

# Imagining communities with ‘intelligent’ machines

## Innovationism and the hope for alternative imagination<sup>1</sup>

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### Abstract

Shared perceptions of the world are imagined with and within available media technological environments. In other words our communication environment conditions our social imagination and the ways in which we can see the world. The essay, based on the inaugural lecture of the author, discusses how this conditioning takes place and with what consequences in the contemporary digital societies. The essay draws on the research by the author on innovationism and discusses the concepts of reversed tools, content confusion and attention factory. Utilizing the study by Berg & Valaskivi (2023) on commercial image recognition services and their performance in recognizing religion in images as an example, the essay illustrates failures and imperfections of AI technologies which are often considered more neutral than human beings. The essay calls for critical thinking on digitalization and expansion of AI technologies and encourages prioritization of humane interests as well as social and cultural wellbeing over commerciality in technological development.

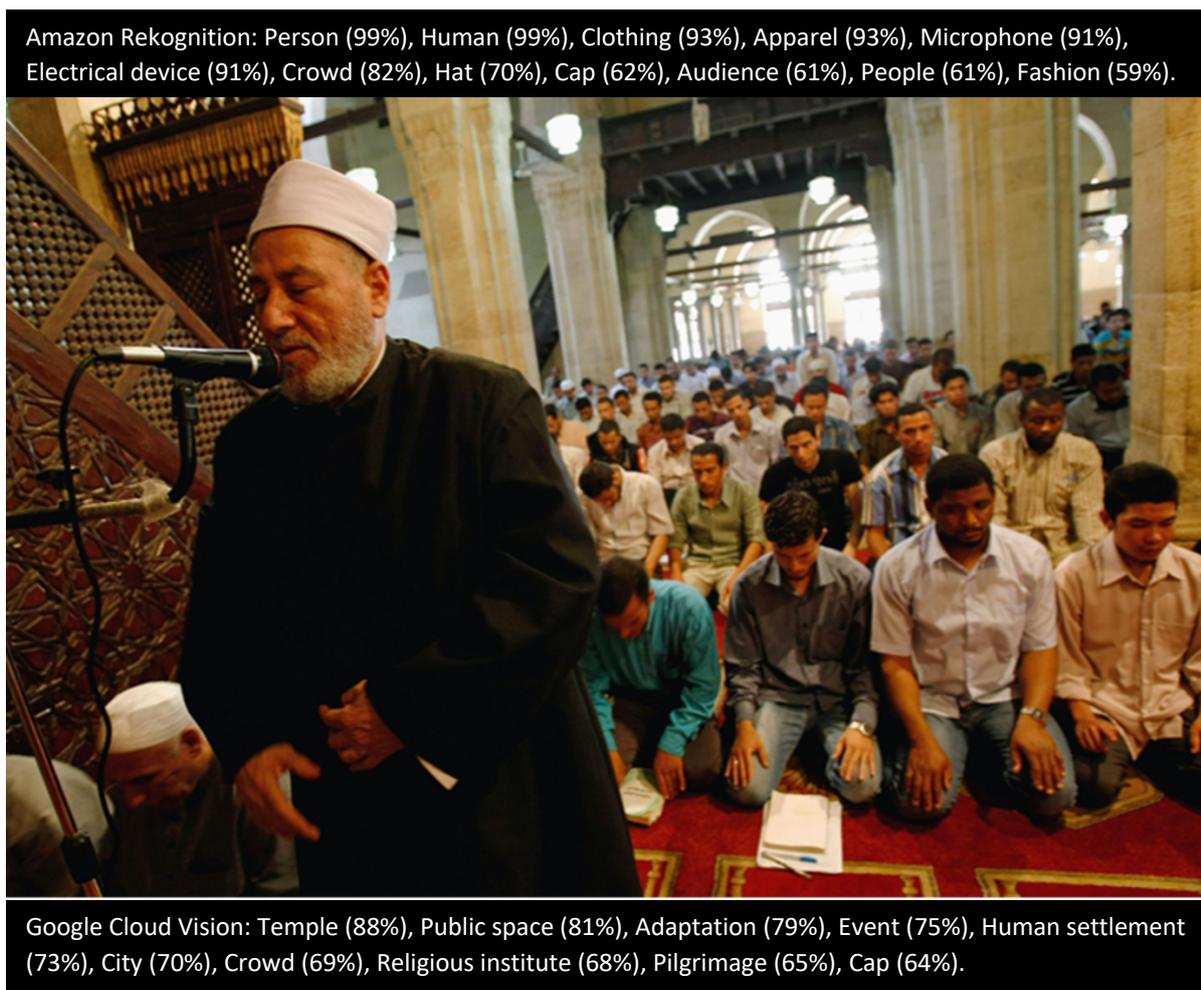
Keywords: innovationism, digitalization, image recognition, racial bias, attention economy

