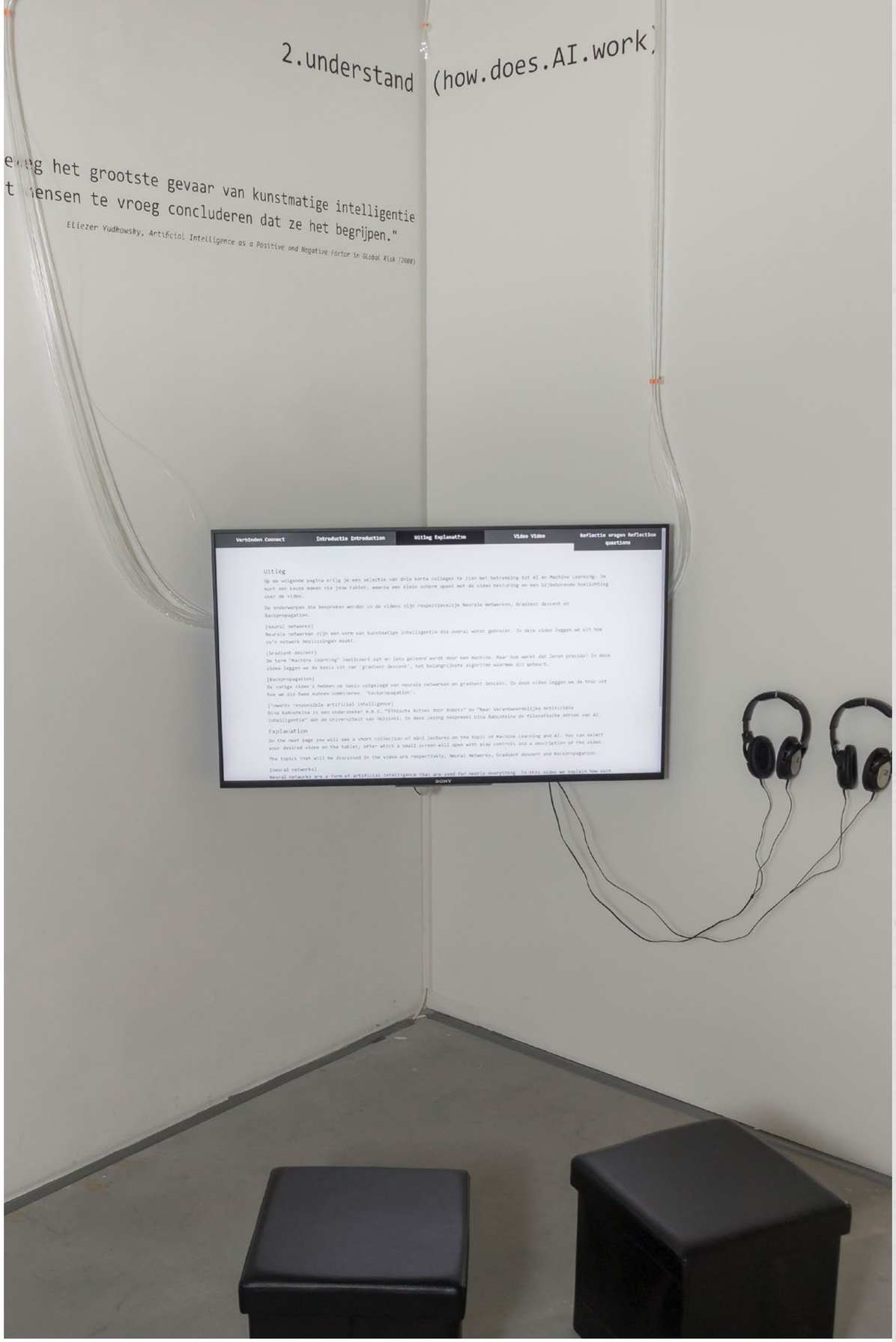
Explains how AI works
– and asks to what extent we should comprehend AI..

Auke Elfrink, Leon van der Neut and Anouk de Jong

INTRODUCTION

In order to be able to think carefully about what AI and machine learning means to people, it is important to understand what it actually is. How does a computer learn? What is a neural network? This installation consists of three videos that explain some of the fundamental concepts in AI, so that even people without mathematical knowledge can follow it.

Video 1: What is a neural network?
Video 2: How do algorithms learn?
Video 3: How does a neural network work?



"There's no one thing that defines AI. It's more like a tapestry of modern intelligent technologies knit together in a strategic fashion." – John Frémont, Founder and Chief Strategy Officer, Hypergiant

"Opacity seems to be at the very heart of new concerns about 'algorithms' among legal scholars and social scientists... The question naturally arises, what are the reasons for this state of not knowing? Is it because the algorithm is proprietary? Because it is complex or highly technical? Or are there, perhaps, other reasons?" – Jenna Burrell, How the machine 'thinks': Understanding opacity in machine learning algorithms.

A huge amount of data is needed for these kinds of AI applications. In installation 4 CREATE we ask the question of where this data comes from. You will learn that the creation of data still requires a lot of human intelligence.

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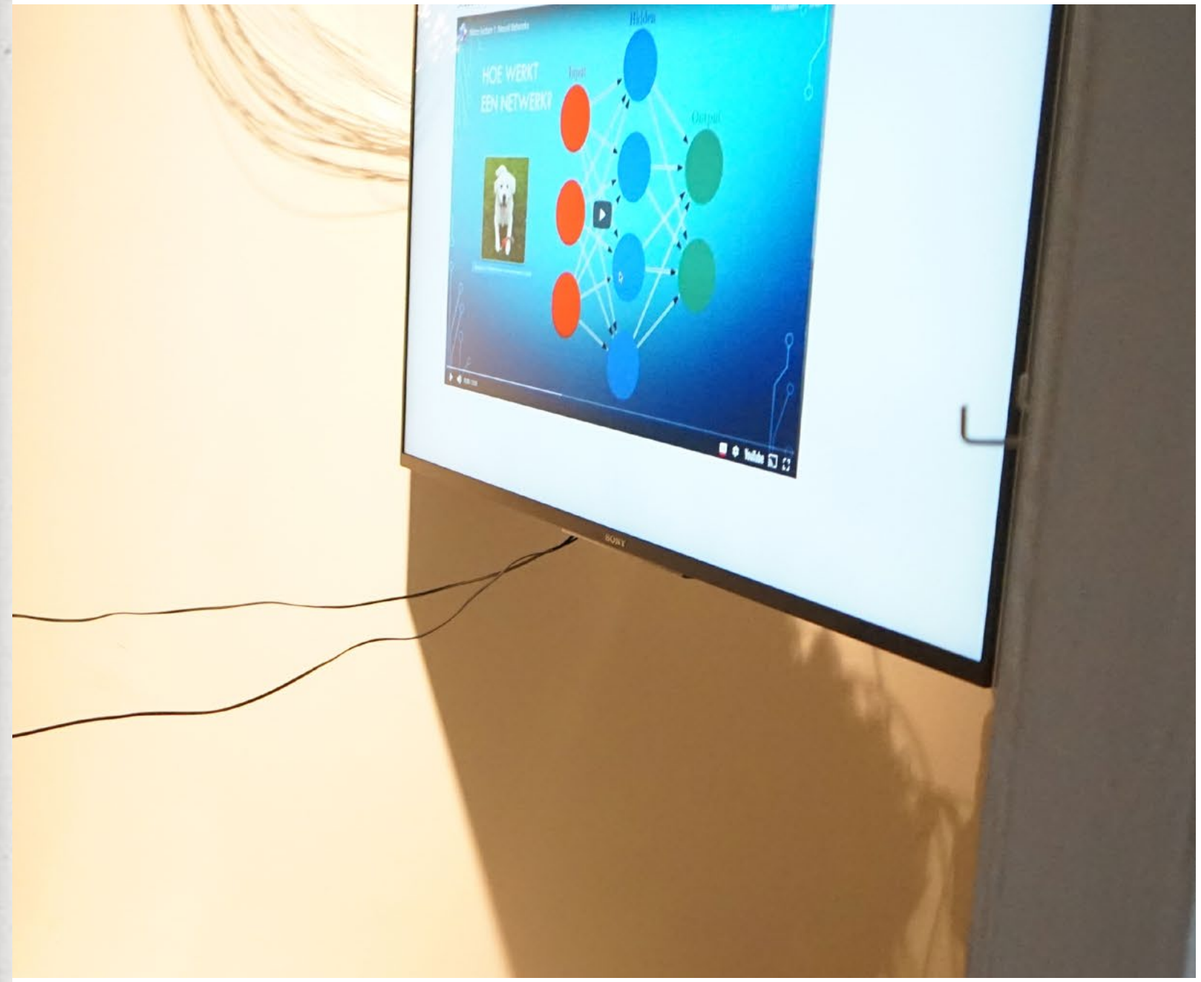
Additionally, in this installation you can watch a video lecture by Dina Babushkina available. Dina Babushkina is a researcher in "Ethical Actions by Robots" and "Towards Responsible Artificial Intelligence" at the University of Helsinki. In this lecture Dina Babushkina discusses the philosophical ethics of AI.

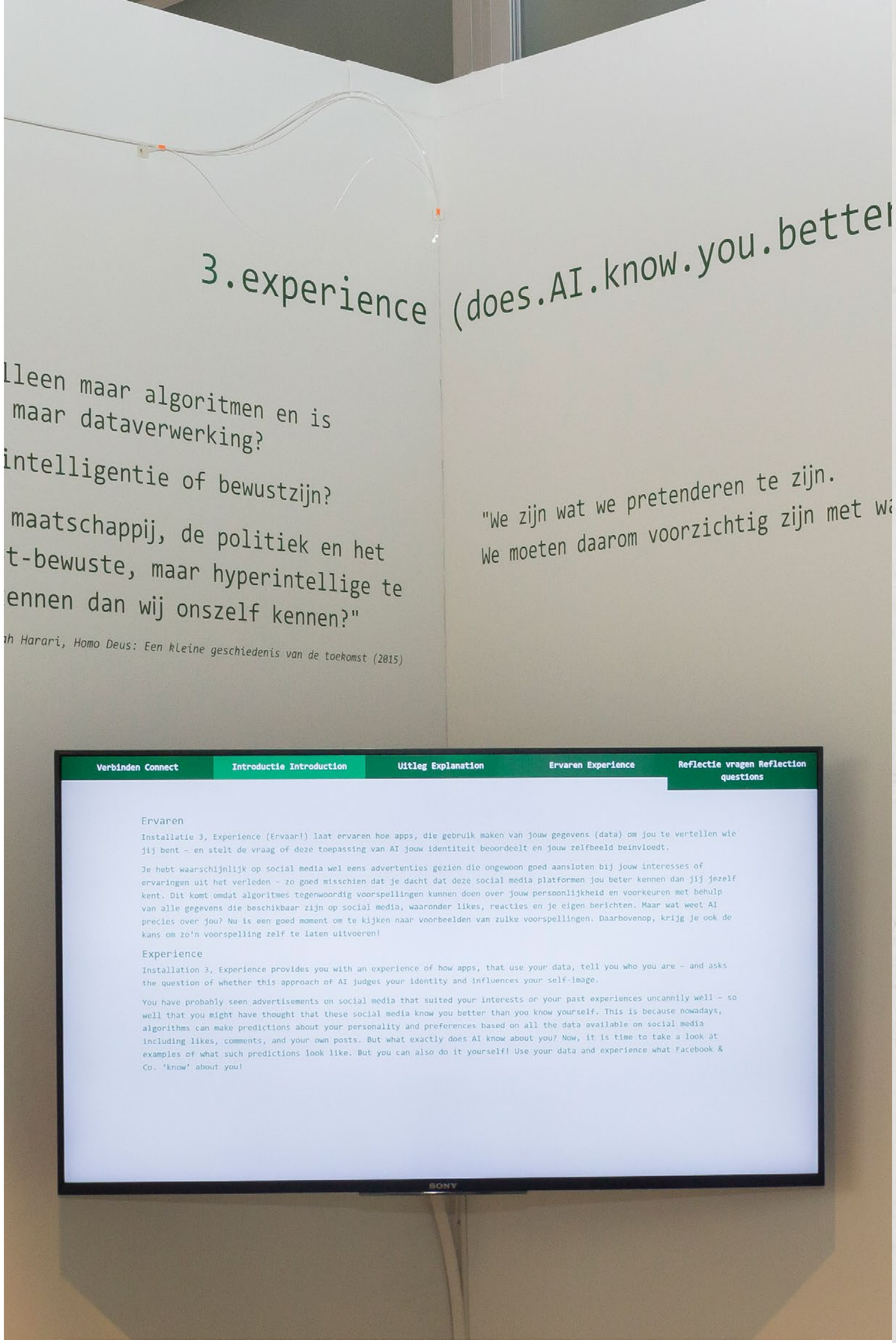
"Some people call this artificial intelligence, but the reality is this technology will enhance us. So instead of artificial intelligence, I think we'll augment our intelligence." – Ginni Rometty, executive director IBM.

"Elon Musk argued that what we need right now from governments isn't oversight but insight: specifically, technically capable people in government positions who can monitor AI's progress and steer it if warranted down the road." – Max Tegmark, Life 3.0: Being Human in the Age of Artificial Intelligence.

"By far the greatest danger of Artificial Intelligence is that people conclude too early that they understand it." – Eliezer Yudkowsky, Artificial Intelligence as a Positive and Negative Factor in Global Risk.

Here you find the reflection questions for 2. understand.





3. EXPERIENCE

Provides you with an experience of how apps, that use your data, tell you who you are – and asks the question of whether this approach of AI judges your identity and influences your self-image.

Leon Borgdorf and Aylin Ünes

INTRODUCTION

You have probably seen advertisements on social media that suited your interests or your past experiences uncannily well - so well that you might have thought that these social media know you better than you know yourself. This is because nowadays, algorithms can make predictions about your personality and preferences based on all the data available on social media including likes, comments, and your own posts. But what exactly does AI know about you? Now, it is time to take a look at examples of what such predictions look like. But you can also do it for yourself!

As a part of this installation, we would like to ask you to request your Facebook, Twitter, or LinkedIn data. An explanation on how this can be done can be found here: (scroll down). This is because this specific installation for a part works with your social media data and the results inferred from your data. Be aware that requesting your data might take two days.

Also, we invite you to take a look at the following three example profiles, and try to estimate their personalities and see if this estimate matches the AI prediction.

ANNE JANSEN
TIM VAN DEN BERG
JAN DE HAAN

Visit the website of Apply Magic Sauce eand upload the data files you requested from Facebook, Twitter or LinkedIn. While uploading the data, we invite you to do a personality test that can be conducted here or here. This is a common personality test within the field of psychology and is called the Big5 (Openness, Conscientiousness, Extraverty, Agreeableness, Neuroticism). After filling in the personality test, compare your results with the results that the application Magic Sauce derives from your social media data.

"Yet if we take the really grand view of life, all other problems and developments are overshadowed by three interlinked processes:

1. Science is converging on an all-encompassing dogma, which says that organisms are algorithms and life is data processing.
2. Intelligence is decoupling from consciousness.
3. Non-conscious but highly intelligent algorithms may soon know us better than we know ourselves.

These three processes raise three key questions, which I hope will stick in your mind long after you have finished this book:

1. Are organisms really just algorithms, and is life really just data processing?
2. What's more valuable – intelligence or consciousness?
3. What will happen to society, politics and daily life when non-conscious but highly intelligent algorithms know us better than we know ourselves?"

(Yuval Noah Harari, Homo Deus: A Brief History of Tomorrow).

"We are what we pretend to be, so we must be careful about what we pretend to be." (Marc-Uwe Kling, Qualityland).

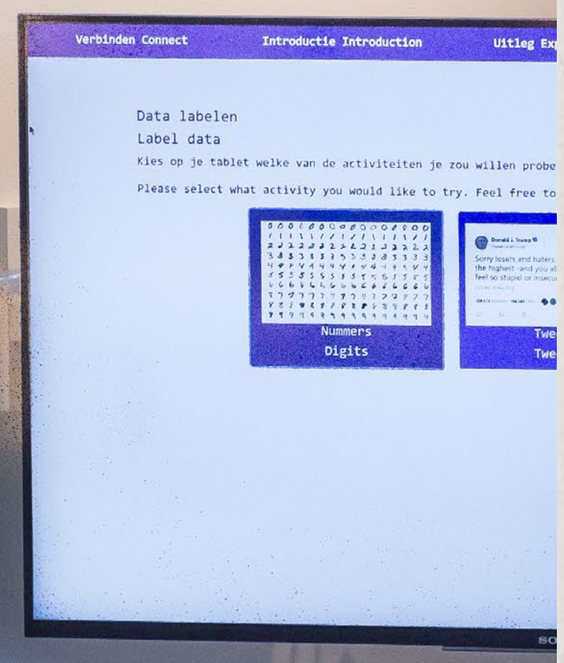
Here you can find the reflection questions of 3. experience.

