THEME 02

Comprehending the ontology of the digital world

`DIGITAL WORLD`   `PHYSICAL WORLD`   `DIGITIZATION`

Because of its endless possibilities, our lives increasingly take place in the digital (virtual) environment, which can be compared to the New World in the 16th century, with its vast space, extensive resources and new species to explore and conquer. However, similar to when we first set foot in the New World, when we enter the digital world, we are somewhat unaware of the differences with the familiar (physical) world. As we increasingly depend upon the digital world, comprehending its deviant ontology becomes a pressing issue.

Our observations

- One of the main challenges the digital world has created so far concerns the protection of personal information. Before the rise of digital technology, rules and tools concerning the gathering and owning of personal information were rather well organized and formalized by laws. Because of the different possibilities the digital environment offers in contrast to the physical world, a whole new body of laws (e.g. GDPR) and infrastructure (e.g. blockchain) is needed and being developed.

- The surprising possibilities of the digital world are becoming known to us one after another. The Facebook–Cambridge Analytica data scandal, a multi-person non-invasive direct brain-to-brain interaction (BBI), deepfakes such as the recent mashup of Steve Buscemi and Jennifer Lawrence and the Google A.I. assistant making an appointment with a hairdresser over the phone without the hairdresser noticing that she was talking to a non-human assistant are just a few examples illustrating that the digital environment offers possibilities and challenges that we do not oversee and therefore cannot anticipate easily.

- That we are highly accustomed to the physical world becomes abundantly clear when we put on a VR set for the first time and are confronted with great heights. Although we know we cannot physically fall into them, we have to suppress the bodily reaction of terror when we are asked to jump. These bodily reactions can be overcome in a relatively short time of practice, whereas our mental alignment with the possibilities of the physical world is harder to overcome. For example, the possibility that our every move in a virtual environment can be documented to the last detail (e.g. by Netflix or Facebook) remains rather fictional or unnatural to us, for in the physical world, one would still be characterized as paranoid when anticipating such a possibility.

- The possibilities and challenges of the digital environment are increasingly forcing us to reconsider many of our fundamental intuitions on matters that used to be uncomplicated. For example, *(1) when do we have knowledge?* (caused by the threat of an infocalypse), *(2) can inanimate beings that cannot be represented by humans be accountable for actions?* (mainly caused by the development of self-driving cars that caused accidents), or *(3) is it possible to observe facts in a neutral manner?* (caused by biases in algorithms that, for example, assist in job applications).

- The study of ontology, which explores reality's fundamental structure by asking questions like: *Why is there something instead of nothing? What is time? What is identity?* has helped improve our insight into reality for thousands of years. For example, the idea that everything that exists can be hierarchically ordered and categorized, (e.g. *rose – flower – plant – being*), originates in Aristotle's *Philosophia Naturalis* and Plato's *Theory of Ideas.* This important insight, for example, laid the foundation for Darwin to form his theory of evolution. An ontology of the digital world could enable us to understand, oversee and anticipate digital possibilities and challenges more thoroughly as well.

Connecting the dots

When we enter a new environment in the physical world (e.g. the New World, the moon, space), it primarily makes us feel like strangers. We stepped into a world that had been out of our reach for a long time, which we do not (yet) control or understand. Not so with the digital world, which is not surprising, because we created it. An app, a video game, a virtual assistant, a social platform, they can all be reduced to formulas of ones and zeros that are designed by man. Although we will increasingly encounter entities that were not directly created by man (but by self-learning programs, for example), it will always be clear that the digital world was created by man. This influences our disposition towards this relatively new environment. When we enter the digital world, we primarily feel we enter a world that belongs to humanity, which can ultimately be controlled by us in the most fundamental way. This feeling of control is amplified by the fact that the digital world needs the physical world in order to exist (i.e. 'we can pull the plug').

However, the possibilities and challenges that are offered by the digital world are not all intentionally created or overseen. In general, many differences between the digital world and the physical world stem from the fact that the digital world offers concrete possibilities that, in the physical world, are only theoretically possible. A rather simple example concerns constructing two objects exactly the same way. In the physical world, this is theoretically possible as far as it is not a contradiction that such two objects exist. However, practically, it seems impossible to construct two similar objects right down to the last atom. In the digital world this is not a problem at all: endless entities can be copied in the exact same manner. In order to realize whether or not it is important to us that objects in the physical world are never constructed in the exact same manner, we need to contemplate whether this kind of uniqueness has any value to us and what problems or possibilities the digital world can offer in this matter.

Another difference which is already becoming a pressing issue for us, regards the accessibility of personal information. In the physical world, it might be theoretically possible to discover what someone was up to in the last few days, where he was in the past few years, who his friends/family/colleagues are, what he bought, what his preferences are,

etc. But without digital technology, much of this is practically impossible to find out. Our personal information is mainly hidden in the physical world by our bodies, the flow of time and vastness of space. We cannot press pause, rewind or fast-forward in time and space to observe what anyone did, nor can we look underneath someone's skin to find out what is going on in someone's mind (e.g. memory or personal history in general). Our experiences, memories, personal traces, etc. can and mostly will ultimately be lost in time and space forever. Not quite so in the digital world. Everyone we connect with, every (digital) place we visit, every thought we communicate, everything we do in the digital world is far easier to track, trace and remember than the physical world would ever allow.

When operating in the digital world, however, we often do not experience such differences in a direct manner. We might therefore usually act as if we were in the physical world, in which, for example, most of my personal information is highly inaccessible and remains hidden to anyone who is not me. Although the consequences of this difference are becoming clear (e.g. current privacy issues), the full scope of outcomes and opportunities the digital world offers in this matter remains rather vague. Are there, for example, any advantages to the fact that many of our traces (e.g. memories, family history, ideas) are erased over time in the physical world? And if so, are these advantages at stake in the digital world? In other words, do we think that remembering or storing every bit of information indefinitely is a positive thing regardless?

The deviant ontology of the digital world is already transforming different industries in a radical manner. Fake news, for example, was always a possibility to a certain extent, but due to digitization, an infocalypse that is unparalleled from a historical perspective is becoming a huge problem in media such as newspapers and other news outlets. The different possibilities regarding the accessibility of personal information in the digital world has drastically transformed business models in advertising and beyond. Mapping the ontology of the digital world could enable us to anticipate such consequences in advance, as well as explore new possibilities more systematically.

Implications

- Because the digital world offers many counterintuitive challenges and possibilities, it forces us to acquire new responses. Our capability to adjust is already apparent from, for example, VR experiences in which we get used to doing things that we would fear in the physical world. It is, however, questionable whether we will manage to live in two different worlds. Will we, for example, be able to maintain healthy reactions to physical threats and still be freed of them when we encounter the same situation in the digital world?

- Many of the pressing questions concerning the digitization of our world can only be settled by taking a philosophical stand rather than relying on science to provide guidance. For example, how should a self-driving car choose between saving its passenger or saving a person that is outside the car? Or, are we to use big data that was not willingly given to help solve life-threatening dilemmas concerning, for example, health or environmental issues? Trying to answer these kinds of questions leads us back to, in this case, our philosophical ideas on ethics. This means that, by definition, these answers will never be neutral. They will only be true or false according to a certain (personal/cultural) worldview, which applies less to, for example, scientific questions and their answers. This could result in different 'hardcoded morality' structures in, for example, self-driving cars around the world.