### 1. Introduction

Were you asked what you see in this picture (Fig. 1), you’d probably say something along the lines of ‘Muslims praying in a mosque’, or possibly ‘an imam’ or ‘men practising religion’.

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<sup>1</sup> This essay is a revised version of the professorial inaugural lecture of the writer on May 31, 2023 at the University of Helsinki, Finland.



**Figure 1.** In the photo we can see an imam and men in a mosque, but this is not what the image recognition services “see”.  
 Photo by David Silverman/Getty Images

The world’s leading tech companies’ image recognition services would take a different view. Amazon Rekognition is confident that the picture shows a person (99%) and a human (99%), while Google Cloud Vision is slightly less confident that it shows a temple (88%) and a public space (81%). Neither of them possesses the lexicon to refer to an imam, mosque or even prayer – although Google Cloud Vision’s vocabulary does feature the curious term ‘religious institute’ (68%).

This example is from the study we have conducted with Anton Berg (Berg & Valaskivi, 2023a; Berg & Valaskivi, 2023b). The research focuses on how commercial image recognition services categorize images of religious subjects. This study will be explored in more detail below.

Here the example is used as an illustration of the ways in which contemporary AI applications take part in meaning making together with human beings and for human beings. These AI tools are in everyday use, and literally in our pockets and yet often invisible. An average smart phone user might enjoy the gadget being able to recognize and label their photos and organize them into daily video reels of friends, and be amused of an occasional miscategorization, without being aware of the technology behind the feature or think of the implications it might have on larger scale.

Another mundane example of daily AI in our lives is the AI Design feature of Microsoft PowerPoint. And with growing availability of content generating AI services and applications, the everyday signifying practices (Hall, 1997) have entered a new phase of transformation.

## 2. 'The Medium is the Message'

The principle that 'the medium is the message' was coined in the late 1960s by Marshall McLuhan, Canadian professor of English literature and the pioneer of contemporary media studies. Among McLuhan's (1967) ideas, the notion most relevant here is that all media are 'extensions of man', and that they create new environments for people to operate in. To understand social and cultural change, it is necessary to understand how and what kind of environment is created by media technologies (McLuhan, 1969).

In his classic book, *Imagined Communities*, first published in 1983, anthropologist and scholar of nationalism, Professor Benedict Anderson describes how print capitalism made possible the imagination of nation-states and the idea of nationalism. Although the members of an imagined community will never all get to know each other, they feel a sense of togetherness because of their shared cultural understandings. Collective imagination always takes place with and through available communication technologies and conditioned by those technologies. The key here to recognize, however, is that Anderson's emphasis was not on the technology, he did not refer to the printing press, but print *capitalism*. In other words, the societal role and impact of communication technologies is formed in the ways they are implemented and become integral parts of social practices and institutions and everyday life, and interaction.

