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The Power of Algorithms and the Structural Transformation of the Digital Public

Introduction

The public sphere is the central arena that makes democracy possible at all.[1] This has been the case since the "rule of the people" first saw the light of day in ancient Athens as a counter-design to the arbitrary rule through sheer power of tyrants and kings. Since then, this public sphere has been the commonly shared space in which understanding and the formation of the will of the citizens takes place. It is an arena of struggle and debate between speech and counter-speech, which nevertheless proceed according to rules that have developed over centuries. It is only in this arena that discourse, and criticism can be used to negotiate always new how the community is to be shaped, which rule is legitimate and which is not. Only in it can free people live together according to rules that they have given themselves and which can therefore generate a lasting bond because they stem from an act of self-determination and are compatible with the highest degree of self-determination. But in the digital world there is hardly any public space in this sense, its rules—at least for some actors—are no longer valid.

Today we need to understand how the public sphere, which will stay essential for democracy, is being changed by the power of algorithmic decision-making systems that are in the hands of a few globally operating corporations, and how it is being destroyed as a result. The digital structural transformation of the public sphere, which we have been experiencing for about twenty years, has the effect that the public sphere is increasingly shaped and thereby also deformed by the mechanisms of digitalization. Today, even in developed societies and enlightened democracies, different groups in society face each other more and more irreconcilably and with hostility, unable or unwilling to enter into the process of common will formation if only because they can no longer reach agreement on the simplest facts. This division of society is largely brought about by the algorithms and business models of social media. They are not the only cause for this, but an essential one.

The commonly shared space of facts, values, and decency in which the cause of res publica, the public affairs, is determined, is diminishing. A pro-

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1   Habermas, Jürgen: The Structural Transformation of the Public Sphere: An Inquiry Into a Category of Bourgeois Society, Hoboken, New Jersey, 2015, german: Habermas, Jürgen, Strukturwandel der Öffentlichkeit, Untersuchungen zu einer Kategorie der bürgerlichen Gesellschaft, Darmstadt 1962 and Arendt, Hannah: The Human Condition: 2nd Revised edition. Chicago 1998, german: Elemente und Ursprünge totaler Herrschaft, Antisemitismus, Imperialismus, totale Herrschaft, München 1986.

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cess that is closely linked to the logic of social media algorithms: In the prevailing economy of attention, they reward publications that emotionalize and contribute to the bubble formation of public communication through self-reinforcing effects.[2] Only recently have the effects of this deformation, which is increasingly dividing societies, come into general awareness. This consciousness is emerging at a time when, more and more societies are realizing the extent of the negative effects of emotionalizing bubble communications, so hopefully just in time. The structural transformation of the public also means that traditional press companies are weakened, and more and more Algorithms are used in public communication.

This raises the question of who will shape the future: the logic of technology or the logic of democracy and human reason? The former is based on a narrowly understood scientific-technical worldview, the latter is oriented towards social and political norms. To answer it, we need to rethink this public space, its architecture, and the future design it can have after the digital transformation. In addition, we need to rethink what makes it possible for people to rethink in the first place: their reason. A reflection that has only just begun in view of the possible replacement of this reason by a "superior" AI. And it should come to fruition soon. Because otherwise the question of who will shape the public sphere of the future will be answered by technology, or more precisely by artificial intelligence one day.

1. Public Sphere: Origin and Meaning

The public sphere has been defined since antiquity by demarcating it from private space. For the Greeks, this was the oikos, one's own household, from which economy and ecology were derived. The citizen first had to be free, able to form his own household, in order to be able to raise his voice as part of the assembly in the polis. The assemblies took place in the agora, where the market of goods and services was also held. The private sphere and its protection were thus the precondition for the emergence of the public sphere. The exact boundaries of both spheres, as well as the question of who was entitled to these rights, were constantly renegotiated, and shifted over the centuries. In the modern era, following Hannah Arendt, the social was added as a mid-

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2   See among others: Jaster, Romy; Lanius, David: Die Wahrheit schafft sich ab, wie Fake News Politik machen, Ditzingen 2019 and: Russell, Stuart: Human Compatible, Artificial Intelligence and the Problem of Control, New York 2019; german ed. Frechen 2020. p. 16f

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dle and mediating sphere between the private and the political. It was also Hannah Arendt who recognized that the complete dissolution of the private through total socialization leads straight to totalitarianism.[3]

Above all, economic activity detached itself from the oikos of the individual and became the economy we know today. Through the division of labor, the movement of goods and trade, an enormous dynamic was unleashed. In the newly created public space, also made possible by new media technologies such as first printing, then radio, film and television, a public sphere emerged that enabled the negotiation of public affairs through processes of public communication and decision-making. In the process, the blind spots, and foreshortenings that in the early days of democracy reflected the limitations of a patriarchal slaveholding society and therefore excluded women and slaves from political participation increasingly dissolved. In the modern era, a universalist pattern of reason has become increasingly prevalent: The fundamental rights to free development of the personality, to participate in general and secret elections and the principle that equal rights apply to all are precisely only fundamental rights if they concern all people, if all people can invoke them regardless of gender, class, religion, social origin, or sexual orientation. These values have gained their power and charisma not least through their universality. Without publicity, their development would not have been possible. Conversely, they are constitutive for the functioning of the public sphere.[4]

