

Report

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From Becoming to Being Digital

The Emergence and Nature of the Post-Digital

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1 Introduction

When the novel SARS-CoV-2 virus first made headlines in late 2019, few imagined how drastically the world would change. Since then, many countries have gone through various phases and intensities of lockdown, and people, organizations, and societies have had to find new ways to keep often taken-for-granted everyday behaviors going – from shopping to cultural activities or even everyday social interactions. Digital technologies – especially communication and collaboration tools that make use of the Internet – played a central role in enabling contact and exchange even at times when physical contact was severely limited.

For many, these limitations and their impacts were also felt in the professional context. In particular, in the first half of 2021, employers in many European countries and all around the world were prohibited from allowing their employees to continue coming into the office. As a consequence, the digitization of the economy – and with it large parts of society – has experienced an intense acceleration since the end of 2019 [11]. Following Wade et al. [17], all sectors – with the exception of those particularly affected by the lockdown measures, such as tourism and transportation – have experienced a strong digitalization push since the start of the pandemic. The media and en-

tertainment industry in particular, which has been under strong digitization pressure for years, is leading the field.

Accordingly, it is not surprising that digital topics are currently booming; digital innovation [12], digital transformation [4], corporate digital responsibility [9], or digital strategy [2], to name but a few examples, are at the top of the agenda even among digital skeptics. But many of these topics deal with questions surrounding how the respective areas *become* digital; that is, contributions in these areas tend to focus on the question of how digitalization is changing the respective areas and which theoretical and practical adaptations are needed in response. But all the justified and currently timely excitement about everything digital notwithstanding, what will the world really look like once digitalization is complete? Authors such as Bharadwaj et al. [2] or Matt et al. [10] have long suggested that digitization issues are probably more transient in nature by hinting toward the project-like and thus temporally constrained nature of many digitalization efforts. Currently, Parmiggiani et al. [13] propose that everything digital will have become so self-evident in the not too distant future that its special mention will seem as anachronistic as if someone were to emphasize the role of electricity or the telephone today.

Thus, if digitalization as a phenomenon is transitory, what should we expect in society, business, and science once this turn is complete? What will a world that is digitalized look like? And until then, how do we deal with the challenges that increasingly far-reaching digitalization seems to pose for us today? In short, how can we approach an understanding of the post-digital, even today?

To approach this question, we organized a virtual roundtable discussion on the topic of *post-digital* with experts from different fields. *Benjamin Müller (BM)*, who also moderated the panel, is professor for digital innovation and design. His research and teaching primarily revolve around topics of digital transformation. He pays particular attention to new possibilities and patterns of action realized through the use of digital information and communication technologies. *Sarah Diefenbach (SD)* is professor for market and consumer psychology with a research focus on digital products and services. Her current work focuses on

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user experience and quality of experience as (economic) success factors as well as individual and societal consequences of ubiquitous technology in our everyday lives, such as social media, fitness gadgets, or the smartphone as a constant companion. *Leonhard Dobusch (LD)*, holding degrees in business and law, is a professor of organization and conducts research on the management of digital communities and openness as an organizing principle. Since 2016, he has also been a member of the ZDF Television Council representing the stakeholder group “Internet”, where he accompanies the digital transformation of public service media. *Katharina Baer (KB)* is conference manager at Medien.Bayern GmbH, the media location initiative for the Free State of Bavaria. The subsidiary of the Bavarian Regulatory Authority for Commercial Broadcasting (Bayerische Landeszentrale für neue Medien) organizes, among other events, MEDIENTAGE MÜNCHEN, one of the largest media conferences in Europe. Katharina Baer’s work focuses on the conception and curation of the MEDIENTAGE conference program and other media events. In addition to a broad coverage of different perspectives on all things digital, we – due to the industry’s leading position around the topic of digitization – also want to take a special look at the media and entertainment industry every now and then.

The coming sections reflect our discussion along a small set of guiding questions. In addition to an attempted conceptualization of the *post-digital* as such, we hope that the ideas we discuss here can inspire complementary thinking on the part of the reader and help shed light on needed developments and decisions that can help pave the way toward a sustainably digitalized future in the years ahead.