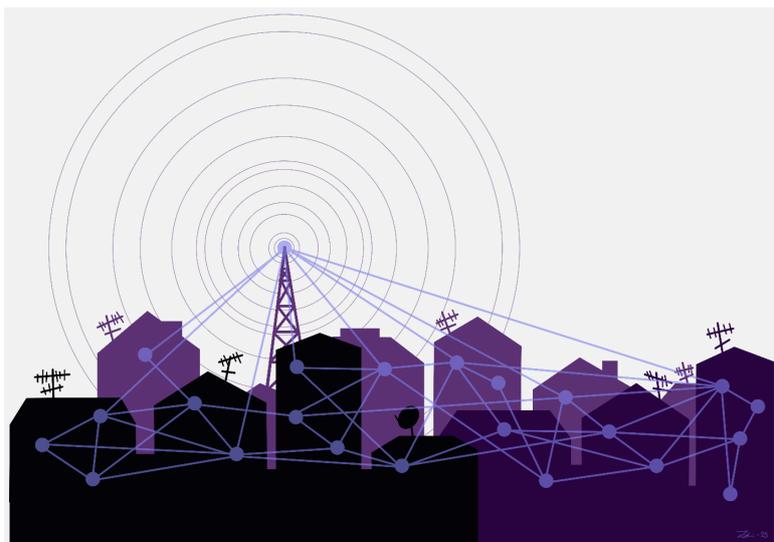
Having established that the medium is the message, and the possibility of imagining community depends on media technologies and the social application of these technologies, we arrive at questions not only interesting for scholars working in the field of study of religion and media research, but that also have great importance in our society today:

First, how is it possible to imagine a sense of community in today's capitalized commercial media environment, where imagining happens through and together with various kinds of automated systems and more recently with content-producing AI systems?

Second, how do worldviews, beliefs, and ideologies, that is, different ways of imagining belonging and exclusion change in this media environment?

And third and finally, how do shared perceptions of media and communication technologies affect the processes of imagining belonging?

## 3. Reversed tools and content confusion in the attention factory



**Figure 2.** "The network in the middle of the village"

Illustration by Liekki Valaskivi 2016

The Finnish saying “Kirkko keskellä kylää” or “The church in the middle of the village” used to describe how the central node of collective imagination used to be the church, both as a physical location and an institution of belief, belonging and meaning making. The church is still there but has become only one of the nodes among many in the contemporary signification and communication environment, which is a global, cross-border network. The development of the contemporary communication environment has, over the past 30 years, been driven by technological development and market concerns. In other words, new technologies have been adopted based on considerations of profit margins and business logics, not on whether and how they might contribute to building trust in a pluralistic society.

The change has been profound, because:

Firstly, the relationship between the production and reception has dissolved. In other words, while knowledge production has become democratized and opportunities for citizen participation have improved, it has become impossible for epistemic institutions such as the church, school, university, political parties – or journalism! – to control the production of meanings in the public domain (e.g. Peterson, 2003).

Secondly, the digital media environment is transnational in ways that inevitably have consequences for perceptions of nation, communities, and differences. Contents and meanings circulate across borders and platforms with unprecedented speed and volume.

Thirdly, the world is imagined not only by human beings but also by *reversed tools* (Couldry & Hepp, 2016; Valaskivi, 2022) that use us while we use them. If a hammer lands on your finger rather than the head of the nail, you can only blame yourself. The reversed tools of our digital communication environment, on the other hand, are constantly collecting data on users’ actions, creating profiles for profit, and curating content, further steering their actions. The reversed tools and different digital, algorithmic platforms make the media environment, which I have elsewhere described as *the attention factory* (Valaskivi, 2022). The attention factory prioritizes content that incite reactions, because reactions measurable for the reversed tools generate profits and data for the media platforms. As attention is in limited supply but media content is practically unlimited, attention is a valuable commodity. Therefore, it’s hardly provocative to say that the attention factory works on the principle of provocation.