This development has long been seen as a process of progress in which implicit norms gain ever more explicit validity by embodying themselves ever more strongly in laws and institutions. Hegel defined history as "Progress in the awareness of freedom"[5]. Today, this freedom, but also the consciousness of it as a fundamental factor of modernization, is acutely endangered. If Hegel wrote his philosophy against the historical backdrop of the French Revolution, today we must understand the causes of populism and authoritarianism as side-effects of unchecked technological development. The structural change of the bourgeois public sphere once described by Jürgen Habermas is marked by the storming of the Bastille, the digital structural change of today by the storming of the American Capitol as a respective historical caesura.

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[3] Arendt, Hannah: The origins of Totalitarism, 2nd ed., Edition Charleston 2011.

[4] Habermas, Jürgen: The structural Tranformation of the public Sphere, opt.cit.

[5] "Die Weltgeschichte ist der Fortschritt im Bewusstsein der Freiheit" That does not mean only in the awareness of technological optimization. Source: Hegel, G.W.F.: Philosophie der Geschichte, Werke Bd. 12, Frankfurt 1970, p. 39.

The iconographies for both incisions come from Eugene Delacroix, whose painting "Liberty Leads the People" from 1830 shows the tricolor-waving folk heroine Marianne with half her breast exposed, leading the people to the barricades in the name of liberty. An unemployed occasional actor, taken by an AP photographer inside the Capitol with his chest also bared and crowned by buffalo horns, became the icon of our days. Symbol of the people's amplifier social media, to whose echo chambers he owes his crude world of imagination. Two pictures, both iconic, both equally determined by the national colors of blue, white and red. But both with an opposite message: A people that would not have risen up without the writings and pamphlets of the Enlightenment thinkers, a mob that would not have set itself in motion without the echo chambers of Facebook, Twitter and Telegram. The public sphere has always also been determined by the media technologies that made it possible and, in the process, shaped it. But if modern democracy was born when the Bastille was stormed, it was almost buried when the Capitol was stormed.

At the same time, new technologies were always celebrated as liberators of humanity. This was also the case with digital media in their beginnings in California in the 60s and 70s, which today, instead of enabling emancipation, threaten freedom and democracy because of the way the algorithms of surveillance capitalism work.

"Marianne" as an anonymous woman from the people became the french national figure of the revolution. An icon that, created by an artist, becomes an allegory of an entire people and a symbol of freedom. The occasional actor Jake Angeli from Arizona is largely created by algorithms of exaggeration and provocation, to which he adapts his strange appearance and finally owes the longed-for worldly attention. He thus becomes a symbol of the threat to democracy posed by the mechanisms of populism and the digital attention economy. While "Marianne" embodied an idea that went around the world under the slogan freedom, equality, fraternity, the buffalo man embodies the image obsession of a narcissistic social media age that lures with the promise to give everyone, if they are sufficiently crazy and stand out, their 5 minutes of fame spread by the digital viral mechanisms of the attention economy, that rules social media.

These "viral" laws of social media combined with the with the fragmenting effect of the algorithms undermine the basic function of the media public sphere, and thereby the immunity of democratic society which forms public opinion from published opinions through criticism and discourse. For a

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"deliberative" public sphere, as Habermas called the bourgeois public sphere, needs facts and arguments as well as opinions presented in a spirit of respect for other opinions and other people. And it needs, above all, faith in the power of reasonable arguments on the basis of commonly shared facts. Only what prevails in these debates through convincing arguments after a controversial discourse can itself shape opinion. For published opinions to become public opinion, reflection and discourse are mandatory. They are the sounding board of democracy. Replacing them with algorithms leads us astray in the situation we find ourselves in today in which democracy is increasingly coming under attack.

Weighing up, arguing with a focus on factual arguments while sparing the persons, that is at least how one could describe the ideal image of such a public sounding board, which is guided by the rules of "reasoning", by the rules of reason. "I disapprove of what you say, but I will defend to the death your right to say it", the great Enlightenment philosopher Voltaire is often quoted. Even if the quote is not authentic, it still says something true[6]. Not everyone abides by this ideal—not even in a democratic public sphere. Nevertheless, the ideal of tolerance, in which one advocates the free expression of dissent, is more relevant than ever. In the technical digital public sphere, all these factors that are essential for the formation of public opinion no longer exist. Here, only the laws of the so-called attention economy prevail, behind which nothing else is hidden than the total unrestrained economization of the public sphere, which takes less and less account of other spheres of value. The digital transformation has already put democracies under pressure worldwide. A few years ago, movements such as the Arab Spring made it seem as if democracy and self-determination would be fuelled worldwide by digital possibilities, but for some time now the negative effects of this development have been coming more and more into focus. The digital organisation of such a freedom movement alone obviously cannot ensure its sustainable success. This would require an association of people who are committed in the long term to implementing their interests in a political programme. The digital can enable such a union, but it offers no substitute for lasting commitment and the institutional safeguarding of fought-for freedoms. In contrast, the attacks on democracy from inside and outside by autocrats or populists, by

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6   It originates from Hall, Evelyn Beatrice: The Friends of Voltaire, New York 1907, cit. Cornell University Library 2009, The phrase originally intended by Hall as a summary of Voltaire's attitude, was widely misread as a literal quotation from Voltaire.

