



The Ends of the Humanities

Perspectives from the Humanities and Social Sciences

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Big Data and the Future of the Humanities

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The digital world's emphasis on speed inhibits reflection; its incentive empowers the radical over the thoughtful; its values are shaped by subgroup consensus, not by introspection. For all its achievements, it runs the risk of turning on itself as its impositions overwhelm its conveniences.

Henry A. Kissinger

I

Looking at the historical development, the legitimization crises of the humanities coincide with phases of increased instrumental rationality (*Zweckrationalität*).

Whenever the practical relevance of the humanities is questioned, when their contribution to political, social and economic demands is examined and their applicability is questioned, the humanities feel directly compelled to defend their *raison d'être*. The scenario can be roughly outlined as follows: In today's society which seeks its refuge primarily in technological progress and economic expansion, in which people are defined as human resources and where all this is legitimized by the ostensible constraints of globalization, the humanities already seem to be anachronistic by definition. In short, the importance of the humanities is measured on the basis of a cost-benefit calculation whose validity is generally accepted and therefore completely beyond question. In the meantime, even the most prominent representatives of the humanities have subscribed to this logic and have emerged as apologists for their own imminent demise, such as the literary scholar Hans Ulrich Gumbrecht, who teaches at Stanford. In an article published in October 2019 in the *Neue Zürcher Zeitung*, he not only diagnoses an accelerating decline of the humanities towards their historical end, but also notes, not without irony, "that no one outside the world of the humanities would register (or even regret) if their existence were to cease globally tomorrow." (Author's own translation) Gumbrecht's apologetic gesture is by no means new as it repeats a well-rehearsed description of the humanities; in fact, it has become part of the self-image of the humanities and its individual disciplines, which are always, at least latently, in crisis mode. Even Odo Marquard's famous speech *Über die Unvermeidlichkeit der Geisteswissenschaften* (*On the inevitability of the humanities*), which he delivered at the German Rectors' Conference in Bamberg in 1985 (1986; author's own translation), is marked by a defensive attitude (cf. Alt 2012).

The melancholy lament of the humanities often resonates with references to the well-known Schiller quotation from his Jena inaugural lecture *Was heißt und zu welchem Ende studiert man Universalgeschichte*, in which Schiller sketches the distorted image of the *Brodgelehrte*: "Deplorable man," Schiller writes of him,

who, with the noblest of tools, with science and art, wills and accomplishes nothing higher than the day-labourer with the worst! who, in the realm of the most

perfect freedom, carries about with him a slave soul! (Schiller 1789: 109; author's own translation)

Following Schiller, both human and experimental science can only be truly successful if it is not guided by considerations of utility. From the ostensibly consistent refusal of a utilitarian calculation, the humanities in particular then ascribe to themselves a specific dysfunctionality that guarantees, in the sense of a potential for resistance, that exclusive outsidership that nobilizes the difference from society itself. Ultimately stemming from early Romanticism, this model was able to derive its justification for a long time from the postulate of the autonomy of the aesthetic, which was constantly re-enacted in new figures of thought—most recently by Adorno, Lyotard and Bohrer—and emancipated from any metaphysical overarching structure, thus becoming applicable to current debates. Yet remarkably, with all the aestheticization of reality, the question of the aesthetic itself has been disregarded in recent decades.

The problem with the entire debate about the supposed usefulness or future viability of the humanities lies, among other things, in the way this debate is taken up by the subjects themselves and dramatized in ever new attempts. Gumbrecht speaks of a veritable paranoia that has afflicted the philological and philosophical subjects in particular, and he asks:

Why do we so profusely produce a discourse that clearly gets worse the more its volume increases? The problem may be, at least in part, that there is no real problem. We constantly defend ourselves against state administrations and a public sphere that are not really our enemies, because they have no intention to seriously scale down either our size or our importance. Rather, they are grotesquely eager to agree with whatever arguments we may present in our favor. (2003: 69)

Instead of reacting confidently, one sees oneself in a crisis of legitimacy and existence and puts oneself in a defensive posture. The arguments that are then put forward for the indispensability of the humanities are essentially correct, but they also create new problems. In the following, we would like to briefly discuss the most important lines of argument for legitimizing the humanities (cf. on the following remarks Mein 2013).