2 Conceptualizing the Post-Digital

BM *In an effort to establish what each of us associates with the term “post-digital,” we picked a quote from Felix Stalder [15]: “Only today, now that the fascination with technology has waned and its promises ring hollow, are culture and society shaped by digitality in a comprehensive sense” (p. 20). What does this thought mean to you?*

LD I am inspired by this thought to focus less on this or that new digital technology. What is more important, are developments, that can be observed in a society, now that technology is part of everyday life and no longer special. This in turn opens up a view of what technology means and how to understand its consequences. And that, in turn, fits very well with a concept of “post-digitality”. I like

this concept because it doesn’t mean that digitality is irrelevant, that digital technologies have been overcome. No, they are shaping our everyday lives as never before. At the same time, however, we are no longer just taken in by their novelty. To some degree, this follows the “hype cycle” – after the hype, after the euphoria that may have been there at the beginning, comes disillusionment. At the same time, this also helps us to dissolve the dichotomy between the digital as the bringer of salvation or the bringer of disaster and enables a more sober, more differentiated analysis. Such an analysis then perhaps sharpens our view of where we can use the opportunities of digital technologies and where we have to address problems if we want to bring these opportunities to fruition.

SD From an economic psychology perspective, the quote could mean that the actually interesting effects of a technology become evident later on, after the first moment of amazement. A similar development as described by the “Hype Cycle”: In the beginning, when a technology is new, one is first fascinated by the technical effect itself, and probably cannot yet imagine what the technology will actually change in our society (or not). Recent examples are digital currencies, blockchain technology, or a while ago, virtual reality – buzzwords associated with huge expectations. Companies that operate within these fields are generally expected to be hugely successful. But the concrete application scenarios and economically lucrative fields often only become apparent later on. The hype cycle also speaks of the “peak of exaggerated expectations” before the “plateau of productivity” sets in later.

And of course, it can also be the other way around: small features that seem technically unexciting at first, can have far-reaching consequences. To me, as a psychologist who is interested in social dynamics and social phenomena, these cases are even more interesting. For example, many messenger services at some point introduced features like the blue checkmark in WhatsApp, indicating that the other person has read the message. That’s not technically exciting at all. But while using the feature in everyday life, the changes in social dynamics and potential conflicts become apparent: an increased felt pressure to answer for the recipient, whereas the person awaiting an answer may feel offended if he or she sees that the message has been read but not answered yet. This leads to a situation where messages are often responded to in a rush, which also diminishes the communication quality and well-being on both sides (cf. [3]). In sum, we could interpret the quote in such a way that it makes sense to separate between the amazement about what a technology can do on the one hand and what happens when technology finds its way into our everyday lives on the other hand.

KB For the media industry, technology and its progress have always been relevant, especially for the distribution of content and for the way we can consume media. The state of technology is crucial for the reach and success of content, and thus also for advertising as a pillar of financing. Digitization has had a hugely disruptive impact here. Nevertheless, it is only a next step on the journey that has already taken us from the tube TV to the flat screen. It is therefore a permanent development in which technology and digitization continuously play an essential role for the media industry.

In my view, post-digital means that what digitization has achieved so far can now be taken to a new level and be further improved. One example is the personalization of content: If I order a washing machine from Amazon, the platform will still recommend washing machines to me for the next five weeks; that's nonsense. With the insights gained from the current development, we can now work on taking topics such as user experience and customer centrality to a new level.

And this is where the opening quote comes up again: Digital is the new normal and has nothing to do with disruption anymore. So, it is now commonplace that we are increasingly mixing the analog and digital worlds.

Nevertheless, we have to keep in mind that the level of digitization is very different in various areas of life. In the media landscape, we are now well positioned in terms of digitization, I would say, even if the user experience still needs to be improved in some areas and the dominance of GAFA platforms is also a major issue. But if I look at areas such as administration, schools or the medical sector in Germany, the picture is different. So you can't define a status quo that applies to all industries, areas or to a country.

That's why I think you can say that "post-digital" is an appropriate term for the media industry. A lot has already been done here and can now be done even better – topics such as dealing with hate speech or fake news and disinformation, for example. I don't find that yet in other areas of everyday life in this country. I think the U.S. and China, and certainly other European markets, are already in a much better position. But that certainly also has to do with data protection, the political and legal framework, and social acceptance in this area, among other things.