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troll factories and hackers work all the better digitally. The disruptive forces of the digital are at work behind the scenes of this transformation. In the long run, they seem to be stronger than the emancipatory potential of alternative forums, such as those that made the Arab Spring and other liberation movements possible.

Increasingly replacing editors and journalists by technical algorithms, has several consequences that are barely compatible with democracy. It could turn out, that human actors, with all their weaknesses, are better able to regulate this space at least if it is to remain a democratic space.

2. Disruption of the Digital

In the liberal theories of the 18th and 19th centuries, the market and democracy are understood as systems in which prices can be formed through citizens' free access to information, flows of goods are directed, and political rule is legitimized through criticism and free discourse. The recognition of a private sphere, which is defined by the fact that everyone himself determines how much of it he discloses publicly, forms the reference point of personal freedom, which is the prerequisite for being a citizen in the political debate. It is only possible when it is protected. Conversely, the institutions of a democratic state in which, alongside those of democracy, fundamental rights and the rule of law prevail, form the prerequisite for all citizens to be able to live in freedom.

In this model of deliberative democracy, the free circulation of both verified and verifiable information in a public space, the rules of which are in turn set by this public itself, is the prerequisite for freedom and self-determination. Today, this model is under attack worldwide because the public has undergone a paradigm shift that is as imperceptible as it is radical, operated by a handful of big tech companies that like to describe themselves as "disruptive": "Move fast and break things"—with this motto Marc Zuckerberg started to turn the platform he designed for his university into a global corporation, which, as Zuckerberg's description of the mission was, pretended to pursue the goal of potentially connecting all people with one another. But he soon started to connect all data with one another to create personal profiles and templates from them that could be monetized on the commodity futures markets of the advertising industry. The funny communication of trivialities to friends became a communication system that rewarded emotions in order

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to be able to control and manipulate emotions better and better to be able to place advertising perfectly and thus the greater its importance for informing citizens became increasingly undermines the reasonable and civilized discourse. The "destroy things" became more and more a "destroy democracy".

Under the pretext of networking people with one another, social media first collected people's data and then networked them with one another for pattern recognition to create behavior predictions on this basis that revolutionized the advertising markets as killer applications, and were incidentally, the classic grave diggers of Media. Media as the fourth estate has the task of providing information and forming opinions guided by self-regulation that is independent of the state but complies with democratic law. Privileged rights of the press with access to information and, for example, the protection of informants—in return, self-commitment to responsible and careful handling of information and compliance with general personal rights—naturally including compliance with the criminal code V.i.S.d.P.—so is the abbreviation in the imprint of newspapers in Germany.[7] But apparently nobody in the digital public is "responsible in the sense of the press law" anymore, at least not the big platforms that organize and control everything and profit out of it most. The major platforms rather reject this, citing so-called platform neutrality.[8]

The digital public consists of total transparency of the individual user data for the platforms with a simultaneous total lack of transparency of the algorithms for the public, which, like the secret formula of Coca Cola, are declared a trade secret. The disruption of the public therefore also means that the design of the public spaces is largely hidden from this public, while at the same time the privacy of the users is dissolved.

With the same means with which the AI algorithms are presented with ever-richer Big Data collections, the people who provide this data in abundance are threatened in their privacy and their self-determination.[9] By us-

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7   "Verantwortlich im Sinne des Presserechts": Responsible in the sense of the Press Law is the form used in German publications to indicate the responsibility under press law for the published content.

8   Platform neutrality became largely part of Communications Decency act (CDA) in 1996 in US due to Barlow, John Perry: 'A Declaration of the Independence of Cyberspace', Electronic Frontier Foundation, February 8, 1996, https://www.eff.org/de/cyberspace-independence (September 22, 2021). See the current discussion about "Section 230" in the US: https://www.latimes.com/business/technology/story/2021-04-27/facebook-twitter-youtube-pressed-on-poisonous-algorithms

9   See for more details to the following: Zuboff, Shoshana: The Age of Surveillance Capitalism. The Fight for a Human Future at the New Frontier of Power, New York 2019.

ing their personal profiles to make predictions about their future behavior they are addressed where they are most vulnerable. With their feelings, especially their fears. The greater the amount of personal data that the person concerned has left behind, the more accurate these addresses are. The more precisely algorithms can calculate the probabilities of future desires, needs and future actions, forecasts that allow advertising to be placed in a targeted manner that shows the highest possible conversion rates for purchasing the advertised products. It is about quickly and safely gaining their attention and keeping them as long as possible: through emotions, especially negative ones, such as fear, indignation and horror. The logic of targeted advertising is increasingly taking hold in the formation of political opinion, but it has no place there. As former Google employee and technology ethicist Tristan Harris pointes out: "As long as social media companies profit from addiction, depression, and division, our society will continue to be at risk." Harris founded the Center for human Technology (CHT) which is dedicated to reimagining the digital infrastructure.[10]