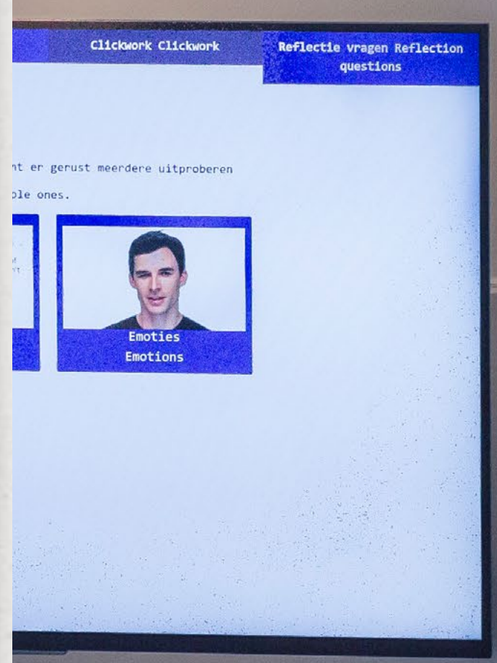
4.creat

"Als de mensen er niet waren geweest, die verdomde menser
zei Finnerty, 'die altijd weer verstrikt raken in de
machinerie. Als zij er niet waren geweest, dan zou de
wereld een paradijs voor ingenieurs zijn.'"

Kurt Vonnegut, Player Piano (

(where.do.data.come.from)





4. CREATE

Shows the crucial role of human intelligence in the creation of data. Namely, the indispensable role of people who label and categorize data before it can be used by AI and self-learning systems – and asks the question of whether AI is actually as intelligent as we make it out to be.

Carlo Mervich and Justin Loup

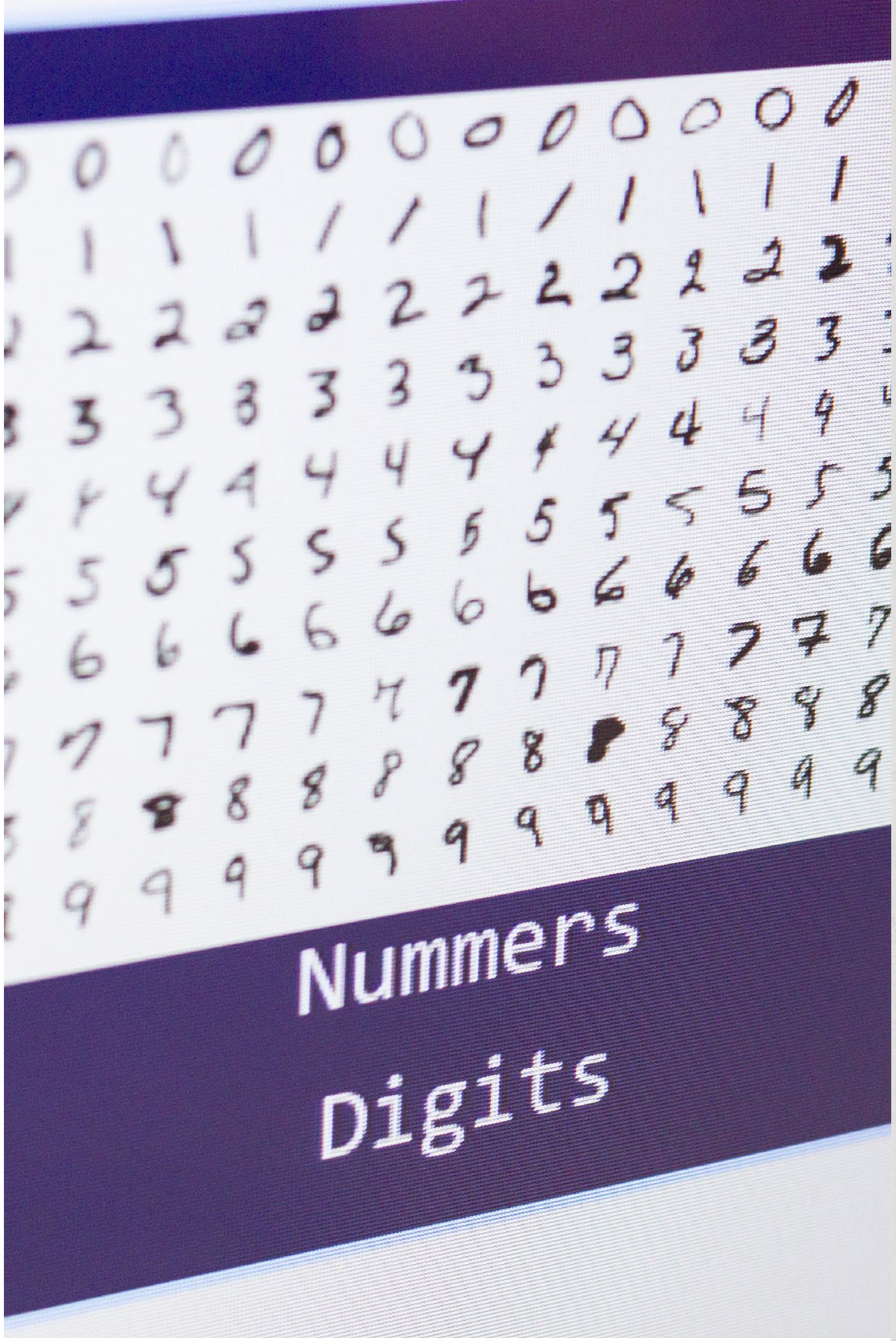
INTRODUCTION

Everyday, we witness new ways in which AI technologies are applied and integrated into society. Face recognition cameras, self-driving cars, smart speakers. However different between each other, there is a common, fundamental element that AI technologies need to have in order to function: huge amounts of data. Without enough data, these technologies would never be able to recognize human faces, drive themselves, or answer questions about the weather.

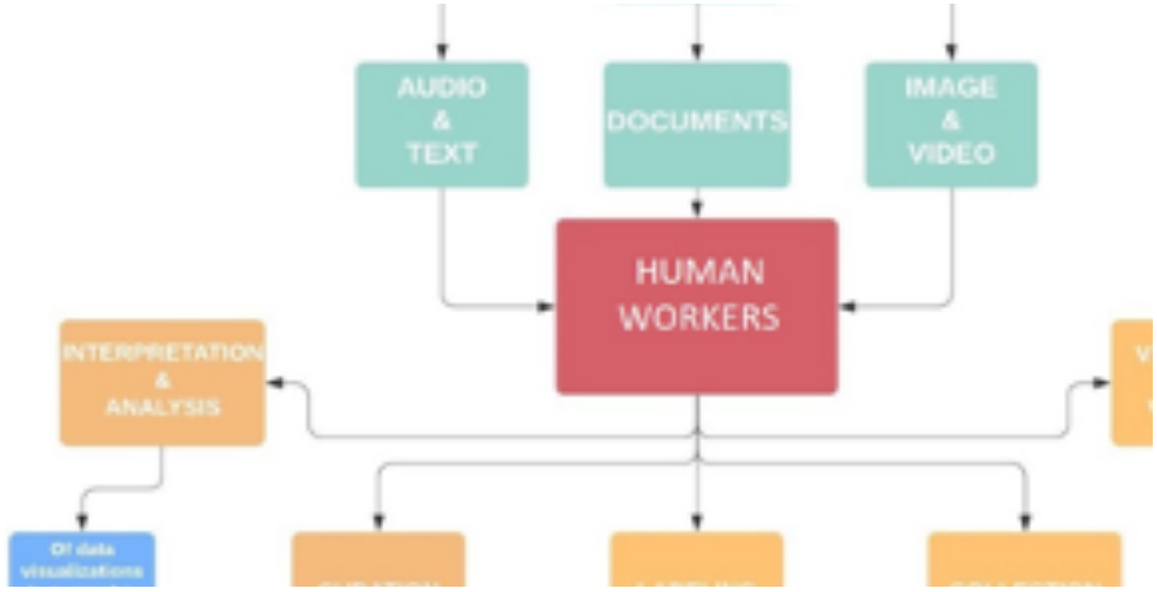
What hiddenly allows AI technologies to function, consists of a repetitive, labour-intensive work of data labeling, categorizing, classifying which involves a lot of humans. While these tasks are relatively easy for humans, for machines they are not; for this reason, a lot of humans are collectively teaching machines how to do that. With this installation, you will experience what it means to be an employee who takes care of the data labeling, categorization, and classification of data, which are only then suitable for application in AI technology.

In order to get a better sense of what this process of data creation entails, you can try it out for yourself through following this link. Three tasks are available for you to explore.

"'Als de mensen er niet waren geweest, die verdomde mensen', zei Finnerty, 'die altijd weer verstrikt raken in de machinerie. Als zij er niet waren geweest, dan zou de wereld een paradijs voor ingenieurs zijn.'" Vonnegut, K. (1952). Player piano. Dial Press.



"Fascinating in just the last decade: To see this explosion of images that have been harvested from the internet, and used to train computers. These systems are actually looking at us, and making decisions – in some ways we are being trained by these systems to perform and present ourselves." Kate Crawford and Trevor Paglen.



PHILOSOPHICAL REFLECTION

The experience involved in this installation, represents one of the various practices needed to provide data for developing AI systems. Many tech companies and organizations rely on the model of Crowdsourcing to accomplish these tasks. The use of crowdsourcing for developing AI systems, on a broader level, can be thought as a form of organization that allows businesses to involve the "crowd" to solve problems, obtaining information, and processing data. The crowd, a distributed network of people around the world, accomplish these objectives through digital platforms. It is at this point that some of the most interesting questions arise. Who is "the crowd"? What role does "the crowd" play in the development of AI? What are the working conditions to which "the crowd" is subjected? Answering these questions builds a way to understand the role of humans within the global process of AI development, and shines a light on the underregulated world of invisible labour which sustains AI-driven innovation today.

“As we dream of automation, we always need people to calibrate and train what we automate. Automation has hidden human faces.” Lilly Irani (2016). The hidden faces of automation.

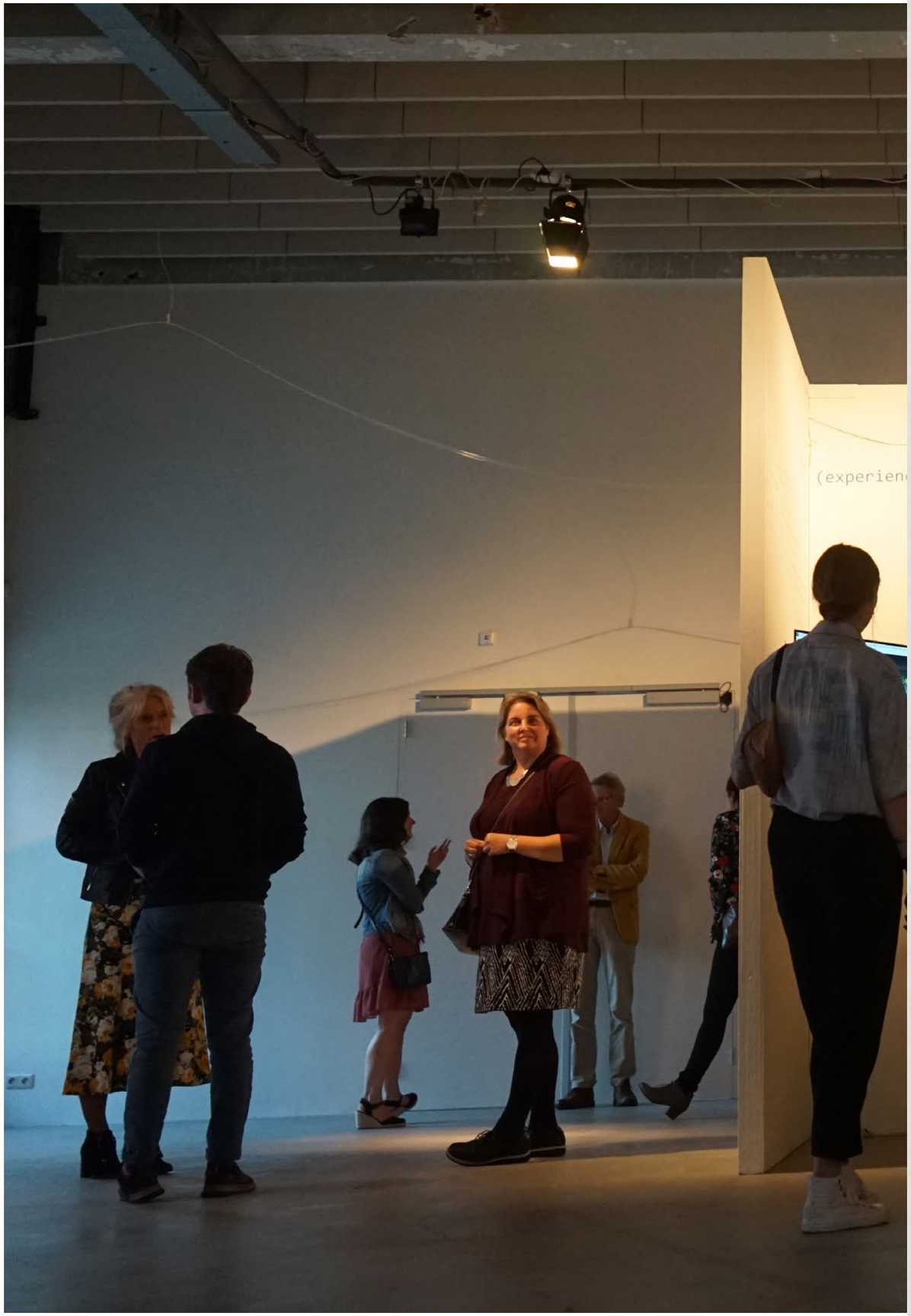
“What would computer science look like if it did not see human-algorithmic partnerships as an embarrassment, but rather as an ethical project where the humans were as, or even more, important than the algorithms? What would it look like if artificial intelligence and human-computer interaction put the human care and feeding of computing at the center rather than hiding it in the shadows?” Lilly Irani (2016). The hidden faces of automation.

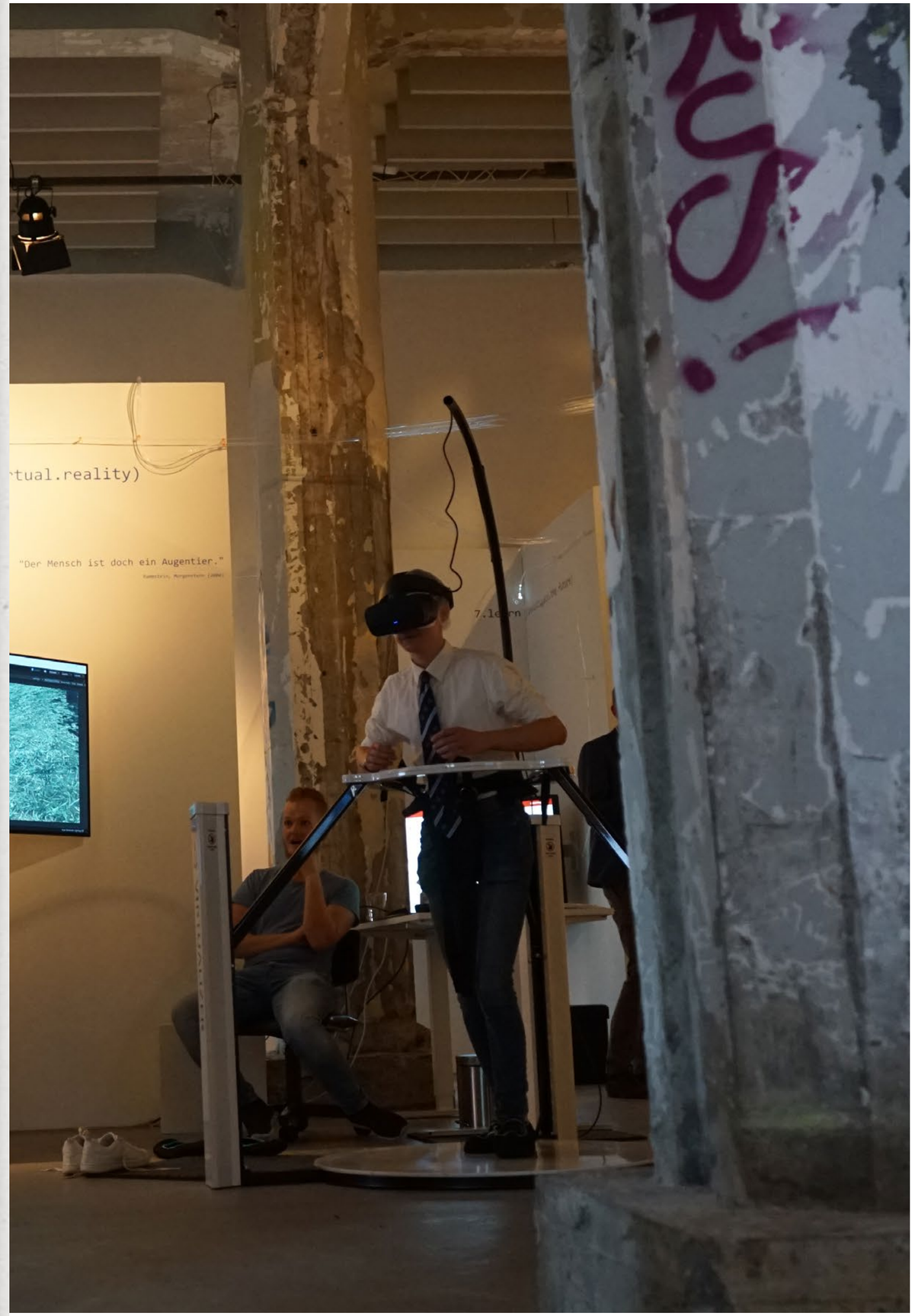
“Despite recurring fantasies about the end of work, the central fact of our industrial civilisation is labour, most of which falls far outside the realm of innovation” Russell & Vinsel (2016). Hail the maintainers.