BM One question I ask myself in this context: At what point do we specifically transition from digital to post-digital? The wording very strongly suggests a discrete distinction: Today we're all still digital, but tomorrow we'll all be post-digital. One aspect of our discussion I like to that end is that it emphasizes an important shift in focus. In that vein, the opening quote points in the direction of – let's call it – *unexcited digitalization*. We all need to pay

more attention not to discuss some great new technology all the time. What is more exciting, is the point at which the technology and the new capabilities it brings have become self-evident. That is when we can start focusing on a better understanding of the technology's implications and discover new possibilities for action that result from its use. For me, this also means that we must overcome the impulse to always try to understand the new in contrast to the old. For me, it would be more promising if post-digitality was characterized by re-imagining the world from scratch, rather than just extrapolating what we already have into an ever more digital future. Because in that future, the fact that the world is inherently and inseparably digital will make for a different world and many of the things we do today will just not make sense anymore. Today, however, we are only at a point where the door towards that future is slowly opening. The only thing we know so far is that there are a lot of different drafts of what post-digital future means: Some show defensive reactions and respond with withdrawal. In this case, it is a luxury not to be online, not to have one's data on the net. Others strive for quasi-full digitization in the science fiction extremes and dream of brain implants. I think that's a very exciting spectrum.

SD I like this idea of "unexcited digitalization". That's something I would actually like to see. That technology can be part of our everyday lives, but without excessive attention just because it is technology. I also don't want to be forced to solve things exclusively in a digital manner. For example, I still like reading "real", non-digital books and I would be happy if this were still possible in the future. That's why I believe we need to better understand the emotional values associated with the various media and channels in order to really understand and evaluate the role of the digital. That's why I cannot agree with the position of "Everything is digital anyway, so it doesn't matter anymore". I think the unexcited digital world is a beautiful vision.

LD From my point of view, the discussion so far can be nicely underpinned with two examples. The first: I think that the field of public service media is entering the post-digital with the realization that, first, it's not going away and, second, the audience under 30 is already there. Therefore, changes are necessary in order to remain relevant at all and to be able to contribute to a democratic public sphere as a legitimate player. It is then no longer a question of "whether digital" but "how digital" – that is the step towards the post-digital.

Secondly: the perspective on issues such as "hate on the net" or "online harassment". A post-digital perspective gives us the opportunity to recognize that this is not hate

on the Internet, but simply hate – period. Online harassment often has consequences outside the net, and is not based on the Internet, but often reflects certain patriarchal patterns. Nevertheless, we certainly have to acknowledge that hate or harassment may be exacerbated, rethought and cast in new forms as a result of digital technology.

KB The first example again nicely illustrates the path toward post-digital. The ARD-Mediathek, for example, has already created a very good platform as a public service. In addition, there is also very good content for the young target group from the public service brand “funk”. This way, public broadcasters are addressing the problem of their target groups’ aging as the following generations are no longer easy to reach on traditional channels when they are primarily informed and entertained on social networks. Distributing content where the young digital target group is, is a necessary and sensible strategy.

Serving all channels and platforms and dealing with audience responses requires enormous work and restructuring in media houses. Editorial teams need to reposition themselves when it comes to digitization. In addition, there is currently a lot of discussion about Europe’s digital sovereignty to counter the dominance of U.S. players. So, there’s a lot going on and to be discussed on the digital journey.

LD I, too, am a big fan of funk. However, at funk, the whole thing was put on a completely new greenfield site. It was one of the best decisions not to assign it to an extant station and not to let it become part of any established structure. It was very important for funk to be able to start from scratch. And that’s exactly why, in just a few years, funk has managed to become a relevant player in the most difficult, previously unreachable, younger target group, with offerings on digital platforms.

For me, this is a good example of a degree of post-digitality. But with ARD and ZDF, there’s the still dominant channel logic that makes total sense on a TV set. There’s a remote control and I have to select a channel. The net is different. There are no channels on the net, there is no remote control. On the net, Public service media does not have a competitive advantage that comes with being number 1 or 2 on the remote. Instead, this means that brands like ZDF, for example, will lose a great deal of their importance. What’s important instead are the formats that are found via search and sorting algorithms and that appeal to target groups in each case. In this future, organizations like the public broadcasters would also have to see themselves much more as platforms and curators of a non-profit, not primarily profit-driven media ecosystem, and accordingly also offer a stage to other non-profit providers, such as in the cultural sector or in the field of science.