This digital structural transformation of the public sphere has expanded into a tectonic shift in the balance of power around the world. Today, the question of whether and how the democracies can succeed in limiting the power of big tech and subordinating it to democratically established law is becoming more and more acute. If algorithms increasingly determine the basic functions of our democracy, the question arises of who determines the algorithms. The answer: they are a handful of global companies that are also among the financially strongest companies history has ever seen. These companies have understood how to develop and offer digital services as "early movers", which have established their dominance on the world markets through the effects of the network economy. They can be divided into companies of US (GAFAM[11]) and Chinese provenance.

Both seem to follow a different political, but largely comparable technological and economic logic. US companies in particular have been able to

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10   Tristan Harris, Named to the TIME 100 "Next Leaders Shaping the Future" and Rolling Stone Magazine's "25 People Shaping the World," Co-Founder & President of the Center for Humane Technology, which—in it's own words—is catalyzing a comprehensive shift toward humane technology that operates for the common good, strengthening our capacity to tackle our biggest global challenges. Source: Harris, Tristan: Time well spent. In: Center for humane technology, An Introduction to our work, https://humanetech.com (September 22, 2021).

11   Abbreviation for Google, Apple, Facebook, Amazon and Microsoft.

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develop outside of democratic law thanks to the neoliberal ideology of free and unregulated cyberspace that has prevailed until recently. Today there is no longer any argument about the need for rules that are suitable for limiting their negative impact on the formation of public opinion. It's just a matter of how exactly and when they will come.

But why do these companies only "initially" determine which algorithms structure the public space and thus have a decisive influence on the political shaping of the world? It is possible, but not certain, but also not ruled out, that technical systems develop such an intrinsic logic and "autonomy" that they transform the domination by technology, as it is exercised today by big tech companies, into a domination of technology itself. The development of such a powerful technology from today's AI could take place further as "general" Artificial Intelligence, "superintelligence" or as a complete integration of unlimited big data and the algorithms of quantum computing which is unequally powerful by today's standards.

The future of the public and the future of democracy, like the future of individual autonomy, depend on the political and legal shaping of a technology that has already proven to be powerful enough to challenge democracy.

3. The Economic-Technical Public Complex

Behind the logic of the social media algorithms is the business model of so-called targeted advertising[12], personalized advertising, which threatens democracy in several ways: By creating personalized data profiles, it wants to lay the foundation for targeted advertising that is delivered to the user at the ideal time. This only works if as much data as possible is collected about the user, for which he should stay on the relevant social media pages for as long as possible. Emotional and scandalous messages are therefore preferred on these, and further behavior of the user in the network is read out through tracking with cookies. With this knowledge, not only behavior profiles are created that, as in the old analog advertising models, define abstract "target groups" and deliver suitable advertising to these groups. The advertiser in targeting advertising is promised more: his ad should be placed with the customer, precisely at the time when he is so interested in the advertised product

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12   Amongst others, Google AdWords integrates advertisements into web pages through contextual placement, which requires the registration of personal data.

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that he kicks and buys it. This conversion also works without any media discontinuity. While classic advertising in magazines, radio and TV is supposed to be memorized by constantly repeating an easily recognizable message in order to be able to influence consumer behavior when shopping in the store days later, targeted advertising aims entirely at the momentary attention. It is important to captivate and influence them, since the advertising message and ideally the purchase of the product on the Internet is always just a click away.

The attention economy of Internet advertising is thus shaping a cult of the moment. Satisfaction is immediately promised in the here and now, the apparent immediacy, in which all wishes can supposedly now be implemented, has paradisiacal features. Reflection, contextualization, and criticism are undesirable. Reflection is transformed into a pure reflex. The new attention economy is not only operating the old manipulation business of classic advertising and PR, but also driving it into completely new dimensions with the new technical possibilities of reading out individual profiles. The attempt to control the conversion rate upwards, which can be measured and manipulated just as precisely as the user, ultimately leads the classic model of manipulating behavior through advertising into completely new dimensions.

Ultimately, this model is about making the advertising message appear as a perfect match for the user's deepest desires. It's about controlling ones free will.[13] Because this manipulative model not only dominates information behavior about products, but also about people's global knowledge, and because people are increasingly communicating according to these rules, the two greatest dangers for democracy grow here: false, manipulative, and selective information as the basis of group communication that is geared towards confirmation loops and constant rule violations. Ultimately, only those who are sufficiently conspicuous to attract the attention of the trained algorithms can be heard and seen. This form of communication in social media platforms then in turn creates social pressure to adapt in the direction of cheeky "influencers". Through the constant high level of general excitement, it creates the possibility of triggering "shitstorms", digital campaigns of hatred and destruction, which increasingly create a climate of fear and self-censorship. And that in supposedly completely free cyberspace.