In his prominent speech in 1985, the philosopher Odo Marquard followed his teacher Joachim Ritter by formulating the powerful thesis that the humanities would react in a specific way to the natural sciences.

If the human sciences come into existence “after” the experimental sciences, it cannot be correct to say that they are made superfluous “by” the experimental sciences. Instead, since it is natural to interpret the “post” [“after”] as “propter” [“on account of”], the more plausible relationship is that both groups of sciences, together, are necessary and characteristic parts of the modern world, and specifically in such a way (and this explains temporal delay) that the formation and development of the human sciences is an answer to the formation and development of the hard natural sciences. The experimental natural sciences are the “chal-

lenge”; the human sciences are the “response.” In relation to the human sciences, the genesis of the experimental sciences is not the cause of death but the cause of birth; or in other words, the human sciences are not modernization’s sacrificial victim but its result, and are thus, themselves, insurpassably modern. (1991: 93f.)

The humanities, he argues, should fulfill a compensatory function, because they narratively contextualize the specialized knowledge of the natural sciences and thus tie it back to the historically situated individual. “The more modern the modern world becomes, the more unavoidable the humanities become,” (Snow 1987) is his core thesis. However plausible Marquard’s reasoning may be in detail, the implicit message of his argument is problematic. On the one hand, Marquard confirms the schematic dualistic division into natural sciences and humanities with allegedly completely different research paradigms and methods; on the other hand, by means of the compensation thesis, he ascribes a secondary, and therefore merely reactive, role to the humanities. It might sound quite attractive to claim that the humanities do not only uncover but even compensate the collateral damage caused by an unleashed modernity’s high pace of scientific and technical innovations. However, the compensation theory thus confirms the assumed conservatism of the humanities, because this thesis implies that only the natural sciences are innovative. If the humanities were to actually accept the role that Marquard’s compensation theory assigns to them, they would be ill-advised, because they would thus not only emphatically confirm Snow’s two-cultures thesis, “but also renounce any systematic function in the further development of rational cultures.” (Frühwald et al. 1996: 34; author’s own translation) Thinking the compensation thesis through to its conclusion means degrading the humanities to a preserving and conserving function, thus negating them as an element of cultural change. As Jürgen Mittelstrass has lucidly pointed out, this excludes the humanities from the outset from the circle of those sciences that participate in the construction of a forward-looking rationality.

Rather, they should modestly fill the gaps left behind by those rationalities that have the future in their blood and the modern world in their hands, including not only the scientific-technical but also, for example, the economic rationalities, with their powers of preservation and memory. (Mittelstrass 1989: 13; author’s own translation)

Another prominent argument used for justifying the humanities is based on the idea that they do not produce productive knowledge (*Produktionswissen*), but reflective knowledge (*Reflexionswissen*), not instrumental knowledge (*Verfügungswissen*), but orientative knowledge (*Orientierungswissen*). In other words, the humanities handle knowledge stocks that must be constantly refreshed in the course of identity formation, i.e. a culture-specific self- and world orientation that has become historical and is to be applied to the present and the future. In this context, the increasing need for reflective and orientative knowledge results, as Jürgen Habermas emphasizes, from the self-understanding of modern societies: “Modernity can and will no longer borrow the criteria

by which it takes its orientation from the models supplied by another epoch; *it has to create its normativity out of itself.*" (Habermas 1987: 7)

This line of argumentation also has its pitfalls. It is true that the humanities are placed in a relatively comfortable position; however, this position again relies on a problematic schematism that differentiates between instrumental and orientative knowledge. Here, too, it must be said that the sciences as a whole do not follow such a schematism. Why, for example, should biology not also provide orientative knowledge and why, for example, should linguistics not also offer instrumental knowledge? And furthermore: How should we think about the relationship between instrumental and orientative knowledge, and how do these forms of knowledge differ in concrete terms? If we consider the relevant answer, according to which orientative knowledge is to be understood as a regulative knowledge of goals, purposes and maxims, whereas instrumental knowledge represents a positive knowledge of causes, effects and means, it becomes immediately clear that hardly any discipline can limit itself to only one of the aforementioned forms of knowledge. Following Kant's famous dictum, one could say: orientative knowledge without instrumental knowledge is empty—instrumental knowledge without orientative knowledge is blind.