“When you start classifying people it gets crazy very quickly. How would you know that that’s what that person is by looking at them. You start to develop categories that are not descriptions so much as they are judgments.” Kate Crawford and Trevor Paglen.

“We started to look at the corporate history of data collection and production. How AI systems learned to ‘see’ the world.” What happens when you open up the lid on a technical system, and see how humans have been classified, and then to think, what does that mean for every-day life? What does that mean for civil society when these systems are deciding for us how we will be classified?” Kate Crawford and Trevor Paglen

Here you can find the reflection questions for 4. create




"Der Mensch ist doch ein Augentier."

5. IMMERSE

Lets you experience a number of applications of AI, namely virtual reality (VR), augmented reality (AR), and hyper reality – and asks the question of whether this experience contributes to your well-being.

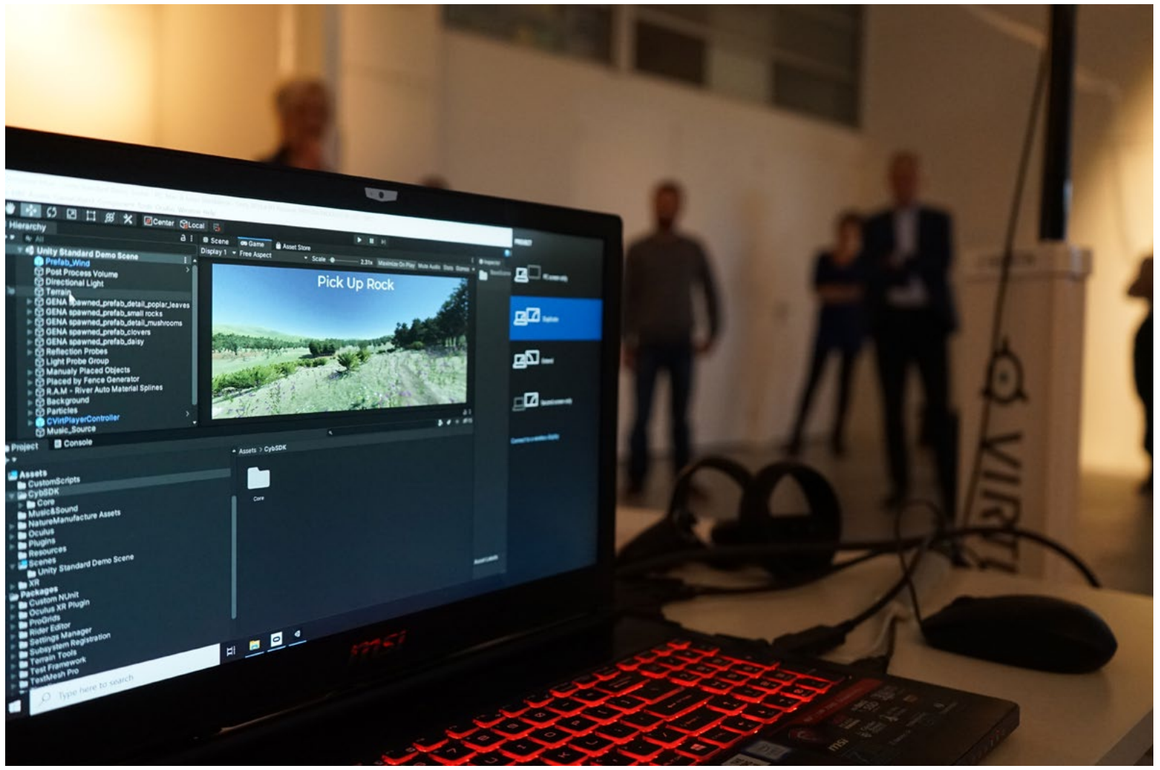
Carine van den Heuvel, Leon Borgdorf and Lucia (BMS lab)

INTRODUCTION

This part of the exhibition consists of an AI setup, wherein you can experience how certain technologies in our environment can have an influence on our experience. Virtual reality (VR) has been taking off all around the world for a number of years. As a result, you can find VR anywhere. That is because Virtual Reality makes it possible to fully immerse yourself in a created virtual world. This offers opportunities for both entertainment and research purposes. The BMS lab (at the University of Twente), who has provided this VR setup, is equipped for the latter and is able to support researchers in their studies that include Virtual reality.

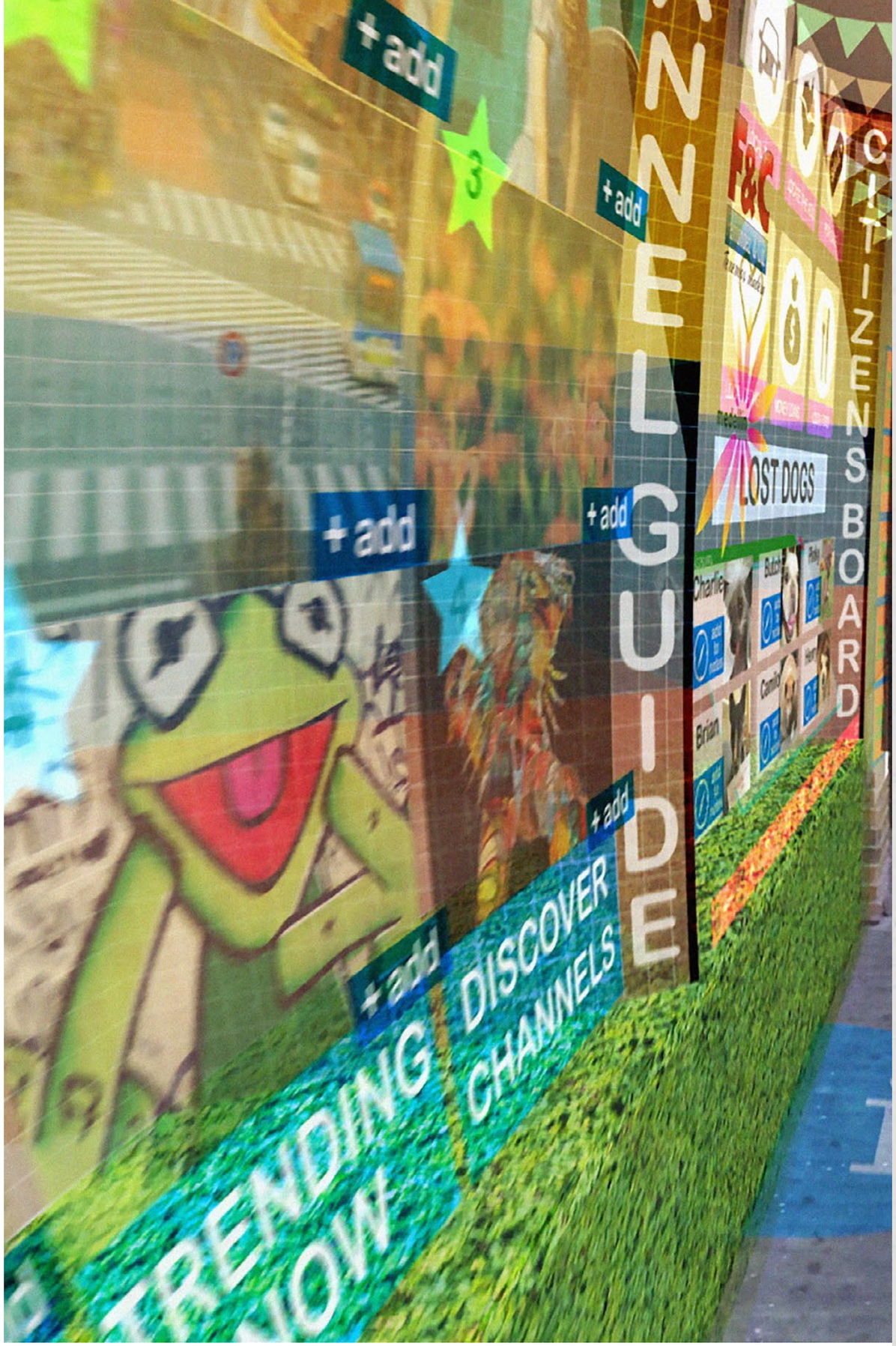
After having experienced VT, you are invited to reflect on your experience through a set of questions. How did it feel to be in the VR world? What do you see as positive aspects of such a simulation? And also important, did it actually feel real to you? If not, which parts of reality are missing in your experience?

Finally, we will also introduce you to Augmented Reality (AR). AR goes even further than the immersion of VR and will, thereby, once again bring forth new questions concerning our digital future.



VIDEO HYPER-REALITY BY KEIICHI MATSUDA

Hyper-Reality (total runtime approximately 6 minutes) is a concept film by Keiichi Matsuda. It presents a provocative and kaleidoscopic new vision of the future, where physical and virtual realities have merged, and the city is saturated in media. It is the latest work in an ongoing research-by-design project by Keiichi Matsuda; previous works include Domestic Robocop, Augmented City 3D and Keiichi's Master's thesis Domesti/city. If you are interested in supporting the project, sponsoring the next work or would like to find out more, please send a hello to info@km.cx.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CHANNEL GUIDE
CITIZENS BOARD
LOST DOGS
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PHILOSOPHICAL REFLECTION

“Cogito ergo sum - ‘I think, therefore I am’ is one of the most well-known statements by the French philosopher René Descartes and refers to his thoughts in his famous meditations. Descartes comes to this conclusion by what is now called Cartesian doubt, meaning that he doubts all his beliefs in order to figure out which ones are actually true. He questions sensual experiences, arguing that these deceive him. The only belief that resists his Cartesian doubt is that there is thinking in the form of doubting, and that it is him who performs this doubting. Based on this, Descartes arrives at his so-called Cartesian Dualism which assumes the existence of only two types of substances: mind and matter (the immaterial res cogitans and the physical res extensa). Mind and matter are independent and unrelated substances. Descartes therefore assumes a mechanistic view on the body, referred to as res extensa, that only serves the purpose to function and consists of replaceable parts. Meanwhile, res cogitans refers to the mind that determines his identity. Therefore, for Descartes, who describes himself as a “thinking thing”, the self is located in the mind – not in the body.

“Avoid overthinking the existential philosophy of the question, and just consider, if you were in a virtual world that was indistinguishable from the real world, would your visit to the Eiffel Tower be less enjoyable? Would you rather walk around the pyramids in real life, or walk on top of the pyramids in a real-seeming virtual world?” - Joshua Vanderwall, Virtual Reality is About Much More Than Games, The Escapist, December 15, 2016

“Der Mensch ist doch ein Augentier.” - In Rammstein’s Song Morgenstern

Such a view on the mind and the body is heavily contested and many philosophers and ordinary people would disagree with it. Though, as Ian Hacking (2007) argues, current practices in Western societies actually show an implicit Cartesian Dualism, which is encouraged by technological development. He comes to this conclusion by looking at these practices at different places and at how they developed over time like organ donation or the conception of death. According to Hacking (2007), Western countries nowadays define death by brain death. Thus, the self is located in the mind – not in the body. When the mind is not working anymore, one is considered dead. Instead, in the past, death was defined by when the heart stopped beating – thus when the body stopped working (Hacking, 2007, p.81). Another example by Hacking is organ donation. In many Western countries, organs are donated after a person dies, either because the donor actively permits it or does not actively prevent it – depending on the country (Hacking, 2007, p.83). Here as well, the body is seen as working in parts that can be substituted and the body significantly loses significance after the mind ceases to exist.

In line with the underlying Cartesian Dualism, there is also the idea that vision is a privileged sense – an idea that goes back to Plato and Aristotle. For both of them, seeing played a major epistemic role, which is why Plato, actually a proponent of body/mind dualism, emphasised ‘ideas’ (Greek: ‘idein’ = to see) and Aristotle talked about theories (Greek: ‘theōros’ = spectator). Let’s do what Ian Hacking did and take a look at current technologies to see whether such assumptions are embedded in our daily life. An interesting example can be seen in Virtual Reality as it provides you a new world that you can experience in your mind, while your body is somewhere else. The only experiences that matter seem to be visual and the role of the full body seems to be neglected. Similarly, online meetings and distance learning as they are

common now during the COVID-19 pandemic draw from technologies that tend to be focused on the visual (and auditive) experience while the bodies are ignored.

It is important, however, to remind ourselves that the neglect of the body can come with severe consequences. Most obviously, neglecting our bodies in terms of physical activity can have some implications regarding health. Also when learning, it helps to activate the whole body. Research has shown that we memorize our notes better if we take them by hand than with a computer (Mueller & Oppenheimer, 2014). Another study has shown that we tend to memorize objects better when executing a pantomimic movement related to the object (Cohen & Otterbein, 1992). Also, interaction with others has a strong physical component that is, however, often neglected. It is already well-known that a significant amount of information is transferred via non-verbal communication. Furthermore, being warmly touched by another person leads to the release of oxytocin, the so-called cuddle-hormone, which is related to several health-benefits (Holt-Lunstadt, Birmingham, & Light, 2008). For these reasons, we want to invite you to use this installation in order to reflect on how you experience these virtual realities. What does it offer you, and what do you think is missing?

"Our physical and virtual realities are becoming increasingly intertwined. Technologies such as VR, augmented reality, wearables, and the internet of things are pointing to a world where technology will envelop every aspect of our lives. It will be the glue between every interaction and experience, offering amazing possibilities, while also controlling the way we understand the world." – Keiichi Matsuda.

"Modern neuroscience research shows that the best way to 'brainjog' is simply jogging." - Manfred Spitzer

Here you can find the reflection questions for 5. immerse

6.imagine (what.does

"Mensen kijken niet eens meer omhoog.
De lucht kan paars worden... en jij...
zou het een maand lang niet eens merken."

Chris Gilhanney, Black Mirror (2019)

"Het is onmogelij
over het tot je b
die ze gebruiken,
Black Mirror raak
de rol van techno
De serie function
toekomstige unive

he.AI.future.look.like)

naar de serie *Black Mirror* te kijken en niet te fantaseren
ikking hebben over sommige van de diensten en systemen
fs als je ziet dat ze op gruwelijke wijze gebruikt worden.
s omdat de serie erin slaagt om voorzichtig te zijn met
, zonder het belang en de noviteit ervan te verminderen.
als een verdraaide "kijkmeester" van vele verschillende
aar bepaalde dingen verschrikkelijk uit de hand zijn gelopen."

Jenna Wortham, 'Black Mirror' and the Horrors and Delights of Technology (2015). New York Times.

6. IMAGINE

Uses a number of video (consists of 10 video's) to show how filmmakers imagine the digital future – and poses the question of how you think about such depicted scenarios

Carlo Mervich and Justin Loup

INTRODUCTION

This installation allows you to virtually travel in possible near futures and sometimes in already existing presents, where technology and, particularly, artificial intelligence is infused. Many artists, militants, and even certain corporations have tried to share their vision of what AI can do or may do in future societies. In this installation, the idea is to use the opportunity of showing you these many visions of our technological reality or our supposed technological future, while at the same time, giving you a glimpse of what is currently feasible here and now. Today, smart sensors coupled with machine learning technologies are already capable of scanning and reading your body, and from this, they can draw conclusions about your emotions and appreciation of the content you watch. Are you ready to enter in a situation where you will observe and be observed by AI technologies!?

Black Mirror: Season 1: 15 million merits

In a satire on big entertainment shows, we see a dystopian society in which people, all dressed in almost identical grey tracksuits, kick on exercise bikes all day long to earn merits, a form of virtual currency. People spend their time playing computer games, or watching talent shows, film comedies or porn movies while cycling on the exercise bike. The merits are also used to buy accessories for computer avatars. (from: Black Mirror Season 1).

Black Mirror: Season 3: Nosedive

Through the means of a points system any interaction with other people can be assessed. The level of someone's score affects the social status they enjoy, which companies want to do business with them and the score can even result in a discount on the rent of a house. Lacie is obsessed with her score and regularly posts things online that are not so much an outlet for her real emotions but rather just a way to increase her score. When a vague acquaintance with a very high score asks her to be a bridesmaid at her wedding, Lacie feels on top of the world. The wedding will be visited only by people with high scores, which gives Lacie the chance to boost her own score enormously.