The first threat to democracy, which consists in the weakening of the autonomous individual through superior knowledge on the part of the plat-

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13 See Zuboff 2019.

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form, comes as a second threat to the effect on social group formation and group dynamics. The disinformation leads to miscommunication. A controversial development of decisions that is ultimately accepted as a majority decision presupposes that the discourse takes place based on shared values. But if a consensus cannot be reached even on simple facts and fundamental truths, the formation of a majority cannot pacify. If the losing minority cannot count on having their fundamental rights respected and in principle being able to form the majority in the next election itself, or even worse, if the opposing side disputes the validity of the election without supporting documents, the basic mechanism of democracy will be lost. Not to mention the restraint of sensitive minds in this elegantly expressed robust form of argument. But it is precisely their balancing and thoughtful opinions that could actually be indispensable.

One effect the targeted advertising business and its superior effectiveness against all other forms of advertising is that it deprives the media, which traditionally rely on advertising sales as a second pillar alongside sales revenues, of their economic basis.

The public is thus destroyed at the same time on several levels, all of which are interconnected: Destruction of informational self-determination through the asymmetry of knowledge between the individual and the platform: the platform knows more about the individual, that he knows about himself. Through the power of personalized search and recommendation algorithms, it determines what information the user receives. It is those that the algorithm considers to be "suitable" for the interests of the user—or is it not rather the interests of the advertisers and the platform itself that are in the foreground here?

On the other hand, by destroying the economic foundations of an independent, privately financed press and the classic model of mass communication, in which the "fourth estate", based on press law and voluntary principles such as diligence, balance and liability for the published content, is remote from the state regulates. In their place comes irresponsible handling of the disseminated content according to the privileges of the so-called platform privilege. And finally, through the destruction of a civilized culture of conversation and debate, in which nothing less than reason itself is at stake. Because reason can only develop where reasonable discourses are permitted and cultivated.

Far-reaching changes are associated with this structural change: Instead of media companies that see themselves as journalistic representatives

of the fourth estate, technology companies that see themselves exclusively in competition for technological innovations through which they strive for market leadership are emerging. Instead of a profit-oriented but socially embedded model of journalism, there is an economic value-added model that is free from all restrictions and is subject to purely technical optimization laws. At the stele of professionally trained opinion leaders, there are automated control mechanisms. The amplification effects of the algorithms used favor emotion-driven arguments and irreconcilable group argumentation instead of reasonable discourse, thus supporting division in society.

While the sender of information and opinions was recognizable in the age of mass media, the technical platforms now see themselves purely as "curators" of content, whose control they leave to automatisms that are programmed solely to excite and captivate. To be more precise: to excite the user in order to be able to captivate his attention. The responsible consumer is no more the target of powerful surveillance capitalism than the responsible citizen. Even in the age of the classical mass media there was the legacy of the public through economic imperatives. After all, advertising revenues are an important economic pillar for publishers. And: the element of opinion-making, i.e. manipulating the audience, was by no means alien to the mass media. But it was known who the sender of information was and there were clear legal regulations for the professional and careful work of journalists as well as for the defense against prevailing power of opinion, which were supposed to ensure the diversity of journalistic voices and thus the prerequisite for free formation of opinion. Above all, in the logic of the tabloid media, the spectacle could not be personalized, at least as far as the addressees were concerned, but was aimed at a shared public, which it could also reflect and cushion. There were also outliers in the published opinion of the analogue media, but these could be caught and corrected by the sounding board of a common public before they could become a contribution to public opinion. This necessary sounding board of shared information and values threatens to get lost in the personalized bubbles of the 2.0 public and to be replaced by a confusing number of sub-publics. This would mean that common convictions would be lost, and with it the basis for organizing together in a democratic community.[14]

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14   Nemitz, Paul; Pfeffer, Matthias: Prinzip Mensch, Macht, Freiheit und Demokratie im Zeitalter der Künstlichen Intelligenz, Bonn, 2020, p. 202 ff. and: Frühbrodt, Lutz; Floren, Annette: Unboxing YouTube, Im Netzwerk der Profis und Profiteure, Frankfurt 2019. In: https://www.otto-brenner-stiftung.de/fileadmin/user_data/stiftung/02_Wissenschaftsportal/03_Publikationen/AH98_YouTube.pdf (September 22, 2021).

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The power of algorithms is based on data; we are interested in personal data that is shaped by advertising-based business models into personal behavioral predictions and thus into advertising products. Because these algorithms process the most important raw material of the digital economy: personal data that is nothing more than the traces of the lives and experiences of millions and millions of people, which are turned into tradable capital goods. Above all, AI-algorithms are needed to analyze this ever-growing flood of data in real time, if possible, and to convert it into behavioral predictions. If you have just bought this, you will surely buy this soon, if you have just thought this, you will surely think this soon, if you have chosen this party, you will surely be happy to support this group...