The distinction between instrumental and orientative knowledge also has a methodological component, according to which the humanities are to be understood decidedly as non-empirical sciences. This view ultimately goes back to Wilhelm Dilthey's renowned topos: "we explain nature, we understand the life of the soul" (1957: 144; author's own translation). While relations in the natural sciences are grasped according to a cause-effect scheme and with the help of abstract concepts, relations in the mental world can only be established by existential comprehension (*lebendiger Nachvollzug*). The reconstruction proves to be a form of re-translation or retracing of phenomena of the historical-social human world to their mental origins. This retracing is possible because the cognizant subject is itself part of this world of appearances. Dilthey makes this clear with the example of historical science: "The first condition for the possibility of historical science lies in the fact that I myself am a historical being, that the one who investigates history is the same one who makes history." (1958: 278; author's own translation) More generally speaking, humans can find, at least theoretically, an approach to all forms of life and appearance if they are anthropologically determined. It is only because of this structural identity between the cognizant subject and its object that cognition becomes possible at all: "Only what the mind has created does it understand," (ibid.: 148; author's own translation) Dilthey states apodictically. This powerful theorem has the decisive advantage that it relies on almost anthropological evidence and, therefore, has enormous suggestive potential. Not only does it divorce the humanities from the natural sciences, but it authenticates the true laborers in the Lord's vineyard and in this way auratizes them in a lasting way. According to this renewed position, the humanities today must counter the empirical methods of the natural sciences with a historical-hermeneutical interpretive method, at the center of which is contemplative immersion in the text. Peter-André Alt, for example, sees research in the humanities as being threatened only when it

is robbing itself of its credit through eclecticism, fashionable trends and speculative frenzy. In the core area of the subjects, systematicity and solidity prevail, because this is where work is done on fundamentals: Edition and commentary, formal analyses of texts, investigations into the genesis, age and transmission of historical evidence. The humanistic 'ad fontes' continues to be valid here. (Alt 2012: 1; author's own translation)

From this perspective, the humanities offer first and foremost knowledge of order, which allows them to "offer orientation in the flood of knowledge that has been made digitally accessible worldwide" (ibid.: 4). Alt derives his opposition to empirical research from a Blumenberg quotation from *The Readability of the World*: "It is the basic idea of empiricism that nature would tell history by itself, if one would only let it, would not impose oneself on it, would not hinder it in its self-disclosure by previous knowledge and prejudices." (1986: 86; author's own translation) According to Alt, nothing could illuminate the difference between the humanities and empiricism better than this statement, since it names the implicit reasons why empirical methods cannot have a right of action within the circle of humanities methods: "If knowledge is primarily regulated by the existing knowledge of concepts a priori, it cannot relate to the sphere of pure facts of experience in the sense of peaceful coexistence," says Alt (2012: 2; author's own translation). *But why not?* one might ask. It seems as if the discipline is defined here exclusively by method. Anyone who works empirically cannot, by definition, be a humanities scholar. It is true that empirical data must also be subjected to a hermeneutic paradigm of understanding; we will come back to this. But why can't there be peaceful coexistence or, better, methodological pluralism? It does not make sense, in the wake of Snow's two-cultures thesis, to re-establish a demarcation line between the sciences, when these sciences themselves have long since cast off their methodological shackles and approach their subjects with the tools that best suited for their investigation (cf. Mein 2013; author's own translation).

II

Digital technologies and big data are opening up new possibilities, perspectives and insights not only for the natural sciences but also for the humanities—but they are also constantly challenging them. These technologies and the accompanying transformations show above all that we have long been in a culture of digitality (Stalder 2021), in which digital technologies have already replaced the book as the leading medium. The generation of students currently enrolled at universities are known as the digital natives, i.e. all of them been socialized with the smartphone and in a digitized environment in which almost all of the world's knowledge was available everywhere and at all times. At the same time, the modes and realities of communication have been completely transformed by the various social networks. Without question, we are currently witnessing a comprehensive paradigm shift that is far more than a mere scientific construct proclaimed in the ivory towers of academia, far removed from reality. Paradigm shifts al-