A final example, to make it very concrete, is on the topic social web. If I, as a viewer, want to open up a back channel to editorial departments, then today I have to switch from the public service medias’ multimedia library to YouTube, looking for videos, such as of Jan Böhmermann’s “ZDF Magazin Royal”. Below the YouTube version of the videos, I can then comment and read comments from others. And the editors also say, “This feedback by commentators on YouTube is very valuable. We learn a lot from it. It’s important.” But within the public broadcasting cosmos, the audience is locked out, there is still no back channel. The audience is treated as if they were still sitting in front of the TV. Thus, we are a long way from a post-digital perspective. In summary, I would say that yes, the public media stations are digital, but they are not yet post-digital.

3 Toward the Post-Digital

BM *At this point we can turn to our second guiding question: What impacts and initiatives toward post-digital can we already see in our respective fields? And what might the post-digital world look like in our areas?*

SD We can see that an experience- and user-centric perspective is increasingly paying off and becoming more and more important, also beyond the examples from the media industry discussed so far. For being successful on the market, providing a certain technology is not enough. Becoming digital – somehow – is not enough to convince customers. You really have to keep in mind, who are the people I want to reach? What kind of experience do I want to create for them and then what do I need to provide? And this same way of holistic thinking is required in all areas. Also, along with the digitalization of the working world, new questions gain priority: How do I organize my home office? How do I even keep in touch with my team? How do I make sure everyone is doing well? While before the pandemic I had my team around me at least once a week, for coffee or something, we currently discuss things digitally. But I don’t have the same sense of whether everyone is really doing well; it’s a different kind of exchange. In a way, the example reveals an important step towards the post-digital – nobody mentions or is aware of “Oh, we’re meeting in a Zoom meeting today”. Here, digital has become a matter of course. Nevertheless, we are not yet at a level where it no longer challenges us.

BM For me, a key insight of our discussion so far is that the end of digitalization is not automatically the transition point to the post-digital. Instead, it is more likely to

be the starting point for a very labor-intensive and probably lengthy culture- and practice-oriented transformation process.

I think Leonard's example with the online Mediathek and overcoming the channel logic is superb. To me, it is an excellent illustration of a conceptual confusion that particularly plagues us in German because we don't have different words for two related but very different concepts. But in English there is a difference between *digitizing* and *digitalizing* (cf. [7]). Digitization, the transfer of analog assets into their digital representations, is a necessary step, but nothing new is created. Only after having taken this first step do new possibilities for action arise. And realizing these possibilities, pursuing digitalization must be the focus in our thinking.

But the last year and a half has also made it possible to experience and understand the difference between digitizing and digitalizing in an area close to me: higher education. There were many technologies and tools I was familiar with, but what incorporating them into my everyday practices as an educator would mean was beyond my imagination. Updating my understanding of my role as an educator was an intense learning process. And it revealed that what I had accepted for years as best practices in knowledge transfer was anachronistic orthodoxy at best. As an educator today, I don't just have to click a few slides and have read a couple of papers. Rather, I have to organize "learning journeys"; also in the sense of "organizing space" which implicitly supports learning. And that didn't happen in the past because space was always static: the campus was built, the classrooms were furnished, and most of the time you were not even allowed to move the chairs around without having the janitor yell at you. And now in the digital space, all these restrictions are suddenly obsolete because we have infinite possibilities to configure and reconfigure. And, yes, we don't yet have any instruments, methods, reference points, or standards for this ... I'll give you this ... but what exciting times to rethink and redevelop all of this.

LD At the same time, we have to deal with completely new restrictions and limitations. We are all getting better at transferring certain things to digital – curricula or concepts, for example – but we are also learning that it cannot be a 1-to-1 transfer. That means, we have to change it. And that also means that you can lose something by changing it. Let me give just one example: Despite all my efforts, I don't manage to get my students to turn all their cameras on in the online lecture. However, this takes away a lot of "audience response" from me, even if it is a live lecture. In the lecture hall I see reactions on the students' faces and can redirect, I totally miss that.