People are more likely to pay attention and respond to affective subjects. The most affective subjects relate to basic values and belonging. This is why the most valuable and profitable commodities in this media environment are contents that deal with identity, religion, worldviews, and ideologies. If any of these trigger conflicts and confrontations then so much the better because feelings of threat, fear, hatred, and disbelief are most likely to provoke both advocates and opponents and therefore to elicit responses (Valaskivi, 2022; Kannasto *et al.*, 2023), to generate more data – and to bring in more profits.

Both media users and media platforms are therefore keen to try and trigger quick, affective reactions in users. Quick reactions are most likely to produce measurable responses: clicks, shares, comments, and reactions – some reversed tools even interpret a pause in scrolling through the content flow as a response.

This is how human emotions are commodified.

All this results in a cacophony of contents, or in the words of Professor Mara Einstein (2016), scholar in critical marketing studies and religion, *content confusion*.

In a media environment marked by content confusion, it is very hard, if not impossible, to know for what purpose a specific content has been produced: a news item can be a lie, a prank, a provocation, propaganda or possibly an advertisement. In other words, it may be impossible to know who, and with what motivation was behind the production of which content. And as social media contents reach us via various routes, through multiple shares and with comments and likes attached, it requires exceptional effort to find out the nature of the original content.

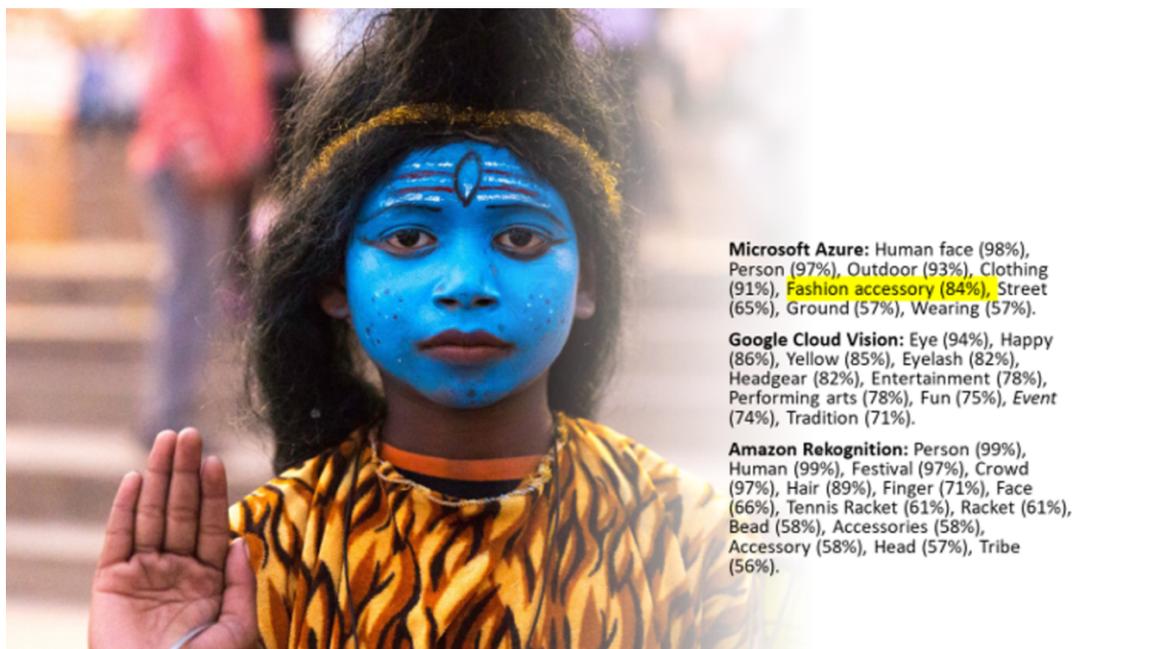
Reports indicate that utilization of the features of the attention factory, with its reversed tools, content confusion, and provocations, contributed to Brexit (Briant, 2018a; Briant, 2018b), the election of Donald Trump as US President in 2016 (CLC, 2020) as well as in the events of 6 January 2021 (Donovan & Dreyfus, 2022) when rioters stormed the US Congress in Washington DC.