ways also mean a fundamental change in human ways of thinking and behaving, and thus in the socio-cultural patterns of our living environment (cf. Ong 1987: 73ff.). Analogous to the transformation of written culture through Gutenberg's invention of printing with movable type, digitization has also brought down old cultural orders and transformed the socio-political framework of action systems in all areas of life in such a way that a retreat to pre-digital culture or nostalgic heresy is no longer an option. The book-printing society has been transformed into an information society (or network society). As a result, the humanities also face new challenges, because even their established processes and styles of thinking, i.e. the way knowledge is generated and communicated in the humanities, do not remain unaffected by the digital transformation. At the same time, a wealth of new questions arises to which the humanities must respond, without even knowing whether they (yet?) have the right means to do so. In the light of the transformations described above, the *quo- vadis* question of the humanities is thus posed in a new light—and one is reminded of the decisive milestone in intellectual history that Immanuel Kant formulated as follows in his preface to the *Critique of Pure Reason*:

Human reason has the peculiar fate in one species of its cognitions that it is burdened with questions which it cannot dismiss, since they are given to it as problems by the nature of reason itself, but which it also cannot answer, since they transcend every capacity of human reason. (Kant 2009: Preface, A vii)

Even in the pre-digital age, the subjects that form the canon of the humanities often had to put up with the reproach of conducting science in the ivory tower of the elites, although they might not have had any intention of doing so. Time and again, therefore, there were calls for the human sciences to open up and become more in touch with reality. Such demands then regularly led to (mostly inconclusive) discussions within the disciplines as to whether they should bow to the most recent offer of acceptance and adjust their objects, questions and tasks according to the purpose-driven demands for use made from outside. If one disregards the exaggerated concern that a contemporary orientation automatically means sacrificing disciplinary identity (and what exactly would that be?) on the altar of economic expediency, there is basically little to be said against the humanities (more) proactively addressing the current challenges of reality. This seems particularly urgent at present, since the specific constellation in which knowledge in the humanities unfolded from the early modern period into the twentieth century has been completely transformed by the advance of digitization. This primarily concerns the characteristic connection between the public sphere, education, communication and individuality.

In essence, it is a model in which the humanities constantly update the historical knowledge of society in its disciplinary facets and make it available for educational processes in schools and universities, which then produce the educated who, as part of an indigenous public sphere (Habermas), become the bearers of those political decision-making processes that guarantee the continued existence of precisely this model. As the product of a specific historical situation, which can be understood as a happy

amalgam of Christianity, humanism and the nation state, the educational canon produced by the humanities owed its validity to the normative consensus of the elite supporting strata (clerics, humanists, bourgeoisie). Canonical content and reception techniques were handed down in institutions typical of the time, such as grammar schools, universities and monasteries, which at the same time presupposed certain aesthetic value judgements. Those who shared them were integrated into the institutions and supporting strata, had a say in the content and were—rightly—considered educated. The educational canon achieved a particularly high degree of visibility and thus, of course, of distinction through literature. “The educated,” writes Wolfgang Iser, “were the ‘insiders’ whose symbols consisted of that rich treasure trove of quotations from world literature by which they mutually identified themselves ‘in company’.” (1977: 183; author’s own translation) Bourdieu was still able to connect to precisely this model in his 1979 seminal sociological study *La distinction: Critique sociale du jugement*.

As effective and successful as the European program of humanistic education has been in the past, its claim to universality is gone. Christianity, humanism and the nation state have long since lost their cultural monopoly and have to face competition from other powers of meaning. The forces of cultural cohesion that resulted from the cross-class acceptance of hegemonic educational goods have long since been bidden farewell by a pervasive aestheticization of everyday life, and a completely digitally transformed reality dominated by social networks and web-based communication channels has done the rest.