Black Mirror: Season 4: USS Calister

Robert Daly is a video game programmer who does not seem to be highly considered and valued by his colleagues. When back home, he escapes his reality by entering a video game he made, where he has complete and tyrannic control on his colleagues' avatar. These fragments display the possible ease one could have to escape real-life for some sort of virtual comfort, instead of solving his issues.

Star Trek

In this passage, members from a crew discuss the humaneness of one of their 'robot' members, commander Data. What makes this humanoid artificial intelligence different? Why cannot he have the same rights, what makes him sentient or non-sentient?

Her

The film Her can be seen as an exploration of what could happen if delegating our fraternal, sentimental, emotional issues to a virtual assistant.

Hong Kong Protest: How Hong Kong Protesters Evade Surveillance With Tech

In Hong Kong pro-democracy protests coverage has displayed the rather ambivalent role current technologies already play. There, we saw militants attacking and breaking street furniture because it represented a technological threat for their privacy and consequently security.

The Guardian, short film: "The Last Job on Earth"

With its dystopian taste, this short film produced by the British newspaper 'The Guardian' may demand us what kind of future we really want? And this automatically questions what kind of present we want to build to accomplish or avoid these possible futures. Being the last worker on earth, being fired by a machine, is this what we hope for?

2001

While in a difficult situation, astronaut David 'Dave' Bowman, needs to deactivate his computer controlled spaceship. HAL9000, the rather smart technological entity in charge of the vessel, has decided that things should go in a different way. Then, a negotiation between the astronaut and 'his machine' emerges...

Rema 1000

Have you heard about home automation and SMART houses? The idea is to reduce your mental and physical activities, as an inhabitant, and to delegate them to A.I. systems, embodied in your home. While this could sound like an efficient idea, it may also reserve us some interesting surprises...
'...And the only one with access is me!', this is sometimes the illusion we cultivate about technologies, data, and other personal belonging. This video shows us a way, among many, it may actually not completely be the case.

Computer says no...

What when our computers seem to contradict us? Do we question the machine or do we question the people? Little Britain, a humoristic sketch show from the BBC, has been exploring what happens when these situations are managed by individuals having a singular trust in machines and a rather misanthropic feeling for human beings...

PHILOSOPHICAL REFLECTION

Obviously, the videos presented here are fantasies (utopian or dystopian), commercial products seeking to entertain you, or simply warnings. Even the suggested documentary pieces are intended to convey a message about certain political or societal facts. They may aim at creating reactions in the viewer as much as presenting facts. And in fact, by measuring several of your reactions and trying to interpret them through an artificial intelligence, we may have been able to see if the goals of each of these videos have been reached.

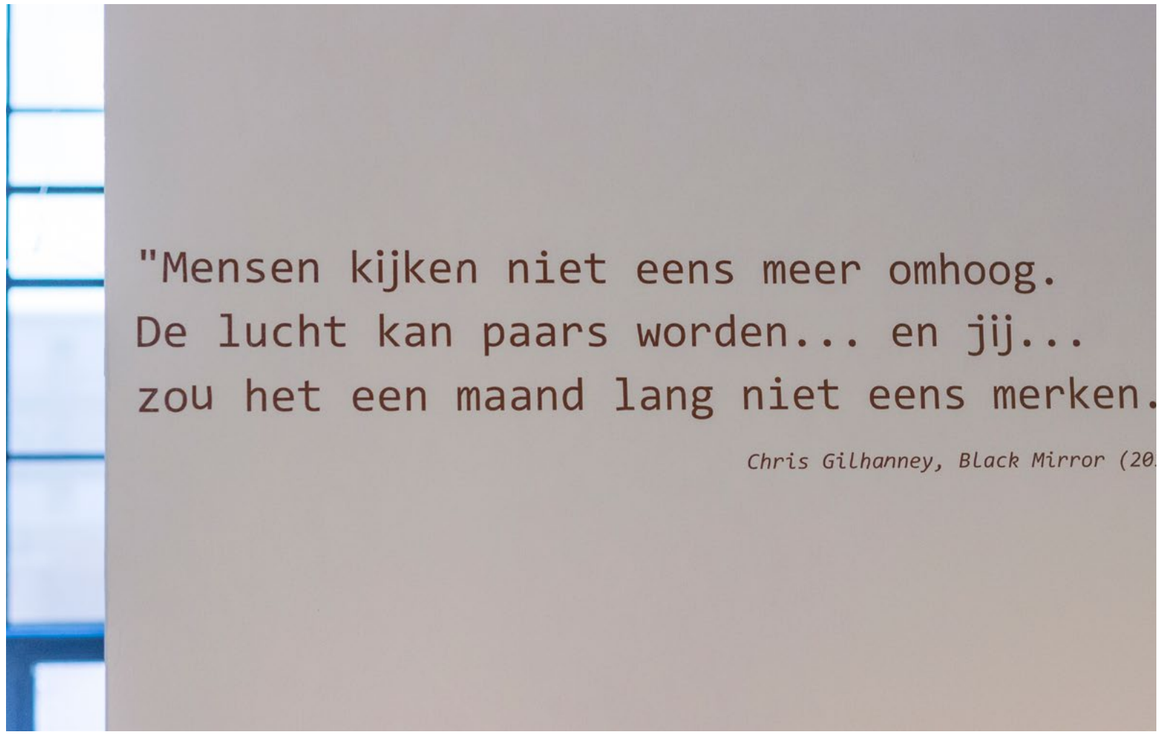
In this installation, while presenting you several scenarios, we have also tried to evaluate your physical and emotional reactions. Whether, what the AI has deducted and reported to you, has to be believed or not can certainly be questioned. Emotions can be expressed in so many ways, depending on the specific individual and their culture. What you may consider as a shameful reaction may simply be a form of respect for others that were raised in another culture.

In addition, tackling an emotion does not tell you anything about how one feels about the emotion they just lived. According to the AI, someone may look depressed or afraid while watching these films but even if we were sure that the AI is correct,

we would still not know how one lives these feelings. One might love to be afraid for instance (think about a horror film fan), while for someone else, this might be a terribly obnoxious situation. There, the AI may give identical results to both people, with lived situations that differ drastically.

In sum, there are numerous difficulties related to the value of the knowledge an AI can provide and we can wonder if all what was given to you as 'your emotions', is what you really expressed, or is this simply a mountain of prejudices coming out of the dubious dataset and methods on which the AI was built and trained. As you may have learned earlier, the information provided by an AI is constructed on many parameters where risks of random correlation and biased results are real.

Also, even if our installation would be somehow correct about what you felt, there is still a whole hidden part of yourself that escapes the system. Thus, although this installation may be funny, or convincing, it is good to keep in mind that AI technologies are far from being objective and omniscient. Thus, they may need to always be considered with a little healthy skepticism. On the other hand, if one day, machines really become able to fully understand human beings, we will certainly have to ask ourselves:



How come we humans have become so conform and standard objects that a machine is able to understand us? How is it that beings, so emotionally and intellectually complex, as the one we used to be, are now so predictable and readable?

Further reading.

About Black Mirror: “It is impossible to watch the show and not idly fantasize about having access to some of the services and systems they use, even as you see them used in horrifying ways. “Black Mirror” resonates because the show manages to exhibit caution about the role of technology without diminishing its importance and novelty, functioning as a twisted View-Master of many different future universes where things have strayed horribly off-course.” – Jenna Wortham, New York Times.

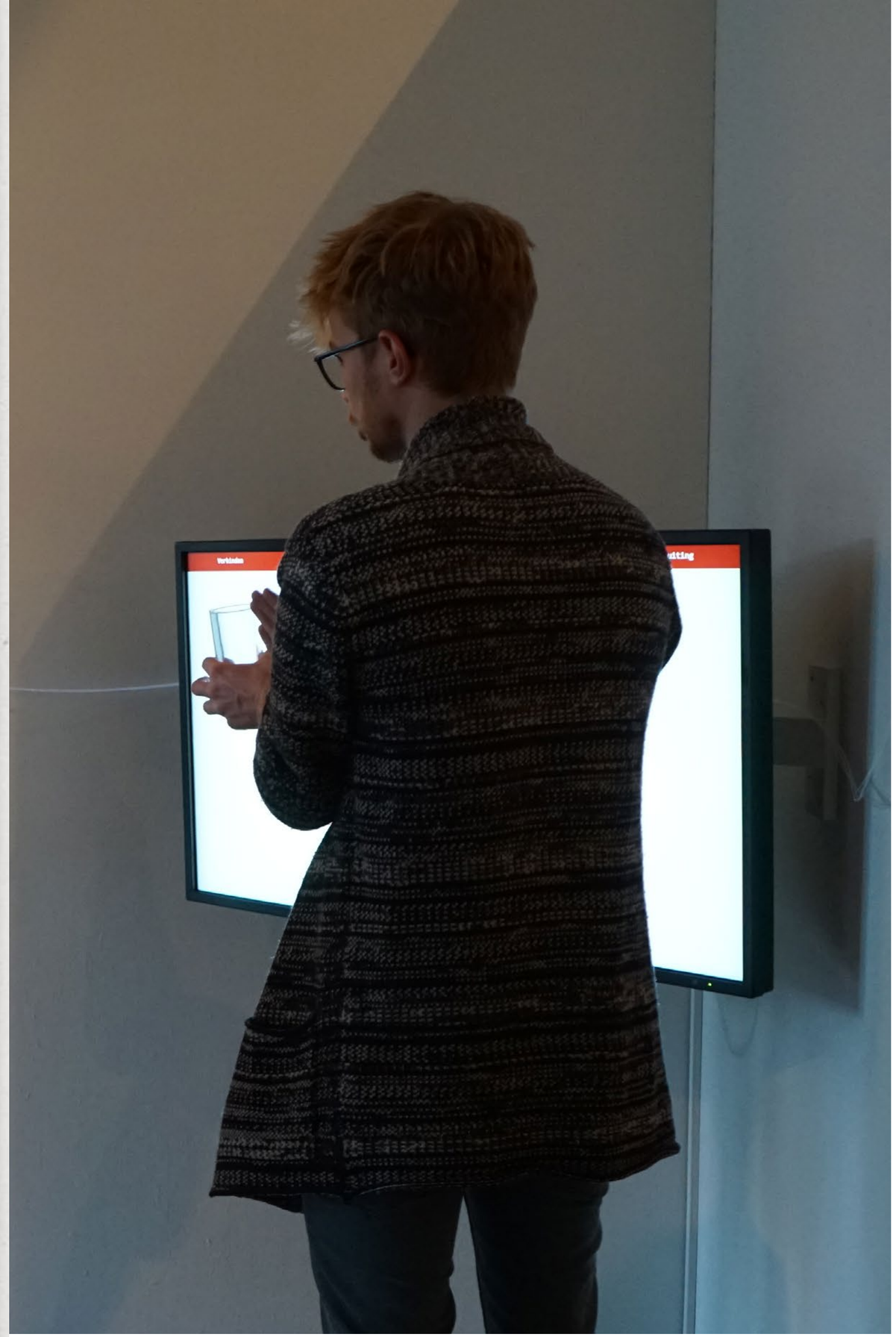
“People don’t even look up anymore. The sky could turn… purple and you…wouldn’t notice for a month.” – Chris (Andrew Scott) in Black Mirror

“We don’t need politicians, we’ve all got iPhones and computers, right? So any decision that has to be made, any policy, we just put it online. Let the people vote–thumbs up, thumbs down, the majority wins. That’s a democracy. That’s a –that’s an actual democracy. – Jack (Jason Flemyng) in Black Mirror

“So many choices, you end up not knowing which one you want.” – Frank (Joe Cole) in Black Mirror

Here you can find the reflection questions for 6. imagine


kelijkheid zelf, maar hulpmiddelen
derzoeken.
eën en modellen voor de werkelijkheid
k aan verstand - domheid is
rts, een rechter, een politicus
sche, juridische, politieke of
jn hoofd hebben, maar als het
er wijs aan uit de buurt te blijven."
In: Henk Procee, Intellectuele Passies - Academische vorming voor Kenners.



7. LEARN

Introduces you to a possible application of AI in the creation of future scenarios wherein you, as a citizen, can participate, learn and contribute – and asks the question of whether this form of citizen science could lead to better political decision-making.

Pim Schoolkate

INTRODUCTION

Our world is becoming increasingly complex. Whereas in the past we only had to worry about things such as whether the gain had gotten enough water, we are now being confronted with complex concepts such as climate change, a pandemic, a referendum on the Association Agreement between Europe and Ukraine, or the tax system. For many people these kinds of concepts form an impenetrable world of abstract ideas - a world that does not make much sense to them. Nevertheless, these people are asked to actively participate in decision-making regarding these issues.

This installation allows you to experience how a phenomenon, in this case the consequences of green urban planning, becomes clearer to users through playing around with a model of a specific phenomenon.

WHAT IS THE MODEL ABOUT?

Imagine a municipal official who deals with the green spaces within a city. The municipal official wants green spaces within the city, but also knows that green spaces have an effect on where people prefer to live. He wonders: “what would happen if I would create green spaces in a neighbourhood?”. It could be that unintentional urban developments arise when new urban green spaces are created. An example of this could be that if greenery is created close to a certain neighbourhood, the rental prices of the houses within this neighbourhood might increase. Low income households might have to move as a result of no longer being able to pay for their rent. To get a better understanding of how this works the municipal official has, together with a mathematician, built a simulation model.

HOW DOES THE MODEL WORK?

The simulation model works on the basis of a set of rules that determine what

happens in the model. Within the model there are households that prefer to live near the shopping and working center (CBD in Dutch) and those that prefer to live near urban green spaces. All households have an income and have to pay rent for their place of residence. The rental price is determined by the number of households living in the neighbourhood and the incomes of the households. If many households live in the same neighbourhood, the rents will go up. If few households live in the same neighbourhood, the rents will go down. This is, of course, not a realistic representation, but in this way we do get a picture of where all households prefer and are able to live. The model can, therefore, give us a clearer picture of potential consequences of creating green urban spaces

Here you can have a look at the model..

Controls

Setup commands

These are the commands to set the landscape of the model. The "Reset the model" button should be pressed if you wish to reset the model with the current selected landscape options mentioned below.
"Include-Forest" adds a ring of forest around the city.
"City_Landscape" gives 4 options for how the city looks like

Reset the model | Include-Forest

City_Landscape: Dynamic green spaces

Run the Model

By pressing '1 year' the model goes forward 1 year in time and by '5 year' 5 years in time. Some households will move to a new house, the rent will be updated and the graphs on the right will be

1 year | 5 years

Legend

Households:
- High Income: €300 to €400
- Middle Income: €200 to €300
- Low Income: €100 to €200

Patches:
- Green spaces
- Central Business District (CBD)
- Vacant land

Rent:
- Low rent: €50
- Middle rent: €175
- High Rent: €300

Toggle View

Hide the households and only see the rent distribution. Clicking this button a second time makes the households reappear.

Toggle Rent View

Model built by Pim Schoolkate. For further reference mail: p.a.schoolkate@gmail.com

ticks:

The City

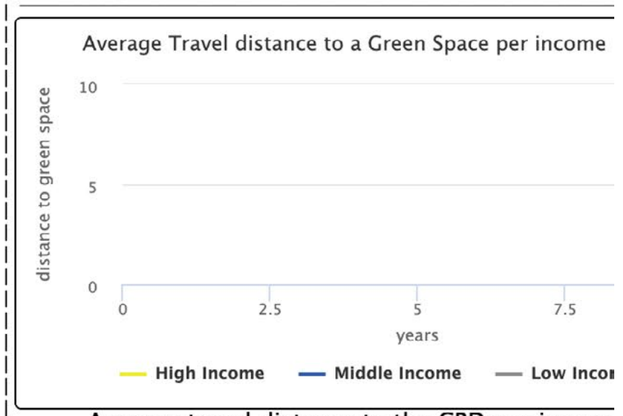
[redacted]

“Theories and models are not reality itself, but rather tools for investigating experiences within reality. Stupidity is people who see their own theories and models as reality itself. Stupidity is not a lack of reason, stupidity is a lack of judgement. A doctor, a lawyer, a politician or an engineer may be equipped with lots of medical, legal, political or scientific theories, but if there is a lack of good judgement, it is wise to steer clear of them.” (Freely taken from Immanuel Kant, Kritik der Reinen Vernunft B172, A113, from: Henk Procee, Intellectuele Passies - Academische vorming voor Kenners).

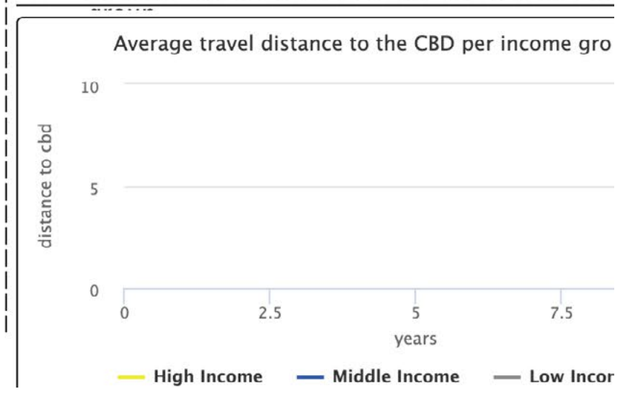
Here you can find the reflection questions for 7. learn

Outputs

Average Travel distance to a Green Space per inc



Average travel distance to the CBD per incom




VIRTUALIZER


FORCE!