#### 4. Image recognition ‘imagining’ religion

I will now return in more detail to our research on image recognition services’ abilities in recognizing religion. (Berg & Valaskivi, 2023a, 2023b)

As noted, our research interest was to study the ways in which image recognition services ‘see’ religion, in other words, how they categorize images that feature religious content. In what follows I will briefly explain some of our main findings. Unfortunately, it is not possible here to go into details of how image recognition services function.

From a user’s perspective, image recognition services give categories to images by producing tags or labels and giving a confidence score in percentages to each of these tags. The score indicates the probability in which the image represents the category in question. For instance, in the case Fig. 3, Microsoft’s image recognition service Azure is 84 per cent confident that the image features fashion accessories.



**Figure 3.** The image represents a child praying by the Ganges river. Image recognition services reproduce secular categories referring to entertainment, fashion and performing arts. *iStock photos*

The research process began with Anton Berg compiling the data from Google Images, a search engine for the retrieval of images. Our search terms were connected to different religious traditions and rituals. The complete dataset of 1189 images was fed into three image recognition services: Amazon Rekognition, Microsoft Azure and Google Cloud Vision through their application programming interfaces (API). The classifications and confidence score percentages were collected and analysed using qualitative methods.

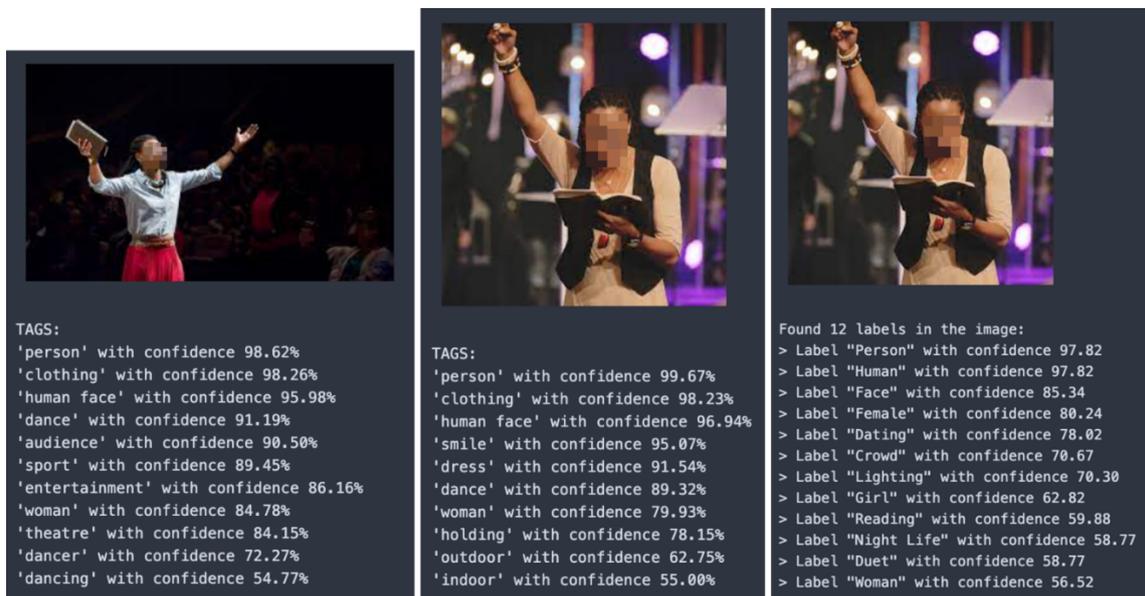
The three services together assigned a total of almost 9100 classification tags to the images. Only 85 of these categories were related to religion; and as many of 30 of these 85 tags were related to Christianity.





**Figure 5.** When the members of clergy in the images are white, male or female, the image recognition services produce a rich variety of categorisations related to Christianity. When the clergy members are Black, the systems give no labels related to religion.