Such a structure, which connects poses to an infinite web of Advent calendars, eventfully stages the story’s stock of images in inescapable presentness. The user can then, in a kind of ironic navigation from event to event, pick up that entertainment value that only comes from rapid change. [...] The division aims at a serial scheme that integrates repetition and deviation into a context of surpassing. The scheme at stake must always be increased in order to capture attention again and again under competitive conditions. (Fohrmann 2002: 208)

III

How, then, can the humanities respond to the challenges and implications of the cybernetic imperative, i.e. the digitization of all areas of life, perception, and communication? Admittedly, much has happened in the field of the Digital Humanities, but the question remains whether the digital humanities have merely acquired a more efficient set of instruments through their alliance with computer science, or whether they have exchanged their epistemic questions and ideals for those of the supposedly more future-oriented disciplines (see <http://digitalitaet-geisteswissenschaften.de/digitalitaet>). Even more critical voices claim that the Digital Humanities, through their uncritical acceptance of new technologies, have aided and abetted a neoliberal takeover of the universities.

Advocates position Digital Humanities as a corrective to the “traditional” and outmoded approaches to literary study that supposedly plague English departments. Like much of the rhetoric surrounding Silicon Valley today, this discourse sees technological innovation as an end in itself and equates the development of disruptive business models with political progress. Yet despite the aggressive promotion of Digital Humanities as a radical insurgency, its institutional success has for the most part involved the displacement of politically progressive humanities scholarship and activism in favor of the manufacture of digital tools and archives. Advocates characterize the development of such tools as revolutionary and claim that other literary scholars fail to see their political import due to fear or ignorance of technology. But the unparalleled level of material support that Digital Humanities has received suggests that its most significant contribution to academic politics may lie in its (perhaps unintentional) facilitation of the neoliberal takeover of the university. (Allington/Brouillette/Columbia 2016)

At this point, we are not only concerned with the methodological transformations in the disciplines of the humanities that have been made possible by the use of Big Data, AI, and Deep Learning technologies, but also with the fundamental questions that the extensive use of these very technologies in all areas of society has brought to the forefront of the humanities. At the same time, it is important to work out the specific added value of reflection in the humanities for precisely these questions. In other words, by addressing the complex implications of progressive digitization with their respective competencies, the humanities also have the opportunity to redefine their own position and their social tasks.

Before we discuss the potential for modernization that could arise for the humanities from advancing digitization, we would first like to revisit the fundamental question of what exactly characterizes the humanities. Of course, this question can hardly be answered adequately in its generality. The disciplines that are traditionally counted as part of the humanities have changed so fundamentally in recent decades in their spectrum of topics, issues and methods that no one can keep track of the entire scope of their subjects. Nevertheless, and despite the disciplinary diversity, one common aspect always pervades all the lines of argument that are put forward in defense or legitimation of the humanities, i.e. the knowledge that the humanities provide, if one understands it now as reflective knowledge, orientative knowledge, knowledge of order, or simply as that Diltheyian understanding, has a specific dimension of time. Knowledge cannot be obtained quickly, even if it can be intuitively grasped; it is always the result of a hermeneutic process that must turn to its object not just once, but repeatedly. It is a matter of a *repeated* confrontation with the archive of tradition, which is the only means of creating a contingent present and opening up alternative options for action.¹

1 We should mention here by the way that this discussion was already conducted in a similar way in the 1960s and 1970s—at that time under the insignia of neopositivism *versus* hermeneutics; see for instance Habermas 1971.

. The gesture of slow reading, the work of the eyes bound to the linearity of the line and the rhythm of the book, to which the hectic consumption of image-dominated Internet content is apparently so diametrically opposed, is repeatedly cited as an example of the characteristic slowness of understanding which characterizes not only the humanities but probably every process of cognition²

Most of the proprietors of the commercial Internet have a financial stake in collecting the crumbs of data we leave behind as we flit from link to link—the more crumbs, the better. The last thing these companies want is to encourage leisurely reading or slow, concentrated thought. It's in their economic interest to drive us to distraction. (Carr 2008)

Heiko Christians, for example, notes in his book *Wilhelm Meisters Erbe: Deutsche Bildungsidee und globale Digitalisierung*:

The condition of the possibility of education thus formally arises only by the formation of a slower medial setting in a faster medial environment, which we normally call trash, consumption, entertainment, stuff, trash or lowbrow. [...] If we associate with the one, faster, industrial environment only consumption, entertainment, production, replenishment, we associate with the other—slower—above all contemplation, self-reflection, sustainability or distance. (Christians 2020: 134f.)