On a higher level, I also think we need new theories, new ways of thinking about the digital. A good example is the topic of transparency. People often think that digital technologies create more transparency. However, there are two ways of looking at this transparency. One says that these new digital technologies enable a higher level of transparency and thus lead to more accountability. This way of thinking is reflected, for example, in the whole open government discourse – freedom of information and transparency laws, for example – and also in companies and their corporate social responsibility policies. Because we can see more thanks to digital technologies, there's more accountability and more responsibility. And then there's the second way of looking at things. It says that none of this is true. The new possibilities are being used for "open-washing". They only pretend to be open, while, in reality, authorities selectively choose what is shared in what ways. Here, transparency is seen more as a new form of concealment. What both views have in common, however, is that they only pose the question of how new digital technology changes the structure of transparency. In my work with Maximilian Heimstädt [6], we therefore tried to develop a third perspective, one that asks how is transparency actually negotiated? This perspective focuses more on how experts, practitioners and theorists negotiate transparency together. And suddenly there are completely new fields of research that are still unexplored.

SD I think the different examples – from teaching and organizing learning journeys up to discussion around transparency – the state of digitalization and relevant questions can still be very heterogeneous. So, I am a bit careful with the general thesis that now, in the year 2021, we have definitely opened the door to the post-digital world. Twenty or thirty years ago, we already had the feeling that a wave of new technology would change everything, that a new world was dawning. In the same way, I can imagine that in ten or fifteen years we'll be saying, "But now we've really taken another step and the post-whatever world is coming." So, the process is rather continuous, and because it's happening very differently in different areas, it is not easy to grasp. I think that makes it very difficult to look into the future now and imagine when the recent course will be finished or when a plateau will be reached.

BM Even though I believe that we will take massive steps toward post-digitality in the coming years, the last few months have also made me think. In particular, I perceive a strong resurgence of orthodoxy. Technology and progress skeptics are experiencing a bit of a renaissance, often using the same old arguments we have seen around for centuries [14]. Ever louder criticism of home offices and

distance learning are just two examples. My problem with these positions is that they are often put up for discussion without the proponents having really done what Leonhard mentioned earlier: No one has thought about whether what we have always done still makes sense in our new normal. Rather, we are looking at things the wrong way around by trying to do the same old things we have always done, but with new tools – completely devoid of ideas and visions. Rather than pushing on with a transformative momentum, we are hell-bend on restoring the status quo *ex ante*. This creates uncertainty for me: How strong will this restorative effect be? So much will depend on whether we manage to overcome this inertia!

In this context, I really liked a quote I read last year: “Just because we haven’t found effective ways to virtually onboard employees, create weak ties, and orchestrate relationships for talent development doesn’t mean we can’t” [1]. This shows that we have to keep at it.

LD In a way, the first year of the pandemic was a window of opportunity for many areas. Many clichés and reservations disappeared, and the familiar killjoy arguments no longer worked – many people can work from home after all, for example.

But what was also important in the first year of the pandemic was the all-round certainty that everyone was improvising. Normally, when a company with an established offering says, “Now we’re doing something digital,” it’s measured against the best that the competition has to offer. It’s also measured against the best analog offering that competes with it. At the same time, we know that failure is part and parcel of the new. Of course, there is a learning curve, and that is one of the greatest difficulties in innovation processes, whether digital or not. You have to ensure that this learning curve is accepted and endured. The pandemic has forced that to a certain extent. And because everyone was in a comparable situation at the same time – i. e., all the competitors and customers and so on – you could suddenly try things that you wouldn’t have dared to do otherwise. And it was accepted because everyone was improvising, so to speak, and everyone knew that everyone was improvising. That was a real catalyst for digitization.

BM However, there is always a bit of inertia that has to be overcome. At the beginning of the pandemic, I spoke with a company in Switzerland. They also came up with the arguments that people no longer meet and new ideas can no longer be developed – and that this is so important for the company. Because without these “coffee corner moments,” all innovation goes down the drain. We now know that things may not be quite so dramatic [16]. But what I find much more exciting is, if you have diagnosed

this as a problem, what have you done to address this before the pandemic hit? And apart from erecting a concrete box and plugging in a coffee machine, most companies didn’t do anything – and even these things they did not do to support weak ties, innovation, and serendipity. Nobody thought about how ideas are created, which communicative processes are important, how you build community and culture, and so on. The only idea they had was collocation in space and time. And then somebody took this great tool away from them and suddenly they were completely outside the idea space that they had mastered. To me, the one thing these discussions have revealed is not how great things were in the good old days, but the lack of ideas or perhaps the willingness to deal precisely with the processes that are at the heart of being post-digital. Now is the time to transcend the question on whether there is a better way of doing the things we have done for decades. Rather we must begin to wonder which things we want to be doing the day after tomorrow. But no one asks what we would gain if we were allowed to go back to the drawing board and think about how we would actually organize ourselves. How would we do it then? This also links back nicely to the funk example of Katharina and Leonhard earlier.