The mechanism is the same, regardless of whether it is economic manipulation through highly efficient advertising models or political manipulation through equally efficient profile evaluation and pattern recognition.

This model was first introduced by Google and then largely copied by Facebook. Google set out to "organize the world's information and make it universally accessible and useful".[15] Evil should be avoided, as the original Google mission statement expressed: "Don't be evil".[16] But to this day it is controversial whether this original company motto referred to the company's own values, or rather to the users: if you don't do anything bad, you have nothing to fear from our total surveillance. And in fact, arguments like: "I have no problem keeping my data, I have nothing to hide" have been found in the debates of the last two decades when users were asked about Google's business practices.

Google originally planned to use the data that users leave behind with each search only to improve the search function, i.e. to increase the relevance of the displayed results. This model can be described as a "fair search", but it was canceled, by Google itself. Founders Larry Page and Sergey Brin decided not least because investors demanded a clear business model in connection with the company's IPO in 2002 to systematically evaluate the traces of their users, which were previously referred to internally as "data exhausts", in order to be able to offer superior advertising models. After all, he who knows the most about his customers can sell a product best. And Google knows almost everything about almost everyone. And the knowledge grows with ev-

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15   Source: https://about.google/intl/ALL_us/ (September 22, 2021).

16   Source: https://en.wikipedia.org/wiki/Don%27t_be_evil (September 22, 2021).

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ery search query. In addition to Google, which officially committed itself to the mission of imparting knowledge, Facebook wanted to empower people to form communities and bring the world closer together. The company's philosophy is described on its own homepage as follows: Facebook's mission is to "give people the power to build community and bring the world closer together".[17] So Facebook was about communication.

Public communication traditionally takes place even more than the transfer of knowledge in public spaces. At least when it comes to matters that affect the general affairs. From now on, this was structured according to mechanisms that, on the one hand, meant a complete shift in the boundaries between the private and the public: the private was no longer private, but was annexed by corporations for the best possible control of global markets. Public communication, on the other hand, had apparently become private. Driven by "recommendation algorithms", it played itself increasingly in the comfort zone of personal likes and dislikes, which it increasingly contoured and reinforced. Finally, by networking with like-minded people, constant confirmation feedback was generated. The perfidiousness of this mechanism is that the associated personalization is perceived by the users as a gain in freedom. But this is in fact a trap.

The personalization trap destroys the public through social media algorithms. The social media networks make it possible for the first time to operate mass communication as personalized communication. But in the pitfalls of "personalization" there is a risk of dumbing down through commercialization and the rules of the click economy: If the information is individually tailored, the individual cannot rely on it being recorded and controlled by everyone else. But there can be no individual truths, except as the "felt truths" rampant today, which are often not true. Information shared and checked together is a prerequisite for a functioning public in a democracy. Part of the freedom of information is the security that the information that everyone receives is shared by others and that it is not only tailored to the individual but can also be viewed and verified by everyone else.

Only based on countless personal data, often illegally collected, and stored under EU law, can the recommendation algorithms begin their selection process, which is entirely geared towards capturing the user with his personal preferences, feelings, and weaknesses. The user should stay on the

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17   Facebooks mission statement on their investor relations home page: https://investor. fb.com/resources/default.aspx (September 22, 2021).

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pages as long as possible in order to elicit further data from him, which will then be used against him in the next attack on his attention. For this purpose, the selection of messages is tailored precisely to his profile. In this way, the recommendation algorithms destroy the basic function of the public, in which what is relevant for the public can be discussed by all on a common basis. Common sense only arises where the common ground of a shared public sphere is present. Internet personalization is splitting the common ground into countless small parcels. With this consistent individualization of information, the public breaks up, with consequences that go far beyond the obvious isolation of the users: A situation threatens in which everyone ultimately lives in a different world of perception. The basis for joint action is thus destroyed. There is a threat of common ground zero, which is fatal for society and individuals alike.

If the right to informational self-determination is not respected and the citizen must expect that his behavior and the data of his life are constantly recorded and evaluated, his behavior will adapt to this possibility in accordance with the laws of Panoptism.[18] The chilling effect of constant observation leads to conformity and lack of criticism. The manipulation of the information flow based on personal profiles also destroys the autonomy: Instead of making decisions yourself and in free exchange with others, the algorithms' automatic decision-making systems have always decided what everyone should want next. The attack on the formation of the will occurs through the immense knowledge of intimate data, which allow manipulative techniques to be used in the innermost core of people. An accumulation of knowledge about people, whether in the state or in corporations, as it is real today, is simply incompatible with a democratic social order that relies on the free activity and self-determination of its members. And it is also incompatible with the idea of an innovation society. Because conformism is the enemy of creativity.

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18   The philosopher Michel Foucault coined the term panoptism, from the Greek panopt-es, "the all-seeing", to describe the systematic surveillance and disciplining in modern societies. Foucault, Michel, Überwachen und Strafen, Frankfurt 1976; The "panoptic effects" of surveillance, which describe the adaptation and conformism of the individual, are also described as "chilling effects", see on chilling effects in german jurisprudence: Assion, Simon: Was sag das Recht zu Chilling Effects? In: Telemedicus, Recht der Informationsgesellschaft, May 9, 2014, https://www.telemedicus.info/was-sagt-die-rechtsprechung-zu-chilling-effects/ (September 22, 2021).