The characteristic slowness of the reading process seems to be anachronistic, especially in view of the insane speed of computer processor-based data processing: Silicon Valley *versus* the reading monastic... And yet there is no doubt that all this data only acquires meaning when it is linguistically actualized, contextualized, compared, and interpreted—in short, integrated into a *hermeneutic* process of understanding. Hans-Georg Gadamer put this insight into a catchy formula in his epoch-making work *Truth and Method*, which has lost none of its topicality, especially in view of digitally generated data oceans and algorithmic logic: “Being that can be understood is language.” (Gadamer 2004: 470) This is especially true when data is selected and processed by algorithms, for example, in order to draw conclusions from past consumer behavior about potential buyer interest in certain products. That such things actually work seems to be out of the question; but it is much more interesting to look into the criteria according to which such algorithms work. In other words, what image of man does an economy create which is programmed for increase, and in what way is this image transformed into a cybernetic logic? What data is used to feed this logic and is there any way to escape it? It is these questions that the humanities must answer in the digital age.

2 As early as 1881, Friedrich Nietzsche (1988: III/XV, 17) contrasted the “sweating alacrity” (“*schwitzende Eilfertigkeit*”) of his time with the “goldsmith's art and connoisseurship of the word”, “which demands one thing above all from its admirer, to stand aside, to take one's time, to become still, to become slow [...] to read with tender fingers and eyes.”

In the meantime, AI applications have reached such a level of complexity that they can successfully imitate a variety of human activities. These include, for example, the analysis of large data sets and images, including techniques for automated facial recognition, the translation of texts into other languages, whereby AIs are now largely able to independently grasp the grammatical structure of foreign languages (natural language processing), the production of journalistic texts, the composition of music pieces and the production of works of art, the independent navigation of vehicles in road traffic and much more. Certainly, no AI has yet passed the famous Turing test, but at least Google's latest AI *Duplex* was already able to make phone reservations on its own without the person on the other end noticing that they were talking to a neural network and not a human (Oppermann 2018). It stands to reason that this development will have a significant impact on social interactions and also permanently change our understanding of culture. In this context, digital culture certainly means far more than the fact that archives have been digitized, music is now no longer bought on CDs but streamed, or that many museums have made their collections accessible in virtual spaces. In no previous epoch such a flood of texts, images and videos was produced and published as it is currently the case. In this universe of productivity, everything is available: from spontaneous selfies to elaborate art photographs, from Twitter comments to epic blog entries. What criteria can be used here to define something like an aesthetic of the digital? Is there a canon in this flood of data that distinguishes the higher and valuable from the lower and trash? And if so, what categories does it operate with? And how can the images, texts and videos created by humans be distinguished from those created by algorithms? And is this even a relevant question? In view of the fact that automation, algorithms and statistical processes are actively involved in the production of meaning in society, the sociologist Dirk Baecker sees a fourth media epoch already dawning, whose revolutionary potential lies in the unlimited recombining of data (cf. Baecker 2018).

As one can easily see, this is a debate about questions of interpretation, about questions of the meaning of linguistic, written, musical, iconographic, cinematic, and however formed aesthetic *signs* (still current Simon 1989). The fact that these signs have now become detached from their former carrier media through their binary coding and thus emerge particularly clearly *as signs* in their virtuality makes it above all clear that the business of interpretation, which the humanities in particular have traditionally seen as their specific territory, is more important than ever before. This is all the more the case because what is actually troubling about digitization is perhaps not so much its tendency to disrupt, as Armin Nassehi notes:

What is disruptive is possibly not only the newness of the technical and socio-technical solutions and possibilities. The new thing is possibly that modernity is now actually disfiguring itself beyond recognition: *It can no longer make all that it is as a functionally differentiated society invisible behind an institutional arrangement that Western public discourses and also the majority of the social sciences have taken for the basic structure of society.* (Nassehi 2019: 200f.; italics in the original; author's own translation)