VIRTUALIZER


"Drie grote vragen:
- Zijn organismen echt alleen maar algoritmen en het leven echt alleen maar dataverwerking?
- Wat is waardevoller: intelligentie of bewustzij
- Wat gebeurt er met de maatschappij, de politiek dagelijks leven als niet-bewuste, maar hyperinte algoritmen ons beter kennen dan wij onszelf kenn
Yuval Noah Harari, Homo Deus: Een kleine geschiedenis van de

8. REFLECT

Consists of the questions and quotes of the other seven installations. In this last installation you can subsequently see how other people think about these questions – and asks the question of whether or not citizens should participate in thinking about our digital future.

Mieke Boon and Carine van den Heuvel

INTRODUCTION

In this exhibition we reflect, among others things, on the question of how we see ourselves as a result of the increasing influential role of AI. Artificial intelligence that may increasingly take over from our own thinking about and judging the world around us. AI that may know us better than we know ourselves.

Together with many other visitors, you have just had many moments of reflection throughout this exhibition. This focus on reflection brings up a new reflection question. Namely, why is reflection so important? Is reflection something essential for the human being? And what would happen if we would not reflect as much anymore, through, for example, letting AI make certain decisions for us, without us engaging much in that decision process? In the following video fragment (2:03 min till 4:55 min) writer Yuval Noah Harari says "If you don't exercise this ability... it's like a muscle, you lose it." What will we lose as humanity if we would increasingly put less emphasis on our capacity to reflect? And would you say that it is crucial to continue exercising our ability to reflect, just as we have done in this exhibition?

The theme of this last installation is Reflection. This last installation shows answers from different people to the reflection questions in this exhibition. Here we also ask the question: What is reflection? The background for this is the question with which the creators of this exhibition started: What is the difference between humans and intelligent machines? If intelligent machines can think better than humans, what are humans still worth? This is the age-old philosophical question of human dignity. One answer to this (among many other possible answers) is:

The human ability to reflect makes people human, unlike other animals and unlike intelligent machines.

What is reflection? That is what you have done in this exhibition. With every installation you have been able to reflect through:

1. Looking at yourself and wondering: Who am I? (Installation 1 - LOOK).
2. Watching an explanation of machine-learning and AI and wonder: How does the machine 'think' and how do I think? (Installation 2 - UNDERSTAND).
3. Seeing the predictions by machine learning systems about who you are and to ask: How does it feel when the machine knows me better than I or my friends and family know me? (Installation 3 - EXPERIENCE).
4. Learning about the role of human intelligence in the digital society and ask: Are machines really that intelligent? (Installation 4 - CREATE).
5. To look at your own experiences with the virtual world (VR) and wonder: What is the difference between "real" and "virtual" experiences? (Installation 5 - IMMERSE).
6. Watching possible near futures and to ask yourself: What kind of digital future do I really want, and how do I stay human in that? (Installation 6 - IMAGINE).
7. And finally, experience that with the help of simulation models you can investigate possible worlds and wonder: Can AI also help to deal better with the complex world we live in? (Installation 7 - LEARN)

You have reflected on these kinds of questions. Could an intelligent machine do the same? We don't think so. We think that reflection is a very special ability of the human mind, of human thinking and feeling.

"Success breeds ambition, and our recent achievements are now pushing humankind to set itself even more daring goals. Having secured unprecedented levels of prosperity, health and harmony, and given our past record and our current values, humanity's next targets are likely to be immortality, happiness and divinity. Having reduced mortality from starvation, disease and violence, we will now aim to overcome old age and even death itself. Having saved people from abject misery, we will now aim to make them positively happy." (Yuval Noah Harari, Homo Deus: A Brief History of Tomorrow)

"In ancient times having power meant having access to data. Today having power means knowing what to ignore. So, considering everything that is happening in our chaotic world, what should we focus on?" (Yuval Noah Harari, Homo Deus: A Brief History of Tomorrow).

Reflection is the ability of people to become, as it were, spectators of themselves and of the world around them. Spectator of what is spontaneously given or present, and think about it critically (“questioning,” “inquiring,” “exploring”) and creatively.

We can, for instance, think about what we look like. As a result, we do not coincide with ourselves, whereas the dog, the cat and the bird do. In this way people can think about what they want to look like and shape that (within the limits of what is possible). I can think of which hairstyle, which clothes, and which make-up I want to wear to make me who I want to be.

People can also think about who they are as a person, about their psychological make-up, behavior and ways of reacting. In this, too, people do not coincide with themselves. Because by thinking about my inner self and behavior I can start to think that I want to be (a little) different, and wonder what I have to do to become who I want to be.

People can also become spectators of the environment in which they live: about their love relationships, the family, the house, nature, the municipality, the club, the school, the working environment, the political system, and more generally the culture in which they live. That environment determines who I am and the possibilities I have. But thanks to the power of reflection I can also think critically and creatively about how I would like that environment to be, and then (partly) give shape to it.

On the one hand, people are thus determined by their body (outer), their psyche (inner), and their environment. On the other hand, they can also shape their body, psyche and environment. The human ability to reflect plays an important role in this.

Through reflection people are able to partly shape who they are and how they live. In this, though, they are limited by what has been given: the body, the psyche and the environment with which they were brought into this world.

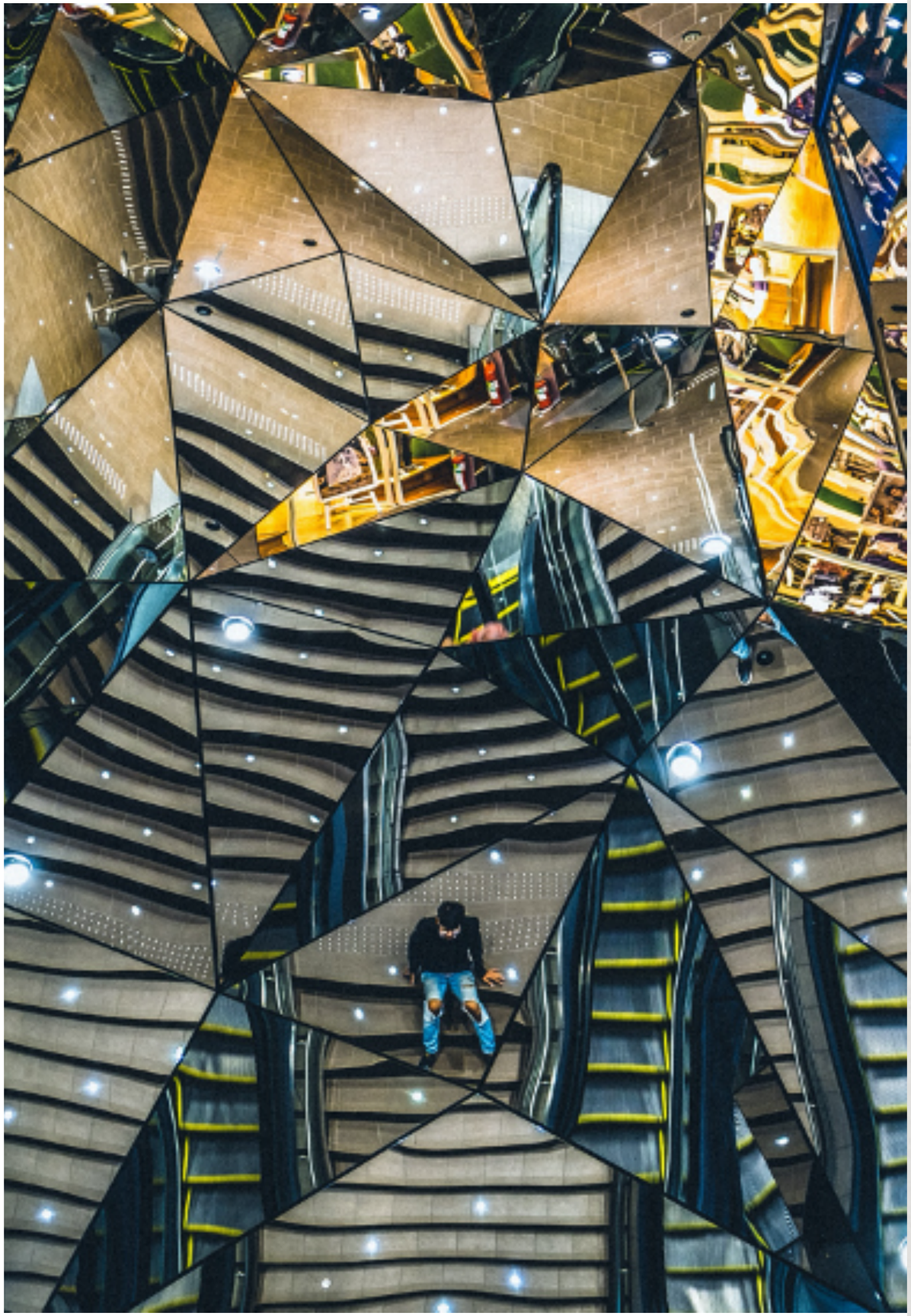
In this exhibition you were given the opportunity to form an idea of what the digital future, infiltrated by MLT and AI, can look like! And what this can mean for who we (want to) be as a human being, as a person, as an individual, in this whole. You have reflected on this from different angles through the reflection questions.

Suppose that, thanks to technological developments, machine-learning systems (which have used the data of all people worldwide) have developed algorithms with which my smartphone (on the basis of my personal data) can calculate for me the best fitting decisions are for me, and thus can tell me what I ‘actually’ ‘really’ want. Then I don’t have to think at all anymore. Because my smartphone can do better! I no longer have to make difficult, uncertain decisions. Because my smartphone knows me better than I know myself! That is quite convenient when I ask the question how I can best get from Enschede to Utrecht. The smartphone is a good technological tool for that. But it’s going to wring when it comes to the question how I want to shape my body, my psyche and my environment. If the smartphone determines this for me and I don’t even have to ask those reflection questions anymore, then who am I?

Here you can find the reflection questions for 8. reflect


8.reflect (investigate.your.own.ideas.about.AI)
"Succes is een bron voor ambitie, en onze recente prestaties
duwen de mensheid nu in de richting van het nastreven van
steeds gewaagder doelen. Na het veiligstellen van ongekende
niveaus van welvaart, gezondheid en harmonie, en gezien ons
verleden en onze huidige waarden, zullen de volgende doelen
van de mensheid waarschijnlijk onsterfelijkheid, geluk en
goddelijkheid zijn. Nu we sterfte door honger, ziekte en
geweld hebben teruggedrongen, zullen we ernaar streven
de ouderdom en zelfs de dood te overwinnen."


5.immerse (experience.virtual.reality)
VIRTUALIZER



JUSTIN LOOP - USING AI OR USED BY AI!?

Last summer, I was visiting the ‘Palace of the Popes’ in Avignon (France). This outstanding medieval Gothic palace was once the residence of a line of Catholic popes in the 14th and beginning of the 15th century. It is now an important tourist attraction which also serves as an exhibition center.

Upon entering the palace, I received from the staff a sophisticated technological set combining a tablet and earplugs. The tablet was showing my position in the palace, telling me where I should go next, and suggesting me to take pictures that I would receive on my personal email address later. Finally, during my visit, I needed to point the tablet on certain spots in the palace; while doing this, the camera of my tablet was filming the palace, and some virtual objects were displayed on top of the image, supposedly to increase the ‘quality of my experience’. What should have been a visit to an astonishing medieval palace was replaced by a (high) technological adventure, most probably using AI to analyze my position, and consequently suggesting activities or actions, or telling me where to watch and what to listen to. Yet, I was apparently not very able to manage that adventure. My system seemed to bug and tell me random things, or maybe I was the bug, unable to deal with what my tablet expected from me... Being not very patient, and skeptical anyway about unnecessary technologies, I just gave up after five minutes. Instead of talking angrily at my tablet, I just decided to discover the palace and walked through the museum with my now useless but still quite heavy device. The tablet was still constantly talking in the earplug, by the way; I was apparently too ignorant to understand how to cut the sound, so I just ignored it.

Although this was a rather annoying beginning, the palace was still quite nice to visit, I even took some pictures... No proper picture of the palace, however, just of the people around me. You have to imagine that everybody (including me for a short moment), was plugged and absorbed in their tablet. I had in front of me a crowd of individuals who seemed unable to avoid putting a tablet in between their eyes and the palace they wanted to visit. They were obeying the track the tablet was indicating, taking the pictures they were asked to take,... and also bumping in each other because they were unaware of all the others around them. Others, in fact many, were also completely overwhelmed by this new way of visiting. They seemed properly lost

in between an old technology, the palace, a new technology, the tablet, and all the others around them, the crowd of maladjusted humans in the same situation.

I must be honest, I ultimately had a sort of guilty pleasure while looking at this. It first made me think about the works of Jacques Ellul, a French intellectual who lived not so far from where I was (he spent all his life in Bordeaux). Ellul says, in the conclusion of one of his major works about technology:

"Enclosed within his artificial creation, man finds that there is "no exit"; that he cannot pierce the shell of technology to find again the ancient milieu to which he was adapted for hundreds of thousands of years.

[...] All men are constrained by means external to them to ends equally external. The further the technical mechanism develops which allows us to escape natural necessity, the more we are subjected to artificial technical necessities."

This is what I had in front of me, a bunch of unfitted humans, evidently unable to find an 'exit' to the device they were holding. Surely, they were liberated from the need to think about how to visit such a big piece of architecture, what to read, where to go, etc. Yet, they were also subjected to the technology, listening to it, and obeying it. They indeed seemed to be plunged in a new technological universe, changing the way they should visit and appreciate the world (the palace) around them.

Here, I already hear you telling me: "come on, they were not, and we are not, so determined by technology, neither so powerless in front of it. Nobody was forced to keep the tablet and obey it. You still could walk freely where you wanted, take pictures or not, etc... as you in fact did!"

Yes, it is true, nobody was forced... but everybody did it. And I am betting that you, while visiting this present exhibition, also obey(ed) a tablet, a robot, or the moving screens around you. You are or were not forced to do so, but you probably answered their call without really being aware that you could refuse it (like I did in accepting the device in the first place).

To me, this is the biggest danger of modern technology, including the AIs we are talking about in this exhibition. It is not that it will suppress jobs (it will also create some, most certainly); it is not that it can potentially be used for terrible purposes (surveillance, political oppression, etc.); neither it is that it will destroy the planet whatsoever (it may be the case, but it may also be the case that we will find new technologies to solve our former technological problem which put the planet under

threat). The biggest danger is simply that slowly, it would create a new kind of 'normal' around us, a new way of living and behaving in the world like a new way of seeing a palace, without us being even aware of it, or personally wanting it. It would tell us where to go, which palace's wall to look at, what email should we receive, what emotion did we have; in sum it will offer us, using Ellul's words again, a "victory [...] at the price of an even greater subjection to the forces of the artificial necessity of the technical society which has come to dominate our lives".

Don't get me wrong, I do not claim that we need to go back to an idealized state of nature. Maybe we do, but this is not what I want to argue for here. What I simply want to ask is to which extent are we still free to live within a world composed of technology like AI, whether we directly use them or not. We can wonder to which extent the technologies, and the new universe that is set by them, are just delivered to us and at our disposal... or are they constantly influencing us and, using Ellul's word, enclose us within our artificial creation?

"Human being is something that must be overcome," says the philosopher Friedrich Nietzsche. And then, he asks us: "What have you done to overcome him?". Sometimes I am wondering, maybe this is what we constantly try to do with our technologies and our AIs. We try to overcome the human, to improve our experience, to become more healthy, to live more efficiently, or simply to have a better museum's visit. Yet a question we could ask is do we overcome ourselves with AI, do we make ourselves "better" in any way, or do we simply "escape natural necessity" to subjugate ourselves to new "artificial technical necessities"?

As displayed by Ellul, it seems that our situation with technology is always a bit ambivalent. Last summer, I refused quite freely to use certain technologies, others did use them either consciously, maybe to improve their experience, or maybe just because the staff of the palace told them to. At the same time, it seems that we (visitors) were also used by our technology, they controlled our positions (even if we stopped caring about it), and gave us some sort of soft orders to do things (like taking pictures, hearing stories, etc.). Even if we think about our present exhibition, one could say you have learned a bit about what AI is; you 'used' some tools; you could watch videos, etc. But we also presented you to our AI, you became their subject (or you miss some big parts of the exhibition) and you did let yourself be analyzed by them. Without this happening, there is no AI, AI works by using data which are inherently related to humans.

Then, we could see our exhibition as an analogy to our relationship with technology. The technologies we encounter may use us as much as we use them. They may determine us as much as we determine them. They are not helping us to overcome

the human being, but rather seem to lead us into new forms of necessities (of being limited humans) or new and maybe more constraining episodes of our human life... Some, like Ellul, think that this situation is devastating, while others are more optimistic and see it as a phase that we can control. Now, the question is what do you think about this situation of being both master and prisoner, and what will you do about it?