And these mechanisms are very directly becoming a threat to democracy: Only about one in five Germans feel free to express their opinions in public any more. 35 percent even conclude that free expression of opinion is only possible in private.[19] The reasons given are rude behavior and the fear of "shitstorms". The anarchy in cyberspace thus leads to the censorship that it supposedly wants to avoid through lack of rules and anonymization.

In a representative survey, 50% of mayors in Germany state that they have already experienced hatred and violence in office and that they therefore behave differently.[20] A number of them no longer want to exercise their democratic office in the face of threats in the digital space, a result of the of non-regulated rude internet behavior which more and more shapes the core of democratic society. These are the direct effects of the incremental logic of social media algorithms, which also reward hate and call for violence because their main goal is to mobilize emotions. One can call this circumstance the digital paradox: The same technology that once promised liberation is becoming the greatest censorship machine of modern society through the absence of rules and accountability.

Why is this model nonetheless so successful? We use the digital offers primarily for convenience. Thanks to enormous data profiles, algorithms can suggest more and more suitable products, even seemingly foresee our future behavior, and finally manipulate them through "nudging"[21]. We apparently no longer need to worry about the selection in the product and news jungle of an increasingly complex world. But not worrying is bad for your own intelligence and at the same time strengthens the artificial intelligence because more and more data is flowing to it. The subject is relieved and thereby forgets how to use his own mind. Users are lured into the convenience trap and dependency is created, which in turn means that the servers are entrusted with even more data and the algorithms with even more decisions. A vicious circle.

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19 Source: Laeber, Thomas: Mehrheit der Deutschen äußert sich in der Öffentlichkeit nur vorsichtig. In: WELT, May 25, 2019, https://www.welt.de/politik/article193977845/Deutsche-sehen-Meinungsfreiheit-in-der-Oeffentlichkeit-eingeschraenkt.html (September 22, 2021).

20 Source: Heinsch, Marc-Julien: Wo bedrohte Amtsträger Hilfe finden. In: Süddeutsche Zeitung, April 29, 2021, https://www.sueddeutsche.de/politik/hass-gewalt-buerger-meister-plattform-hilfe-1.5280201 (September 22, 2021).

21 Thaler, Richard; Sunstein, Cass: Nudge, Improving decisions about Health, Wealth and Happiness, London 2009.

The forecasts, based on which the recommendation algorithms filter the information, also create the appearance of coming from the future. But in truth they are based on data from the past. They not only form an informational filter bubble, but also a time capsule, because they reinforce prejudices, exclude surprises from the new and the foreign and thus prevent innovation and future viability. In addition to personalization, there is the main rule of the click economy that addressing emotions and instincts triggers more clicks and retweets and generates more followers than presenting facts and reasonable arguments. But because the money is earned with the number of clicks and retweets, the algorithms of the electronic public prefer emotions to the detriment of common sense. In this way we are moving away from a public in which, for the sake of democratic decision-making, the better argument is reasonably fought for. And we are moving towards a public that is asserted with hatred and emotion, in which it is first about attention, then only about excitement, and the goal of sensible democratic decision-making gets out of sight. The ultimately economically driven pull of the spiral of attention leads to smear campaigns taking the place of debates. However, despite all the "personalization", these mechanisms by no means create "singularities"[22], i.e. unmistakable uniqueness of the individuals. Rather, the so-called personalization of the algorithms inevitably misses the unique individuality of each person. Because the subjects are not targeted by the AI as such, rather only as precise "types". It starts with the sorting of the users into certain groups: Facebook first assigns each user to a type based on a model of personality psychology (also known as the ocean model) to find out how they can best stimulate themselves according to their psychological personality traits let manipulate. Cambridge Analytica used these methods in the 2016 election of Donald Trump and in Brexit. According to its own information, the company had created 220 million psychograms of US citizens.[23]

Artificial intelligence is also used to control social media communication. Which posts and messages attract attention and thus spread is decided by artificial intelligences that have previously been trained to use human weaknesses as consistently as possible in order to increase the length of time spent on certain offers. Personalize, polarize, scandalize, and always think

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22 See: Reckwitz, Andreas: Die Gesellschaft der Singularitäten, Zum Strukturwandel der Moderne, Berlin 2019.

23 Source: Beuth, Patrick: Die Luftpumpen von Cambridge Alaytica. In: DIE ZEIT, March 7, 2017, https://www.zeit.de/digital/internet/2017-03/us-wahl-cambridge-analytica-donald-trump-widerspruch (September 22, 2021).

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about the emotions of the users. According to this logic, artificial intelligence is increasingly organizing public space and thereby destroying the human—and democracy.