The striking categories among the tags in Fig. 6 are those referring to nightlife, get-togethers, amusement, and entertainment, but also dating and dancing. In this the image recognition services follow the general media imagery trend and present Black women as sexualized objects – already an established finding in Black studies, feminist media studies and racism research (see e.g. Cesaire, 1955; Staples, 1973; Ammons, 1995; Roberts, 1999; Wallace, 1999; Woodard & Mastin, 2005; Hobson, 2005; Richardson-Stowall, 2012; Noble, 2018)



**Figure 6.** Image recognition services do poorly with charismatic Christianity. When a preacher is both female and Black, Microsoft Azure, instead of categories related to religion, produces labels that refer to night life, entertainment, dancing, and dating.

So far, we have found that:

- 1) The studied image recognition services have trouble recognizing religion and have a very limited vocabulary for describing religion.
- 2) When the services do recognize religion, they produce concepts related to Christianity.

- 3) The services perform best with images of ‘high church’ subjects associated with historical, established Christian traditions and institutions, but fail to identify Charismatic Christianity.
- 4) The services accurately identify ‘high church’ Christianity only if people featured in the images are white.

In sum, the world’s leading commercial image recognition services ‘imagine’ the world as a secular place, and they see religion as Christianity and Christianity as European, high-church and white. A norm of whiteness as well as structural racism are built into these services, which is particularly evident in the case of images featuring religious themes.

Concluded heuristically, these systems reproduce values along the lines of nationalist populist parties in Europe (see e.g. Brubaker, 2017). Like these parties, the services suggest that Christianity is a white religion and the only legitimate religion of Europe. Furthermore, like the nationalist parties, AIs devalue other religions. In contrast to European populist parties, however, the studied image recognition systems are not actively working to expand an identity conflict between Christianity and Islam. Instead, when categorising images with religious content featuring non-white people the systems produce algorithmic racialization (Noble 2018) and representational silence (Hall, 1992) as well as continue the tradition of “symbolic annihilation” (Gerbner, 1972).

## 5. From content confusion to content chaos?

AI systems are not capable of autonomous thought and self-development but need to be trained, which requires vast amounts of human labour (Suchman, 2007; Ruckenstein, 2023). As they are based on data compiled by humans, AI systems inevitably reproduce and reinforce existing power relations and biases in society. They also simplify complex issues because nuances and human reality do not translate easily into data. The implications of the reversed tool feature is even stronger and more prominent in AIs than in many other systems.

Content-generating AI systems produce text, sound or images using the data available to them mainly by means of probability calculations. They produce what might be described as replica or facsimile content – or “as-if content”. This content resembles a hammer you might buy in a one dollar or 100 yen shop: it looks like the real thing, but falls apart the first time you use it. It is made cheap and looks real, but ends up increasing waste in the world. The currently available text generating AI systems based on large language models are mostly based on the probability calculation principle. This means that they produce the kind of language that will with highest probability seem like real language to a human being with comprehension of the language. In other words, facsimile content may or may not contain accurate information, but the AI systems producing this content are not ‘concerned’ about the relationship between content and reality. In a grim view on the future we might think that if the development of social media brought us content confusion, content-generating AI applications might bring us outright content chaos.

If vague and unreliable noise increases in the communication environment to the extent that everything needs to be doubted, it has disastrous consequences to both everyday living and sustaining trust in society.

## 6. The value system of innovationism

How do understandings of technology then impact the ways in which it is possible to collectively imagine the world?

Some years ago, I was part of a project that studied ‘innovation journalism’. We interviewed journalists and ‘innovation system specialists’ in the United States, Japan, and Finland. Analysing the interviews, I discovered a belief system or contemporary faith that I came to call ‘innovationism’ (Valaskivi, 2012; Valaskivi, 2021). This faith has four core beliefs:

- 1) Humans are endlessly inventive and resourceful and can always develop new things and technologies.