KB In some areas, there is more experience than one might think at first glance; in university teaching, for example. The idea of distance learning is not really new. If you consider at an early stage how knowledge can properly be conveyed remotely, then it also works very well in this way. But when people are thrown out of their coffee corners, it can quickly lead to shock or perplexity. This may tempt many people to desperately want to restore the former situation.

SD It often turns out as a problem when you simply try to implement the rules and practices from the non-digital world in the digital world. That doesn’t do justice to either. On the one side, you disregard the potential that the digital offers. There are forms of communication that can only take place in the digital world. On the other side, I would also say that there are moments that you probably can’t experience in the digital space: A picnic in the English Garden with my research team can hardly be transformed into the digital space. Of course, we can have a digital meeting instead, but the result won’t be the same. And this fundamental idea still simply has to get through to some people, even in academia.

That’s basically the same thing that I’ve already described in my research on social norms [5]. If you assume, for example, that a conversation via chat is actually like a direct conversation, then I have to say hello and goodbye, too. But if you see it more like a bulletin board, you come

to completely different conclusions and get upset about different things. If we take such experiential aspects seriously, then maybe we'll manage to develop better formats for both worlds.

LD Here, too, an important effect of the pandemic becomes visible: The compulsion to move into the digital realm has undermined the self-evident nature of certain well-trodden paths. Now we know that it doesn't have to be a certain way. What seemed like a restriction for some has suddenly turned into a huge enablement for others. Some introverts, for example, find it horrible to now be put back into crowded lecture halls where they can only get a word in by shouting. For them, the switch to written forms of communication has been a great relief. Furthermore, if we apply the full spectrum of neurodiversity, the additional potentials of the new world become clearer. Nevertheless, let's be clear again: digital is not better or worse per se. Digital is different and different can be good and different can be bad. And different can be both, depending on the goals and the people involved.

BM I would even like to take it a step further: The fact that we're still talking about digital at all is likely an indication that we haven't arrived at the post-digital yet. The very question of whether digital is better or worse still points to a real dualism, an either/or, a versus. In the long term, however, we must overcome this. This is also a development that we have seen in sales, for example. In that domain, we have now realized that channels are not viewed differently by most consumers, most of them don't even care about them. Accordingly, it's no longer about multi-channel sales, but about omni-channel. What customers care about is a seamless customer journey. For our discussion this means that we need to get to a point where we don't have two sides. We just have one world that is richer than just orthodox on-premise thinking because of its digital plane of existence.

SD In that sense, you could say post-digital is when digital and non-digital are just descriptive characteristics and just one difference among many others; and not qualitative judgments. That's at least something I would conclude from what has been said so far.

4 So What Now?

BM *What implications or challenges can be derived from this for today's world; in particular for decision-makers?*

SD From my perspective, the best advice would be to give up this thinking about the digital as something specific. We have to think about what goals do we want

to achieve while the question of the appropriate means comes second. And if it is a mixture of digital and non-digital elements, then we should also dare to blend them. And of course, there are still a lot of specific challenges, for example with regard to legal issues or the use of AI in different areas. A lot of questions that have to be clarified somehow.

KB So, I think that in the future it will be increasingly a matter of further optimizing and improving what has been created digitally and clarifying regulatory issues; the buzzword is digital sovereignty. For me, this is also a bit like "civilizing the digital". It's about creating a world in the digital realm and making the rules and norms of our everyday analog world transferable. The key question is: What kind of (post-)digital world do we want to live in?

LD Well, I can totally underline the point about civilization. Online is a bit like the Wild West. There were laws in the Wild West, but they weren't enforced. What was actually lacking were institutions and infrastructure that supported civilization. Because one of the difficulties of civilizing is that arguing with people polarizes them. And many people don't like disputes and would rather not to argue too much. I think that this is dangerous because in some cases it can lead to conflicts that need to be fought out not being fought out, and that in turn encourages destructive conflicts that you don't want to have.