Is automated journalism the future model of the digital public? According to the logic of Silicon Valley, problems that have arisen through technology can only be solved through technology. This logic is gaining ground more and more. Media companies, too, believe they have no choice but to join in under the pressure of declining revenues. A trend in journalism is the use of journalistic bots. Associated Press, AP for short, now employs a 'News Automation Editor'. With its help, the editorial team publishes from the start around 4,400 automatically generated financial reports on listed companies every quarter. Human employees previously only had a capacity of around 300 reports.[24]

In Germany, too, investments are being made in this direction, by publishers who are teaming up with Google. However, so far, AI has only been used for niche topics in journalism in Germany. The performance of the AI is also largely viewed critically in the publishing houses—for the time being. In the meantime, cases of false reports by AI are known in the USA, which, in addition to the question of trust, above all raise the question of liability.[25] There are also studies on the use of AI in journalism showing that texts generated by AI score with the audience with better grades in terms of credibility and competence. Is this because of the dwindling quality of real journalists or because they are used to being pre-sorted and presented by machines with what best suits their own profile and thus their own prejudices?

Text programs are getting better and better at generating larger coherent texts that can compete with the quality of human writers. The limits of performance keep shifting. Even if only simple data journalism is currently mostly possible and the research of sources, the critical classification and evaluation is still done by journalists: One must not fail to recognize that the economic pressure on the editorial offices to save costs with such tools, in view of the structural change in the media is enormous. It seems that the automation of the digital public is being driven inexorably.

Especially when using AI in journalism, due to the special role the public plays in democracy, the question of the effects on society must be asked

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24 Source: https://www.ap.org/discover/artificial-intelligence

25 Source: Lobe, Adrian: Zu schnell für die Kontrolle. In: Süddeutsche Zeitung, July 26, 2019, https://www.sueddeutsche.de/medien/ki-journalismus-fehler-1.4539688 (September 22, 2021).

early and consistently. Transparency about the use of AI and clear demarcation between the communication between human and non-human actors is becoming increasingly important in view of the rapid development of these programs.

4. Outlook: The Need for Regulation

Whatever the future of the public will look like: One thing is certain, it will increasingly be determined by technology. Only the question of what logic this technology follows seems to be open. If you want democracy to survive, you have to replace the current logic of social media algorithms with the observance of data protection and a logic of democracy-compatible search and recommendation algorithm. In them, valuable, professionally checked information and opinions that adhere to the rules of law must be given preference. Based on a "fair" search, as it was envisioned by Google in the early years, data can be recorded and evaluated in a way that aims to improve the results, not to gain control over the user. Rather, such algorithms can contribute that users can form a picture of the world despite the growing and seemingly unmanageable complexity and have a part in determining what it looks like.

It will not work without respect for the law and the introduction of the principle of responsibility for those who earn big money by organizing social communication. Specifically, this means, among other things, the end of the platform privilege that enables the big tech corporations not only to fundamentally revolutionize markets, but also to become markets themselves and set their own rules. We must therefore:

- regulate uncontrolled data collection: only certain personal data may be collected, stored for a limited time, and evaluated in the public interest, pseudonymized or anonymized.
- hold on to the concept of informational self-determination because it is the basis for self-determination in general. In the information age, this is truer than ever, even if a redefinition of the boundaries of the private may be indicated.
- regulate the powerful new technologies of artificial intelligence and quantum computers in such a way that they are used in accordance with basic values and that clear liability rules apply.

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- Develop and make mandatory technical platforms for information and exchange with hardware and software components that enable information and communication within the same legal framework that applies to the analog media world. Fair search and recommendation algorithms must enable diversity instead of reinforcing the formation of bubbles, make facts clearly distinguishable from fakes and transfer the basic rules of mutual respect, as laid down by the law for analog public spaces, to the digital public. Basically, everything must be digitally permitted or prohibited that is also permitted or prohibited in analogue.

Even if the line between the private and the public will continue to shift, and this may also be necessary in view of new challenges and new technologies: The distinction itself must never be given up. The question of which personal data is public and which is not, is a deeply political question. And today, more than ever, it is a question of power, because it is about economic and increasingly also about geopolitical power in the use of digital technology. The architecture of the digital public space must reflect these questions of power and answer them in terms of protecting autonomy and the weaker. It must clearly answer the question of responsibility and liability, make impact assessments of the future effects of technical innovation mandatory, establish transparency and control rules that do justice to the dynamics and complexity of technological developments if possible, through an ex-ante regulation.

We need a set of rules for the digital public that is based on democracy, the rule of law and fundamental rights and ensures that these values are not further undermined. On the contrary, an attempt must be made to transfer the principle of the separation of powers, which is one of the key principles for the containment and control of political power, to the economic and technological power of Big Tec. The enormous, concentrated power of Big Tec must be split up in order to remain controllable for democracy. The first approaches to such an appropriate and comprehensive regulation can be found in the new legislative proposals of the European Commission, the Digital Service Act and Digital Market Act. But that can only be the beginning.

One thing is clear: technological disruption must end where the law begins. Might must not take the place of right, because that would mean the end of freedom and democracy.

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