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ADVERTENTIE

De samenwerking die het automerk heeft met Google is een primeur in de auto-industrie. Nog nooit zul je hierdoor als rijder zo'n allround één-op-één ervaring hebben gehad als bij de Polestar 2.

Je stapt op een zonnige ochtend met je gezin de auto in. Je roept 'Hey Google' en je auto weet direct al je instellingen, van je stuur- en stoelhoogte tot aan je muziekvoorkeur en zelfs je agenda. Je rijdt weg en koerst richting Bloemendaal met de zon in je rug. Je zweeft figuurlijk over de weg, omdat de Polestar 2 mooi uitgebalanceerd is en de hobbels in het asfalt als het ware absorbeert. Het systeem geeft automatisch aan waar de eerstvolgende snellader is. Dus onderweg maak je een korte pitstop, haalt koffie en koerst daarna weer verder richting zee. Aan boord heb je alle voorzieningen die volledig in je digitale leven passen.

Polestar wil altijd de grenzen verleggen, daarom is de Polestar 2 een primeur in elektrisch rijden. De volledig elektrische vijfdeurs fastback, een sportieve en gestroomlijnde uitvoering, is nu op de markt en als eerste automerk ter wereld wist Polestar een auto te ontwikkelen met ingebouwde Google-apps en -services. Polestar ontwikkelde in samenwerking met de techreus de geavanceerde Human Machine Interface (HMI). Door de ingebouwde Google-apps en -services is de Polestar 2 daarmee in feite zelf een complete digital device naast bijvoorbeeld je smartphone en tablet.

Het grote voordeel is dat je met dit systeem je smartphone niet hoeft in te schakelen om van de Google-apps en -services gebruik te maken. Heb je een internetverbinding in je auto, dan kun je apps installeren via de Google Play Store. Uiteraard kan je wel gewoon je telefoon koppelen indien gewenst.

De mogelijkheden van het HMI systeem zijn eigenlijk oneindig.

Hey Google

Wat kun je eigenlijk allemaal met HMI-functies van Google? Het is voice and go! De Google Assistent bedien je met je stem, waardoor je de functionaliteiten die de Polestar al heeft in werking kunt zetten door 'Hey Google' te zeggen. Je kunt je virtuele assistent allerlei opdrachten gaven. Je hebt automatische driver herkenning, dus de Polestar weet precies wat je voorkeuren zijn. Handig is ook de 'Do not disturb mode'. Een 360-graden bird view rondom de Polestar en de automatische snelheidswaarschuwingen dragen verder bij aan veiligheid en rijplezier.

Onderweg zorgt Google Maps voor een compleet reisoverzicht met de snelste route en verkeersupdates. Tijdens de rit kun je door gebruik te maken van voice allerlei hotspots en de beste horecagelegenheden in de buurt ontdekken.

De integratie van de Google Assistent maakt ook andere opties mogelijk, zoals boodschappenlijstjes maken en aanpassen onderweg naar de winkel, een echte muzikale reiservaring creëren voor langere ritten en entertainment naar jouw voorkeur selecteren.

Gepersonaliseerd

De mogelijkheden van het HMI systeem zijn eigenlijk oneindig. Het rijden wordt zo veel overzichtelijker en gemakkelijker gemaakt. Je hebt meteen ook de meest krachtige zoekmachine aan boord en je krijgt antwoorden op al je vragen, met een beetje hulp van Google.

Polestar biedt rijbeleving op het hoogste niveau voor de veeleisende, ervaren rijder die duurzaamheid en performance wil en passie heeft voor de nieuwste technologische ontwikkelingen.

Als rijder ervaar je al gauw dat de Polestar 2 een soort virtuele reisgenoot is geworden. Het systeem is slim, grappig en helpt je bij je dagelijkse leven. Het is dus eigenlijk net een persoon.

Geïnspireerd geraakt? Ontdek de Polestar 2

www.polestar.com

ANOUK DE JONG - NEWS ABOUT AI: TOO GOOD TO BE TRUE?

Promises for new opportunities made possible by artificial intelligence (AI) are everywhere: In news articles, on social media, in science fiction books and in advertisements. At the same time, you can also find warnings for possible dangers related to AI in all these places. How realistic are these promises and fears? Are they expected to come true in a few months or will it take years or even decades? Communication about AI can cause a lot of confusion. To prevent this, it is important that people can easily find correct and relevant information about this topic.

Recently an advertisement for the Polestar 2, an electric car with an integrated "Human Machine Interface", was published in Dutch newspapers (see the picture above). The advertisement explained that this interface exists of apps and services provided by Google that are integrated in the car. By saying "Hey Google" and using voice commands the driver can automatically adapt the car's settings and ask for information and assistance. This includes using Google Maps to find the fastest route home, but it also includes automatically playing your favorite music, reminding you of appointments coming up and even adapting the height of the car's chair and steering wheel. The advertisement claims that the car with the human machine interface is smart, funny and "just like a person". These are big promises that seem quite unrealistic, yet this car is already in production and available to pre-order. How is this possible?

As the videos in installation 2: Understand explained, the "intelligence" of AI systems is not very similar to human intelligence. The Human Machine Interface does not think like humans do, but provides an output based on the voice command of the driver and a lot of complex calculations that make up the algorithm of the system. The system is trained to recognize voice commands and respond to them in a specific way. For example, if you say "Hey Google" the system recognizes that voice command as input and starts up. If you continue your sentence by saying "play The Beatles", the system recognizes that the input "play" means it has to activate the music system in the car and selects music from the band "The Beatles" for the system to play, which is the output. It may seem as if the system responds to your questions like another person would, but that does not mean that the system understands what you mean in the same way. For example, if you would say "Good morning Google" instead of "Hey Google" the system does not start up because it does not recognize the input, but a

person would understand that “Good Morning” and “Hey” have similar meanings and greet you back.

When we read an advertisement, we already expect that this text is meant to make the product look attractive. Therefore, it is not surprising that this advertisement over exaggerates what the car and the Human Machine Interface can do. In contrast, when we read news articles about new technologies, we expect that they provide an accurate view of the technologies without overexaggerating about the possibilities. We usually expect the goal of news articles to be to inform us and not to persuade us to buy something. However, the information in news articles about AI might not always be as accurate and reliable as we expect. In most cases, this is not because journalists want to convince us to buy AI products, but because of the information and sources they include in news articles. This is shown by the outcome of a few scientific studies on how AI is represented in newspaper articles.

Brennen, Howard and Nielsen (2018) analyzed 760 news reports about AI from six main news outlets in the United Kingdom. They found that almost 60% of these news reports focused on products, initiatives and announcements related to AI (Brennen et al., 2018). Chuan, Tsai and Cho (2019) got similar results from their analysis of 399 articles from the five most widely read newspapers in the United States of America. They found that most articles discussed AI in relation to the topics of Business and Economy (35.1%) and Science and Technology (23.6%) (Chuan et al., 2019). In addition, the analysis by Chuan et al. (2019) showed that most of the sources (64.7%) mentioned in the newspaper articles were people associated with industry. In the news reports analyzed by Brennen et al. (2018) most sources were related to industry as well; a third of the people who were mentioned had affiliations with industry. The second largest group of sources mentioned in their selection of newspaper articles consisted of people affiliated with academia, making up approximately 17% of the mentions (Brennen et al., 2018).

Brennen, Schulz, Howard and Nielsen (2019) conducted another study to follow-up on these results, in which they focused on which academics were mentioned most often in newspaper articles in the UK and USA. The results of this analysis showed that researchers who had industry affiliations as well as academic affiliations were mentioned most often in newspaper articles (Brennen et al., 2019). Industry-affiliated researchers accounted for 56,6% of news mentions in the UK and for 71,9% of news mentions in the USA (Brennen et al., 2019, p. 4). This shows that people from industry are overrepresented even in news articles that seem to focus on scientific findings and breakthroughs. Taken together, these studies show that newspaper articles about AI pay most attention to products, initiatives, and news from companies. Even though most of these newspaper articles do not provide explicit advertisement for

products, initiatives or companies, this overrepresentation of industry can give readers a skewed perspective on the possibilities of AI.

News articles about sources and topics from industry are likely to focus on specific aspects of AI, like the expected possibilities and uses, advantages of using AI and economic benefits and risks. At the same time other topics, like the possible effects of AI on politics, health and society at large might receive less attention. To provide a realistic and complete overview of the possibilities and risks of AI technologies it is important that news articles include more diverse topics and sources. Scientists, activists, politicians and civilians can all contribute to a richer, more accurate discussion on AI (Brennen et al., 2018). In this way, people reading the news can get a clear idea of what promises and fears about AI can realistically be expected in the near and further future.

For now, it might be smart to pay some extra attention to newspaper articles about AI and to treat them more like the advertisement for the Polestar 2. If a representative of a company is making big promises about the possibilities or dangers of AI, it can be expected that these are over exaggerated, in the positive or the negative sense. AI systems like the Human Machine Interface in the polestar 2 may be called intelligent, but that does not mean they are like humans.

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DINA BABUSHKINA - AI AND ETHICS

AI is one of the most intriguing technologies ever invented. With all the ups and downs in its history, it never ceased to excite the imagination and incite fear. Why so?

One aspect of it is that AI seems to have unlocked almost unlimited possibilities. What sets this group of computational methods apart is that they are not only capable of processing exceptionally huge amounts of information, but manage to achieve something that has never been done before: singling out patterns and regularities without any pre-coded rules governing them. This allows for an exceptional level of accuracy in prediction and an ever-growing field of applications. If automation was invented to free humans from mundane tasks, things that they can but don't want to do and are considered not worthy of spending a human life doing, AI has always aimed to supplement or substitute those activities that humans already excel at and, many believe, define the very essence of a human being. And as such, AI carries with it the promise to push the boundaries of the human condition far beyond its existential limitations: being no longer bounded by who we are.

The question that such empowerment raises is: does everything go? Are all scenarios of our future equally acceptable to us? Are certain uses of AI or the possibilities that it creates objectionable and objectively so? If we assume, for the sake of argument that, given time and resources, one would be able to find a technological solution to any social problem, should there be any restrictions on such solutions? To ask these sorts of questions is to take a moral stance. But these questions would not have any true significance unless we have good reasons to justify such limitations, and Ethics is a field of science that, among other things, aims to determine what such reasons are.

Another key to the fascination with AI is that it is a reflection of ourselves as it tries to model what we think we are. From the very start, AI was envisioned as an attempt to re-create the human mind (or even, in Nietzschean spirit, a more-than-human mind)–a sort of hands-on metaphysical lab. Thus, at any point it reflects an abstract idea about what cognition is. AI captures both: our ideals of ourselves and the boundaries of our knowledge about ourselves. This is a unique piece of technology that allows us to try our metaphysical ideas out, experimenting with the embodiment of various concepts and theories of cognition. AI is a part of the eternal process of

self-recognition and self-understanding–the process that Heidegger believed to be the distinctive feature of humanity.

We used to define ourselves in contrast to machines, but that is changing. AI makes us rethink humanity as mirrored in machines, and in turn to rethink what it means to be a machine, pushing the reconsideration of familiar ontological boundaries. In Ethics, this echoed the need to re-conceptualise moral agency and the role of AI in moral decision making.

So how ethical is/can AI be? The answer may be as simple as this: as ethical as the humans designing and using it. Reflecting nothing more than human notions with all their limitations, the technology brings us face to face with the consequences of our own value-preferences. We get to live the future worlds that we once envisioned and learn that some choices were worse than others. Finding out which values are worth pursuing only for themselves, which reflect the most desirable state of affairs for everyone is yet another task of Ethics.

Ethics binds us to what we are. This has been captured by Kant in the concept of dignity: true freedom lies in the ability to guide yourself with the consideration of respect to humanity as the embodiment of rationality. What this amounts to is saying that the considerations of dignity sets a fundamental limitation on the technology: treating persons in the way that venerates their value as persons, but also treating other rational entities in the way that recognizes their value.
One essential ethical concern is that of harm: prevention of harm, reduction of harmful consequences, responsibility for harm and retribution. The considerations of dignity enrich Ethics' toolkit against harm. It elevates psychological harm to the same level as physical harm and brings in the prohibition on actions that degrade or undermine the value and worth of a rational being. The same principle fuels the discussion on the proper treatment of (artificially) intelligent robots. And what motivates this discussion is not only the possibility of them becoming sentient or conscious and thus the imperative not to harm, but also the imperative not to degrade humanity in ourselves by treating another entity in the way that is less than what it deserves.

CARLO MERVICH - WONDERING ABOUT ARTIFICIAL INTELLIGENCE WONDERS

Artificial Intelligence is the spearhead of an increasingly complex and broad technological scenario in which humanity is slowly entering. We hear more and more often about AI applied in the most varied fields, and every day we are witnessing intelligent technologies capable of behaving more and more like human beings. Amazement is a common reaction that digital technology, and AI as its highest expression, is able to arouse inside our bodies. Like when, for example, a vocal assistant answers one of our questions for the first time. Or when a new smartphone application turns out to be able to recognize the objects in our room. Or when an AI system recognizes our expressions while, in a playful way, we keep changing them to test it. New discoveries and applications in the field of AI give us a sense of continuous wonder. When we learn of the existence of robots capable of doing backward somersaults and pirouettes. Or when we hear about drones that are capable of autonomously transporting objects from one place to another. It seems that AI always manages to surprise us in new different ways, constantly testing what we think to know about it. Wonder is a marvelous sentiment that travels on delicate but impactful frequencies, triggering fascinations and interest. According to Aristotle, wonder is the extraordinary force that drives us into questioning and looking for answers about the world. As he wrote in his Metaphysics:

“For it is owing to their wonder that men both now begin and at first began to philosophize; they wondered originally at the obvious difficulties, then advanced little by little and stated difficulties about the greater matters, e.g. about the phenomena of the moon and those of the sun and of the stars, and about the genesis of the universe.”

For Aristotle, it is because of the sentiment of wonder that philosophy has found fertile terrain to be sown and cultivated. People have always questioned the environment, natural phenomena and their own selves. Waterfalls, rivers, animals, natural forests and humans gave rise to the most varied questions, guiding the search for causal links that reveal the mechanisms through which nature shows itself to us.

Now, the question is: “How does philosophy relate back to wonder?”. Is the one which originates from AI the same kind of wonder that we experience when looking at a beautiful red sunset, or at the blue depths of the sea? Are we still able to marvel in front of the forms in which nature offers itself? Or will AI provide us with everything we need to be amazed at?

“Reflections” is one of the many ways to think about what it means to philosophize starting from the wonder caused by AI. As the search for answers on the functioning and implications of technology (especially with the advent of AI) becomes more and more complex and articulated, spaces like those that this exhibition aims to create are increasingly needed. That offered by AI is a unique opportunity to raise novel questions and should not be wasted: the new ways of experiencing wonder that AI is capable of provoking, can indeed become new fertile terrain for philosophy to grow. The most important question is whether we will be able to actively take this opportunity to reflect, or whether the amazement will simply make us remain passive spectators. In any case, this exhibition represents a good chance to choose.

HENK PROCEE - CAN THE MACHINE DO THAT? REFLECTION AND THE HUMAN CONDITION

Humans are divided beings. Already in classical antiquity they were separated in body, soul and spirit. Equally classical, the three were usually at odds with each other. Many centuries later, the psychoanalyst Freud added a powerful deepening to this. Not only is our mind for a much greater extent unconscious than conscious, in it is also always a struggle between three forces. The Id, the domain of instinctive life, competes with the Superego, the domain of norms and ideals, and in doing so, the Ego, the more or less rational self, has to survive and take control. Is there not such a thing as human reason that can face all this struggle, so the thinkers of the Enlightenment wondered, a last bastion to which people can retreat, a great intellectual quality, typical of human beings? The answer, even from the most famous philosopher in that school of thought, Immanuel Kant, is sobering. Even human rational faculties are divided. In his terms: between Understanding, Judgement and Reason.