What he wants to express with this is the concern that a society characterized by digitalization reveals that it is organized, at its core, in a decentralized, namely functionally differentiated way. If one follows Niklas Luhmann's system-theoretical considerations, modern societies always are organized in this way, because they can only solve the problem of increasing complexity through functional differentiation. However, this fact is obscured by a specific discourse order that allows citizens to still address "the state", "the administration", "politics", etc. as if they were single entities. Nassehi posits that digitalization basically applies the same binary logic (1 or 0) according to which the respective guiding distinctions, the code of functionally differentiated subsystems is organized. This digital simplicity of the code then leads, according to Nassehi, "to the fact that modern functional systems know virtually no stopping rules within themselves, for the only limiting factor is, after all, the application of the code." (Ibid.: 187; author's own translation) The same applies, of course, to binary coding, on which all processes of digitalization are based. Nassehi therefore concludes:

Powerful digital technology follows the same pattern as the social functional systems: it can only achieve its richness of form and thus its triumphant march into almost all practices of modern society because it is also structurally built around the relationship of simplicity and diversity. Its brutally simple coding and mediality in binary patterns is the ground for its diverse, hardly limitable use in all areas of society. (Ibid.: 191; italics in original; author's own translation).

Through this astonishing structural analogy and connectivity, however, digitalization at the same time reveals the blueprint of modern societies, namely the fact that they break down into subsystems which are operationally closed and which process autopoietically. In view of such a form of organization, the idea of still wanting to control the social system centrally or collectively necessarily becomes an illusion. The question would then be how a society without this illusion of a reference should be organized and what this means—in psychoanalytical terms—for the processes of identity formation.

The humanities are therefore faced with the task of gaining a deeper understanding of how exactly the new technologies intervene in and transform social and cultural practices. In this context, the profound transformations in education are of particular importance.

IV

Education—in the sense of education for maturity—now includes more far-reaching horizons of orientation than Adorno described in 1969 (cf. Adorno 2003). Digitization confronts educational science with fundamentally new conceptual and methodological challenges. On the one hand, new demands are placed on educational institutions, their methods, their didactic concepts and their objects. On the other hand, digitalization also demands skills from learners in completely new areas of competence than were required in the book-printing culture. The competent and reflective use of digital tech-

nologies and media is the *conditio sine qua non* for all mature members of any democratic society. In addition to the classical cultural techniques of reading and writing, new ones are therefore needed, namely those that enable us to form sociological, political and ethical perspectives on technology. Demands that pupils and students must also learn code literacy, irrespective of their subject focus, are perhaps entirely justified in view of the requirements of a digitalized labour market. However, such knowledge should not only be taught in computer science classes as it also needs to be systematically embedded in the humanities' canon of subjects in the sense of *digital hermeneutics*. This is the only way to disseminate a form of reflexive knowledge that enables a critical attitude and a mature approach to the manifold aspects of digitalization in all areas of life.

It is characteristic of the information society that lexical and encyclopedic knowledge is constantly available to learners everywhere (cf. Baumann/Milmeister 2021). Educational institutions can therefore no longer be exclusively concerned with imparting knowledge. Teaching that wants to consider the fully digitized reality of life should therefore be structured in a way that enables learners to find and filter information independently and to solve problems on their own. To do this, students must first get an idea of the dimension of the knowledge they can access on the Internet. And they must learn to understand that encyclopedic order, truthfulness, and objectivity are not necessary categories with which this medium operates. It seems crucial to us, first of all, that the humanities and their individual disciplines open up other dimensions of thinking by promoting the cultural technique of digital literacy. The numerous definitions that are available for digital literacy all conceptualize digital literacy as a key competence of the twenty-first century and they equate it with digital skills. Ferrari, for example, defines it as

the set of knowledge, skills, attitudes [...] that are required when using ICT [information and communications technology] and digital media to perform tasks, solve problems, communicate, manage information, collaborate, create and share content, and build knowledge effectively, efficiently, appropriately, critically, creatively, autonomously, flexibly, ethically, reflectively for work, leisure, participation, learning, socialising, consuming and empowerment. (Ferrari 2012: 3ff.)