And what role does the digital infrastructure play in this? One of the most beautiful comparisons for me that illustrates the topic well is the one between the large commercial platforms YouTube, Instagram, Facebook on the one hand and the only non-commercial platform with a global reach of our time – Wikipedia – on the other. You can certainly still argue about a lot of things on Wikipedia – topics like inclusion, for example – but in one respect Wikipedia is ahead of the other big platforms. There is only one article on each topic. People who have opinions on a topic are forced to argue it out. And it's not pretty! You would rather not be part of such an "edit war"; it's exhausting, it's tedious, it's sometimes rude. It's a bit like "you don't want to know how the sausage is made" – you want to read the article in Wikipedia, but you don't want to be there when it's written. But this is, despite everything, constructive conflict that forces compromise. In the end, there is an article, even though many may then see that as a bad compromise. But Wikipedia forces people to come together and argue with each other. On YouTube, on Facebook, on Instagram, on Twitter, on the other hand, it's about who shouts the loudest, who emotionalizes, who polarizes the most? Who manages to get the most retweets, likes, shares? And those interactions favor, driven by algorithms optimized for engagement, those who radicalize,

emotionalize, and polarize. And there is no compulsion to somehow agree with anyone. This isn't just a transfer from analog to digital, it's polarization on steroids – digital steroids. Yet we need conflict, the struggle for compromise! We need to create rules and spaces for conflict, so that we can argue in a civilized and constructive way. I believe this is one of the major challenges for the coming years.

SD Well, I would definitely say that providing a digital infrastructure is not neutral. Structures that are created always suggest certain forms of communication and dynamics.

If we come back to our current guiding question of what implications can be derived for decision-makers, I would say: Take responsibility! Think about what kind of behavior you are actually suggesting when you build in certain mechanisms and structures. But I would also emphasize again that I don't want to put the digital label so much in the foreground. Especially when we talk about post-digital, it's simply one distinguishing category of many for the habitats we create.

BM When it comes to civilizing, I find another question exciting: do we have to civilize virtual space in such a way that it conforms to the social norms we already have? Or do we also have to understand that we have to evolve the standards of our civilization as a whole, now that our civilization also has an inherently digital sphere?

SD I suggest the latter. We have to understand the world as a whole and it has digital and non-digital aspects and many more dimensions of distinction than just this one. And, of course, there are questions that come more to the fore in one space or the other. But I don't want to talk about the digital and non-digital as two separate worlds.

LD Nevertheless, I would say that there are also completely new questions. For example, issues like the character of platforms like Facebook and Twitter. These are new phenomena that require new answers. The draft of the new German Interstate Treaty on the Media (“Medienstaatsvertrag”) coins the term “media intermediaries,” which is actually quite innovative. Because Facebook with its newsfeed and YouTube with its recommendation algorithms are more than just cable network operators. There's ranking and recommendation, there's intervention. At the same time, it's not the same kind of editorial intervention as, say, in traditional newspapers. That's something different. And how you deal with that calls for different solutions and not some half-hearted translations of what's already there.

KB With regard to the question of how to proceed, I think it's important to make a finer distinction between the different areas of life in the future. In my view, the media are already on the way to post-digital in many places and

can now optimize their services even further, and make the media world even better. But basically, the areas of life are very diverse. Before we develop general ideas about how to proceed, I think we need to look at life aspects in a nuanced way.

BM I think it's great that we've looked at this transition between digital and post-digital from different angles and with different content. This is very important for clarifying the terminology and the development that still needs to be mastered; and some of the examples help illustrate the necessary distinction between the terms. We have to understand that the end of digitalization is not the transition to a state of post-digitality, but that new challenges await us. These challenges will revolve around radical change in practices, culture, and values and will not be primarily concerned with technology any longer. These challenges will no longer ask what is technologically possible, but will focus on what is socially desirable and ecologically sustainable. And these challenges must then be mastered responsibly through smart policies, strategic foresight, and forward-looking innovations.

The heterogeneity that Katharina mentioned is certainly a particular challenge. This is another painful reminder that topics such as the “digital divide” (e. g., [8]) are still relevant after all. In order to be able to take a step towards post-digitality, we must be able to assume that the process of digitization is to some extent complete. This is, so to speak, the digital homework that still needs to be done at this point.

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