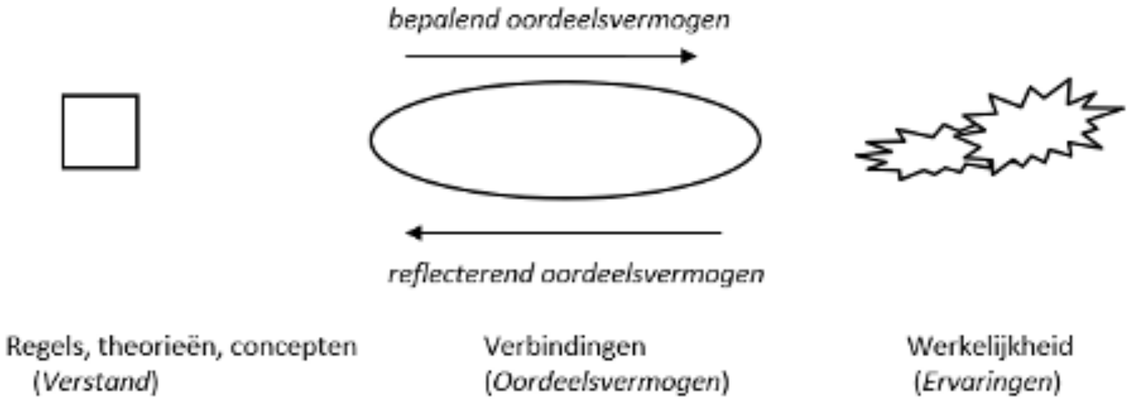
This division in people is as unpleasant as it is fruitful. That is the thesis developed by the biologist and philosopher Helmuth Plessner at the beginning of the last century. We have a body AND we are our body. We are the producer AND the plaything of our psychic processes. We are beings who shape the social environment AND we are shaped by it. Ambiguity everywhere. Because we are beings who are both participants and spectators in our own performances, we (almost) never coincide with our situation. We always believe that things should be changed and improved. And that is why people develop culture, technology, ideologies; for a while they are satisfied with that, and then things have to be changed again. Thus arose the regulated agriculture, the religion, the steam engine, the car, the computer. And now: Artificial Intelligence, machines that can perform some kind of thinking. Is that a blessing, a danger? A typical human question, which always arises when a new situation is growing. A question founded in the original problem: how to be yourself. Asking that question, investigating the possible answers - that is human dignity. And the basis for reflection.

Reflection literally means mirroring. It also means thinking, contemplating. The human condition of division explains why we reflect: we can't do otherwise, we have to do it. At the same time, this division makes reflection possible. None other than Kant,

in his great Critique of Pure Reason, gave the key to properly understand reflection. That key lies in the difference between two of the three faculties of the human mind: "Understanding" (in German: Verstand) and "Judgement" (in German: Urteilskraft). According to Kant, these faculties work in different ways. The understanding works with laws, theories and concepts. It produces and uses rules that we can apply to align observations and experiences. Without understanding there can be no knowledge and science. It will come as no surprise that AI and machine learning systems can score high on this ability. But understanding alone is not enough for full knowledge, according to Kant. In addition to facts and theories, something else is needed. And that is the ability to determine which rules, concepts and theories are appropriate in understanding reality. For a problem in physics, Newton's laws and not the insights from economics are appropriate. Economic insights can of course be applied to a social problem, but it is foolish to think that they are sufficient to cover such a situation completely. In mathematics and usually in shopping malls, two plus two equals four, but in social relationships this is not necessarily the case. This ability to determine the adequacy of rules for a particular domain is called "Judgemental ability", or "Judgement" for short.

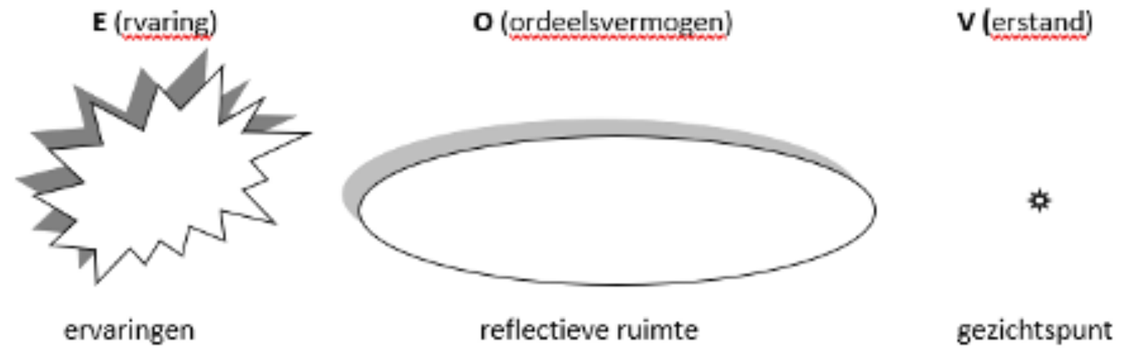
Kant, quite surprisingly, calls lack of this ability stupidity, something that, according to him, mainly occurs when people equate their theories with reality. He puts it roughly in these words: "A doctor, a judge, a politician, or an engineer can possess all kinds of medical, legal, political or physical theories, so much that he or she becomes a professor, but if s/he lacks the ability to judge, it is wise to stay away from that person". Where the concepts, theories and rules of understanding can, reasonably easy, be taught to people (and machines?), this applies hardly to the power of judgement. It is a talent, according to Kant, that cannot formally be learned, as it must be practiced. An endowment for which there is no algorithm. And that endowment helps us to reflect.

If we want to understand the activity of reflection, Kant's distinctions are helpful. I show this in a picture, that consists of three distinct parts - understanding, judgement and experience (or in other words: rules, connections, and reality). "Understanding" is linked to the ability to master logical, theoretical and conceptual rules. "Judgement" is related to the ability to connect Experiences with the rules of "Understanding". The diagram visually represents the messiness of experience, the clarity of the understanding and the connecting quest of the power of judgement:



In this diagram, I have put two arrows to distinguish between two kinds of judgement: determinative and reflective judgement. In determinative judgement, someone is presented with a number of concepts, which need to be checked to see whether they fit in with the experience gained. For example, someone is taught the concepts of oak, beech and maple - and then that person is sent into the forest to see whether those trees are there. In the reflective judgment, someone is allowed to develop his own concepts about the experiences gained. Where the latter seems to be much more exciting and creative than the former, the determinative judgment has been given a negative connotation. This connotation is further reinforced by the image that the determinative judgment is a simple, logical operation and that a reflective judgment, on the other hand, is an exciting form of research in which new things are discovered. For Kant, this is a misconception. Both activities, the determinative as well as the reflective judgments, are two sides of the same coin. They are not simple logic, but often laborious activities to link heterogeneous things. What they have in common is the activity of connecting diverse elements (logical, theoretical, personal, empirical, practical). An overarching criterion in which both feeling and reason play a role is the simple formula: It has to COHERE, it has to fit together. Many people are familiar with this criterion, especially in a less positive way: it makes me restless, something is wrong, but I don't know what that is yet ...

I consider this view of Kant to be extremely helpful in understanding reflection. Reflection takes place in the interspace where the capacity of judgement investigates how and to which extent concepts and reality fit together. For that reason the intermediate area is called the reflective space. In a similar diagram:

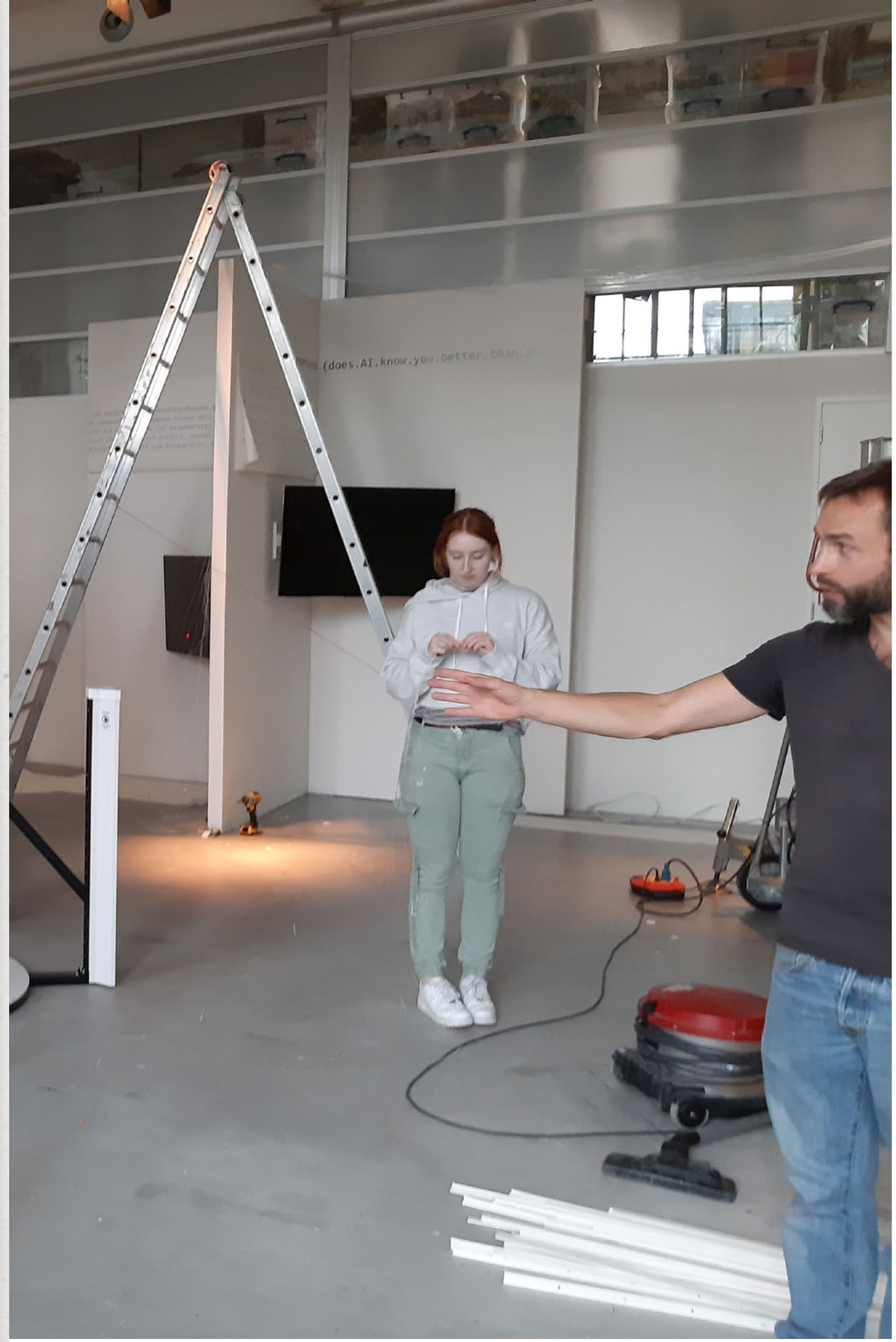


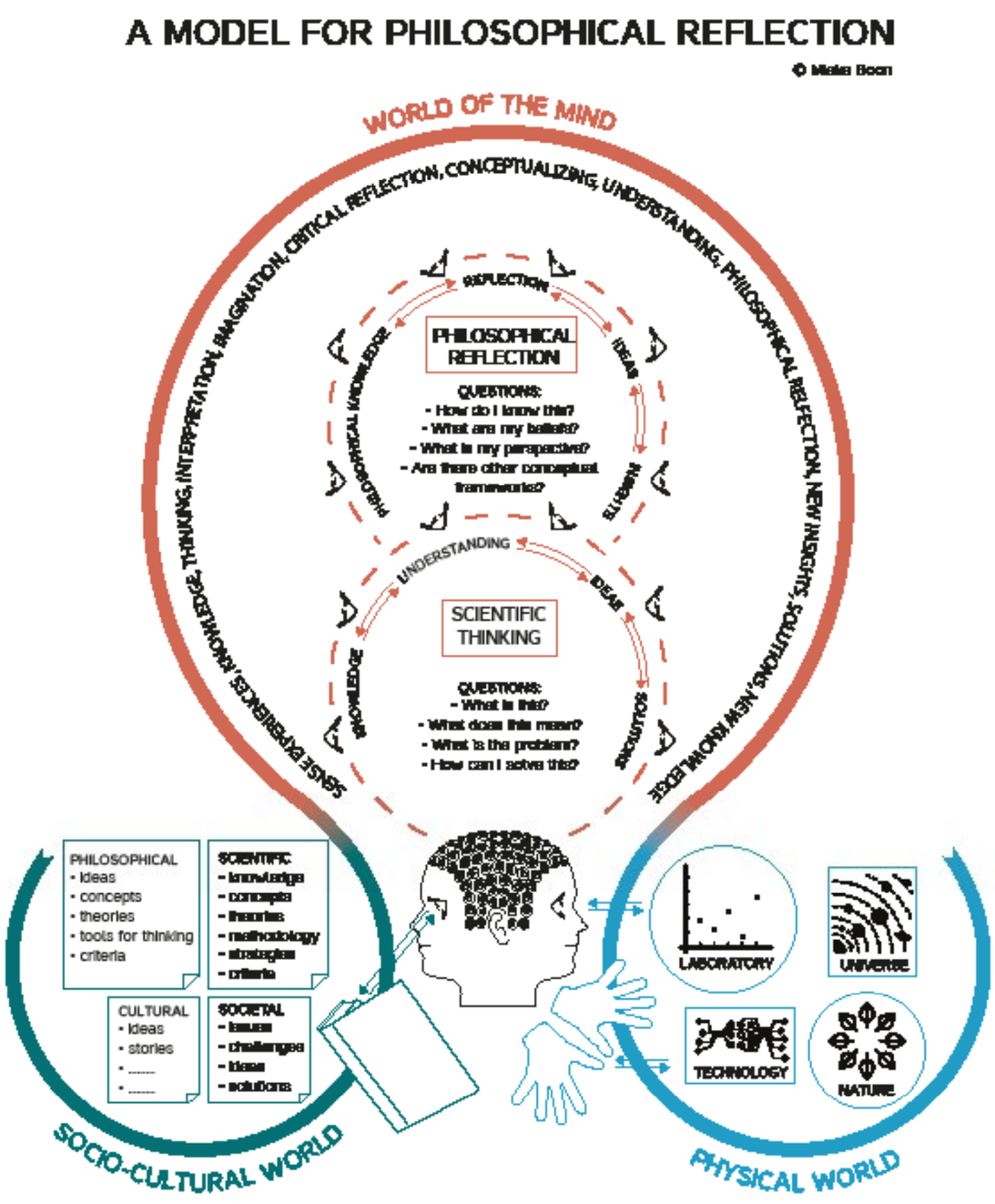
The reflective space is created by holding experiences against an external point of view. Experiences include what happened in a project, what happened in contact with someone else, what happened when reading a book, what happened in an exhibition. Experiences come in sizes and types, they are usually not nicely rounded off, but they show all kinds of imperfections, nooks, holes and even spikes. The picture shows that imperfect structure. The point of view is shown on the right-hand side of the diagram as a small light source. It sheds light on the experiences. It can also be seen as a kind of viewer: what do the experiences gained look like from this specific vantage point. The search generated in this way can lead to discoveries and especially to insights. And new points of view will in turn lead to new discoveries.

The exhibition in Tetem provides the outer sides of this model: it generates experiences with AI and through reflection questions it provides the points of view to start reflecting. The real work will be done by the participants themselves in the reflective space in between. A space that should not be filled with strong opinions, solid beliefs or hard truths, but with very different qualities, such as hesitations, questions, doubts. This space is about (self-)inquiry, aimed at gaining insight and understanding. All kinds of themes can be addressed in this space, such as meaning, value, tensions, quality, future. Themes that relate to one's own person, to developments in science, to changes in technology, to relationships with the wider social environment.

In that space there is room for creative questions and even more creative answers. To start with: Why do we hardly care about the zeal of the vacuum cleaner, the power of the steam engine, the speed of the rocket? Why do we worry about intelligent machines? Can they do it as well, can they actually reflect? And if the answer is in the affirmative, how would a machine do that?


VIRTUALIZER





MIEKE BOON - THINKING AND AI - ABOUT HUMAN AND ARTIFICIAL INTELLIGENCE

How do we ensure that the idea that human intelligence can be replaced by AI does not become a self-fulfilling prophecy? That is a question that runs like a thread through the exhibition Reflections. Beneath is a deeper question: how do we ensure that people retain their human dignity if AI seems to be able to do everything better than we can? In this essay I want to argue that the human mind is so much more complicated and interesting than we might think under the influence of the brain sciences and the developments in AI. And, that AI can make a valuable contribution to promote human dignity.

The relationship between body and mind, the question of what the mind is, and the question whether people have free will or whether they in the end are systems determined by biophysical processes (where the experience that you make decisions yourself is only an illusion), are great philosophical questions which have been debated by philosophers and non-philosophers for centuries. Just as in the body-mind discussion, the debate about AI versus human intelligence seeks evidence in the natural and social sciences as well as in philosophy.

But does such evidence convince you? Do you manage to make such insights your own? When you think about (the expectations of) AI, do you manage not to become somewhat worried about it? Do you actually manage to understand and see why AI is different from you?

So here I want to stay a little closer to my own experience. My approach, although philosophical, is in that sense personal and phenomenological. It is rather an account of a philosophical quest in the realm of existential questions, such as: What does it mean to understand something? How is it possible that other people sometimes see the world very differently from me? Why are their deepest beliefs different from mine? Do I really understand other people?

When I, driven by these kinds of questions, started studying philosophy, it led to experiencing a new dimension. A world of thought opened up that did not exist before that. A mental world that is not visible or known if you do not experience it yourself. And which until then seemed to be just a (hollow, meaningless) theory. Just as a color-blind person cannot see color and a deaf person cannot hear music, no matter how much you tell about color or show tones on paper.