- 2) Because of ingenuity and inventiveness, humans can avert the existential threat presented by climate change, even if takes a last-minute Hollywood solution.
- 3) It is possible to avert the looming destruction without sacrificing the key values of innovationism: competition, growth, success, and progress.
- 4) Innovations are a way to resolve any ‘wicked problem’ without having to question the ideology of growth – and at the same time generate new business, start-ups and profits.

Innovationism has been the driving force behind the development of new AIs and our media environment today, which reproduce old colonial, racist and sexist power structures, as our examples of image recognition above have shown. Some of the problems caused by technologies are unintentional and come about because of a narrow perspective, some because the overriding aim is just to make a quick profit, by any means. However, neither technology nor technology developers are neutral or objective. People working to develop technology can and often do have political views, and code can be written to maintain power hierarchies. Values cut through technology as well.

This is the reason why ChatGPT, a natural language generating app that has attracted much controversy of late, raises much deeper questions than students subcontracting their essays to a machine. These questions include: Why would it be in the interest of universities to give the labour of their staff and students free of charge to help train and further develop often unethically produced for-profit AI systems? Or what will happen to universities’ carbon neutrality goals if members of the academic community begin routinely to use these highly energy-intensive AI applications to generate text, sound and images? The upside among the challenges the new technologies pose is that they not only challenge our imagination but also force to collectively think of the boundaries of humanity, and what is a good society. In the academic context, profound questions revolve around the role of the university in imagining communities, a good society, and future technologies.

## 7. Living in a void

The flow of news constantly informs us about conflicts and oversimplifications fed by the attention factory: Algorithms are used for purposes of manipulation and quick profits and weaponised for triggering conflicts. Smart devices are eroding people’s capacity for attention and concentration and undermining children’s learning.

In the attention factory where in principle anyone can have their say, there is paradoxically a severe austerity of attention. In fact, attention is not a thing the reversed tools can measure, since attention is not about clicking or liking or lightning-fast emotional reactions. Attention is about listening and concentrating, about focusing, purposefully looking at and seeing. This is the crux of my argument: that life in the contemporary attention economy is in fact life in an attention vacuum. The promise of the internet is that everybody can have their say and voice to be heard. When in everyday social media life, the experience is invisibility to human eye despite all the hearts and comments, figuring out at least some of the reasons for the growing sense resentment in societies saturated by digital media – or anxiety attributed to heavy social media use. After all, without attention and care from others, babies die. Being seen by others is a basic human need.

The attention factory created by human beings is not fit for purpose as a communication environment, either from the point of view of individual well-being or from the point of view of building a sense of community, and it is also destructive to the environment. The good thing is that it is human made, meaning that it can also be reimagined and remade by humans. That will require great care, diligence, and imagination as well as a serious reassessment of our conceptions of technology, humanity, and the environment.

The tasks of increasing understanding and imagining differently, in my view, are among the core responsibilities of the university. This requires an academic community that cherishes its responsibilities to research, think and imagine together and is provided resources, time and independence to do so.

## 8. From provocation to compassion?

A wise colleague recently pointed out that good questions are more valuable than quick answers. This is why this essay concludes with some – hopefully good – questions:

If the medium is the message and social imagining always takes place through the available media technologies, what kind of communication environment should we imagine and develop to strengthen trust in society and among people(s)? What kind of media technologies and practices would support global solidarity and cooperation and build up democracy and equality? How would we need to rethink technologies to minimize the emissions, pollution and biodiversity loss caused by development, production and sales of digital gadgets and their ubiquitous daily use?

Could we imagine developing religious communities, schools, social and health care services, universities and democratic decision-making without a machine or another to mediate every interaction? Are there areas of life that should not be digitized? And above all: What kind of media and communication environment would encourage all of us, rather than react to provocations, pay more compassionate attention to one another?

Finally: Will there be a point when it is no longer possible to move forward by believing that the next innovation will fix the problems caused by the previous ones? What will happen if we reach that point?

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