But at first that took some doing. As a master student in chemical technology I took my first lessons in philosophy. To the elementary question "What is philosophy?" I got the answer: "That is thinking about thinking." "Huh" I thought: "You just think, don't you? How can you think about it?" It is no exaggeration to say that it took me (having a mind that was trained in natural and engineering science) several years to get some grip on that, and to understand more deeply what was meant.

Still I want to try to give other people an entrance to that experience, to the possibility of exploring their own mental world. By offering some handles for that. In short, exploring one's own mental world (in interaction with other people) is the domain of philosophical reflection. In my short explanation I'll take a few steps. Step 1 deals with the role of concepts in thinking and seeing. Step 2 with human creativity in creating concepts, theories and structures. Step 3 with the role of reflection in generating new knowledge. And finally, step 4 deals with philosophical reflection. In doing so, I will clarify a model for philosophical reflection, visualized in the diagram.

STEP 1. THINKING AND SEEING: CONCEPTS IN THE HEAD

Let me start with a self-insight that can be traced by 'thinking about thinking'. Namely that you are guided in your thinking by all kinds of beliefs and certainties - of which you are often not aware at all, but which do guide you in how you think and feel. An example of this is first of all how you experience your own looking and seeing. You usually experience looking as if the outside world is depicted in a more or less direct, spontaneous, and passive manner in your head, in your mind, and you can describe this, also in a direct manner, objectively and factually. You say: "It is raining. "The sea is grey." "There walks a woman with a blue coat." "The clock points 10 to 12." "He looks frightened." "The sky is menacing." These sentences seem to be objective observations and facts (i.e., descriptions of the state of affairs in reality) in the sense that all this goes naturally into your head - a bit like the outside world is projected onto the photographic plate. An important self-insight, however, is that 'what you see' and 'that you can name facts at all' is made possible by concepts 'in your head,' which, often unnoticed, do their work. To speak in AI terms, concepts that automatically label

and categorize incoming data (pixels). Without labeling and categorization the data would not be converted into information, into something meaningful to you. Sticking a concept onto something is therefore not just giving a name, but giving a meaning to something. Pasting a concept onto something thus gives it (a lot of) meaning. This explanation of how human cognition works was conceived by the great philosopher Immanuel Kant and was revolutionary in Western philosophy at the time.

To begin to understand this insight and to feel it in yourself, you can think of someone who has great knowledge of plants, or of birds, or of the weather. Such an expert sees much more than someone without this knowledge. And that while the expert and I (non-expert) really 'get' the same data through the eyes! What's more, seeing what I consider to be an unsightly little plant or bird often leads to happiness or excitement in such an expert: "Look at this, how special!" "Well, I really don't see it!" Two different experiences based on the same data!

But, you might argue, artificial intelligence develops rapidly in the realm of seeing, in so-called image recognition. In the near future, for example, you can point the camera of your mobile at a plant or bird, and then the plant or bird recognition app will tell you flawlessly what it is, namely which name that plant or bird has! That's right. In the Biblical creation story Adam gave all plants and animals names. If the world is arranged this way, the app or image recognition software can indeed do the recognition work. Which is of great help in learning all those difficult names and what kind of bird the name belongs to! In a similar way, the customs officer nowadays also uses facial recognition software. And doctors also use image recognition technology to detect tumors in scans. Once the automatic recognition has taken place, i.e. after the AI has pasted a name or 'result' on the image, this name can be automatically linked to other information on the Internet (in the case of a bird or plant) or in a specialized database (in the case of customs or medicine). This way you can find out everything that is known about that bird or person, or you can get a result like the doctor. But beware, the categorization (determining if it is a photo of a bird, plant, face, or medical scan) and the initial labeling (sticking a name on the photo like: 'sparrow,' Pietje Pieters, or of an 'outcome' on the scan such as: tumor,' 'bone fracture') must be done by human experts. In this way a data-base is generated. Only on the basis of such a data-base with categorized and labeled images (photos, scans) can a machine learn to recognize and name similar images. Moreover, all additional information is produced by humans, not the AI. The AI only makes the link between the name and information! And that information has no meaning for the AI, but it does for the bird expert, customs officer or doctor. An important point is to realize that for you and me and the expert, the concept has much more content and meaning than the pixels in the picture, even if the AI is able to assign the concept to the picture based on only those pixels.

STEP 2. CREATIVITY: PEOPLE CREATE CONCEPTS, STRUCTURES AND THEORIES

A peculiarity of human cognition is creativity, such as the ability to stick on one thing (different) concepts. This ability is constantly used in science and art. But you also do that yourself. You see an elephant or an elf in a cloud. In a few dots on paper you easily recognize a face (like Beatrix on the stamp) or a rabbit/duck (Gestalt Switch: rabbit or duck) or a bull (Picasso). So we have the cognitive ability to 'see something as ...'.

Even more special, but based on that same cognitive ability, is the fact that scientists are constantly inventing new concepts. Since Adam gave all things names, an untold number of concepts have been added, not because suddenly a new procession of animals passed by, but because more (and better) distinctions have been made, and new (and better or richer) relationships have been drawn. A fellow philosopher, Joseph Rouse, calls this the articulation of the world. In a lecture (in 2011) he once very aptly described this aspect of science in a number of concise sentences:

"Conceptual articulation is at the heart of the scientific enterprise."

"The sciences expand and reconfigure the breadth and depth of the space of reasoning"

"Conceptual articulation enables us to entertain and express previously unthinkable thoughts, and to understand and talk about previously unarticulated aspects of the world."

When you think about this, it's incredibly special. That the human mind can do such a thing! Don't get me wrong. The idea is not a kind of subjectivism and relativism which claims that man is inventing things that do not exist in reality. The extraordinary thing is that people with all their creativity and critical sense create 'ways of seeing things in reality' which fit that reality, and which enable us to think about that reality practically or theoretically in ever new ways! People (researchers) bring structure to the chaos, make new distinctions, create new and unexpected connections, see analogies, and reason further on. The way in which researchers do this does not just follow an algorithmic way of thinking and reasoning, but is also creative. In this way they develop new concepts, theories, and so-called conceptual and mathematical frameworks (structures) that can be superimposed on observations of reality and thus give new meaning to them. The concepts, theories and structures are thus the self invented glasses or perspectives through which we can see reality in a certain way. Without them we would not be able to see anything at all. In short, those concepts, theories and structures enable us to see certain things while others are hidden from view.

Think, for instance, of the furnishing of your new house. To do this, you make a floor plan to scale, and on the same scale you cut blocks for the furniture. In this way you create a (geometric) mathematical structure which enables you to think about how best to place the furniture, and to see if the spatial relationships between the pieces of furniture are correct - maybe the sofa you wanted is much too big, or not all the furniture you want fits in. The scale drawing fits to the reality, your house, but at the same time it is a very specific way of looking and representing, because it is created by using a specific perspective (mathematical), which allows you to see some things (the proportions between the objects), but not others (the color of the curtains).

Another example is art, like poems, paintings and novels. These too give new perspectives on reality. Through the landscape painters of the Hague school, for example, I came to see the atmosphere of the Twente landscape, and through Rembrandt's portrait of his mother the beauty of old people.

STEP 3. THE REVERSE DIRECTION: THE ROLE OF REFLECTION IN KNOWLEDGE GENERATION

How do these concepts, theories and structures that function as 'spectacles' and 'perspectives' end up 'in our heads'? By learning! The lower part of the diagram "a model for philosophical reflection" in this essay illustrates this. The lower part of that diagram outlines that we live in interaction with the socio-cultural world in which we grow up, through the lessons we receive, the people we talk to, the books we read, and the things we perceive in reality (see green balloon bottom left). In this way we gain experience and learn facts, concepts, beliefs and theories. This is not only about acquiring knowledge of facts and theories. We also learn what kind of questions are asked, the relationships that are drawn, and the ideas and problems that are created. We have a similar interaction with the physical world (blue balloon at the bottom right). Their experiences via the senses (eyes, ears, hands, ...) play an important role. But also there it is not only a question of gaining sensory experiences and knowledge of facts and theories. In that interaction we learn to interpret and understand the experiences by means of concepts, theories and structures (blue balloon at the bottom right).

All this ends up 'in the head', in the world of the mind (orange balloon). The cloud of words along the outer edge first of all (from left to right) names the sensory experiences and knowledge that ends up 'in the head'. But in the world of the mind much more happens. All kinds of cognitive activities take place there. We think,

interpret, imagine, ask critical questions, make new concepts, try to understand, reflect, and arrive at new insights, solutions and new knowledge.

How does the world of the mind relate to our interactions with the socio-cultural and physical world? In the essay by Henk Procee the distinction made by Immanuel Kant between determinative and reflective judgment, is explained. Here, specifically the determinative judgement, the ability to link an experience or observation to a concept or theory in the right way, plays a crucial role.

Next to that, people also do research (in science) to generate new knowledge: concepts, theories, structures (bottom orange striped circle). Research starts by asking all kinds of questions, to which researchers then try to find appropriate answers. In doing so they direct their mental eye both to the outside (to knowledge and experiences) and to the inside (to the questions they have). Here the reflective judgement mentioned by Henk Procee plays an important role.

Through these paths you will learn the new concepts, theories and structures (blue and green balloon) – those that were created in science (lowest dashed yellow balloon), and in turn, these will play a role in your interaction with the outside world, in what you perceive and how you interpret those perceptions. Well-known examples of concepts conceived in the social sciences are 'culture,' 'history,' 'economy,' 'democracy,' 'political system,' 'monetary system,' 'demography,' 'social processes,' 'intelligence. Similar concepts were conceived in the natural sciences, such as 'mechanical system,' 'evolution,' 'climate,' 'ecology,' 'dynamic equilibrium,' 'thermodynamic system.' These concepts do not refer to objects you can just see or point to! But they do determine your view of the world, and make it possible to think about that social and physical reality and to talk about it with others. New concepts etc. end up in your head and offer new perspectives that you didn't have before. To see this, think back to your childhood, where you hadn't learned these concepts at all. At that time you usually saw nothing of it, and without learning about it you would never have seen or 'recognized' it in your life.

STEP 4. THE REVERSE DIRECTION: PHILOSOPHICAL REFLECTION

I started by saying that ideas (the concepts, theories, structures, and also presuppositions and perspectives) 'in our heads' often do their work unnoticed when we see, think or reason. But would you then also be able to discover how that works, and find out which ideas give direction to your own thinking without being aware of that at first? Just like creativity and the power of judgement, reflection is a very special human cognitive ability (see dashed orange circle at the top), with which you

can indeed discover this in yourself. The mental eyes in this circle look 'outside,' at your own ideas and experiences, as well as at scientific and philosophical ideas; and they look 'inside,' at the questions you ask about this, the discrepancies you detect, and your attempts to get it right again.

Without the capacity to reflect you wouldn't be able to rethink ideas you have internalized once, or assumed to be true, to see if they are actually adequate and still do justice to reality. You can think of nasty deep-rooted beliefs that you sometimes don't notice and that you have always believed to be true. Such as the idea that gays have unnatural tendencies, the idea that women are inferior creatures, and the idea that Jews cannot be trusted. These ideas give meaning to what you see. Philosophical reflection, in my view, means that you track down unconscious beliefs (or presuppositions, or theories), start to recognize how they determine what you see and how you think, then critically examine these beliefs, and possibly replace them with a better alternative.

How do you track down such a belief in yourself? That happens, for instance, when someone points it out to you. That gives you the opportunity to ask yourself what that belief is actually based on. An important, guiding question in this respect is whether the conviction 'does well' and whether there might be better alternatives.

An appealing example in the book Philosophy of Looking (Boon & Steenhuis) is that people often, without really being aware of it, have rather romantic ideas about art, according to which the art experience is primarily an emotional experience. This idea is deeply rooted in our culture, and thus also transferred by it (green balloon), ending up 'in the head'. Philosophical reflection means first making that deeply rooted idea explicit and then investigating it further. It turns out that this romantic belief is probably wrong, and can even get in the way of your art experience. Such reflection has given many people the space to approach art with less high (romantic) expectations and more skill, and in doing so to gain special experiences.

Another insightful example is a recent book by Rutger Bregman, Most people are good. Bregman comes up with the idea that most people are inclined to do the right thing! Through this surprising, new perspective on humans you suddenly become aware that you have internalized an image of humans that is based on the evil in humans, the idea that 'man is naturally inclined to all evil' and is only held back from that by a thin layer of civilization. You are convinced of this, because you have seen this confirmed around you all your life, right! But then remember this, says Bregman. This idea about humans is mainly transmitted by the culture in which you grow up (green balloon), and is (fortunately) not too much supported by your own direct experiences. If you allow yourself to be convinced by Bregman's examples

and arguments, it can lead to a true change of perspective on humans. The point of Bregman's argument is that if you hold one or the other belief about humans, this belief is likely to be self fulfilling. When you believe that people are inclined to evil, this will color what you see and you will see constant confirmation, in the news, in novels, in hearsay. Bregman's concern is then that this also has consequences for how you approach other people, or how you think about people in a political context. And that the expectations that accompany such a belief can incite people to cynicism and indifference. But the opposite could also apply, Bregman hopes.

There are many reasons to be somewhat skeptical of the idea that AI will replace human intelligence. But the lesson I would like to draw in this argument is that often unfounded ideas and beliefs, about human intelligence on the one hand and AI on the other hand, can be decisive in this. Decisive in how we see our own intelligence and that of AI. If we see human intelligence as a kind of algorithm, as a kind of calculator that converts input (data) into output (a decision), then this idea can become self-affirming. We let smart apps calculate things for us, because that is easier, faster and more reliable. In this essay I wanted to show that reflection is a cognitive ability that is far removed from the behavior of an AI technology. An ability that is interwoven with cognitive abilities, such as interpretation, imagination, critical thinking, conceptualization and understanding (outer word circle in the orange balloon). But if we do not see this ability, if we are not made aware of it, then it probably will not manifest. Just as you do not learn mathematics from yourself, you do not learn reflection from yourself. Only by naming this ability and bringing it to our attention can we become aware of it and train it.

The preservation of human dignity in the digital society will therefore not only come from ethics and regulations of AI. We also have to get to work ourselves by not reducing human intelligence to what an AI technology can do better, and by recognizing and developing the special abilities of the human mind. Reflection is a cognitive ability which, in my view, is a crucial aspect of human dignity (at least, the part related to the human intellect). If we can recognize and internalize that, AI does not pose a threat to human intelligence. Instead, AI technology can be a new tool for our thinking and our further intellectual development. But then we will need to understand and learn to properly use this technology, similar to how we learned to use many other machines that facilitate but do not replace cognitive tasks, such as calculators, spreadsheets, simulation models, translation engines, and search engines on the Internet.

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Immanuel Kant. Kritik der Reinen Vernunft

Joseph Rouse. Articulating the World – Conceptual Understanding and the Scientific Image

Mieke Boon & Peter Henk Steenhuis. Filosofie van het Kijken – Kunst in ander Perspectief

Mieke Boon. How Scientists are brought back into Science -- The Error of Empiricism.

Rutger Bregman. De meeste mensen deugen – Een nieuwe geschiedenis van de mens

Charles Taylor. Source of the Self – The making of Modern Identity


2.Understand


CYBERITH

FURTHER WATCHING AND READING

VIDEO (YouTube, film)

Interview between Yuval Noah Harari and Natalie Portman. In a conversation covering a wide range of contemporary questions, they discuss myth versus reality, the role of religion, the relationship between A.I. and art, and much more.

Crash Course on YouTube which explains more about how AI works technically in an easy and fun way

Ted Talk from Jeremy Howards: The wonderful and terrifying implications of computers that can learn

TED Talk from Fei-Fei Li: How we're teaching computers to understand pictures

Television series De toekomst is fantastisch (Dutch): A six-part series filled with speculative fiction, fuelled by visionary scientists and prominent contemporary thinkers. Central ar the ethical dilemmas mankind will (possibly) be confronted with as a result of technological and scientific developments. Because how amazing is the future really?

READING

Rudy van Belkom: Duikboten zwemmen niet (deel 1), De Computer zegt nee (deel 2), en, AI heeft geen stekker meer (deel 3). Te downloaden via: https://detoekomstvanai.nl/.

Mieke Boon & Peter Henk Steenhuis. Filosofie van het Kijken - Kunst in ander Perspectief

Matthijs van Boxsel: Geen mens is intelligent genoeg om zijn eigen domheid te begrijpen.

Rob van Essen: De goede zoon

Yuval Noah Harari. Homo Sapiens: Een kleine geschiedenis van de mensheid.

Yuval Noah Harari. Homo Deus: Een kleine geschiedenis van de toekomst

Yuval Noah Harari. 21 lessen voor de 21ste eeuw

Lilly Irani: The Hidden Faces of Automation.

Marc-Uwe Kling: Quality Land

Maurits Martijn & Dimitri Tokmetzis: Je hebt wél iets te verbergen. Over het levensbelang van privacy.

Manfred Spitzer: Digitale dementie

Henk Procee. Intellectuele Passies - Academische vorming voor Kenners

Charles Taylor: The ethics of authenticity

James Vincent: AI 'emotion recognition' can't be trusted

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