Understanding the working principles of algorithms and their effects is a basic prerequisite for participating in social discourse and processes. Why, for example, do *Instagram* or *Twitter* display some posts while excluding others, so that only a small section of the abundance of all posts can be seen? Social media function according to an algorithm that acts like an echo chamber of the user. Based on previous usage behavior, it decides automatically—but completely non-transparently—what is displayed in the personal timeline and what is not. The majority of posts that are displayed reflect the user's own interest or opinion, whereas other views are often systematically discriminated against. In this way, humankind is successively maneuvering itself into a new immaturity, whereby the motivation is exactly the same as that which Immanuel Kant clearly outlined more than 200 years ago in his influential essay *What is Enlightenment?*

Laziness and cowardice are the reasons why such a large proportion of men, even when nature has long emancipated them from alien guidance (naturaliter maiorennes [those who have come of age by virtue of nature]), nevertheless gladly remain immature for life. For the same reasons, it is all too easy for others to set themselves up as their guardians. It is so convenient to be immature! If I have a book to have understanding in place of me, a spiritual adviser to have a conscience for me, a doctor to judge my diet for me, and so on, I need not make any efforts at all. I need not think, so long as I can pay; others will soon enough take the tiresome job over for me. (Kant 2003: 153f.)

The others, who are now taking over the vexed business of thinking, are the algorithms, which—almost 240 years after Kant’s remarks—measure and present reality in such a way that it perfectly corresponds to each user’s individual preferences. In their virtual strolls through the digital world of opinions and goods, users will from now on only be presented with what confirms and interests them. That’s great, but anyone who is immune to any surprises—even unpleasant ones—excludes precisely that degree of contingency from their life that sometimes leads to completely new (because precisely: surprising) insights. In other words, the algorithms trained by our consumer behavior keep the other, the unknown, the strange at a distance and thus prevent precisely that confrontation through which the subject is thrown back onto itself in irritation. As a result, the unknown and the surprising are taken note of with even greater irritation and rejection. The rise of populism can certainly also be understood as a consequence of this new inability to react to alternative thought patterns with a gesture of wanting to understand. The idea that it can be constructive to question one’s own position is no longer part of the dispositional possibilities of the digitally socialized self. Reflecting on these social implications together with learners, revealing that algorithms construct reality performatively, that through them perception and opinion are formed in a completely new way -- these are the tasks that the humanities across all their disciplines have within the digitalized information society. Furthermore, they also have to design alternatives to these processes. Digital literacy, in our view, must encompass more than a knowledge of the mechanisms and pitfalls of the cybernetic imperative; digital literacy must also include the ability to imagine a different digitization—perhaps one that not only enables but actively advances a new public sphere, democracy, education, and equality.

V

But we must go one step further, because the operating principles with which the algorithms of the big tech corporations evaluate and market our data call into question the basic principle of deliberative democracy itself, which is based on the idea of consensus-oriented dialogue. Insisting on consensus in this context,³ we focus on the idea that as soon as one enters into a dialogue situation (by the very fact of engaging in it) one principally concedes the possibility of being persuaded by arguments. Karl-Otto Apel has

described this very fact as the “apriori of the communication community” (1993: esp. 378ff.), Habermas speaks of the “unforced force of the better argument” (2001: 95), and Hans-Georg Gadamer puts it succinctly in his discussion with Jacques Derrida when he insists: “Whoever opens his mouth wants to be understood” (1989: 55), and it is precisely this that implicitly presupposes the recognition of arguments. It is therefore a matter of the *process* of will formation and not of its result. Those who argue disagree in the hope that they can learn from each other’s conflicting opinions. This is the basic idea on which deliberative democracy is based—once again in Habermas’ words:

For the more heterogeneous the social situations, the cultural forms of life and the individual lifestyles of a society are, the more the lack of a background consensus *existing a fortiori* must be compensated for by the commonality of public opinion and will formation. (Habermas 2021: 475; autor’s own translation).

Since the 2000s, global society has been experiencing an increasingly rapid process of web-based networking and communication, which can be understood as a digital structural transformation of the public sphere. For all the appreciation of the possibilities opened up by the egalitarian participation in network communication (keyword “Arab Spring”), the question nevertheless arises as to whether this form of Internet-based public sphere is capable of sustaining the process of deliberation that is so indispensable for democratic decision-making. In other words, does the web-based public sphere of social networks and forums have the potential to substitute the classical notion of the public sphere on which the idea of democracy is based? Habermas himself raises doubts in his recent statement when he notes:

Besides its evident advantages, the new technology, on the other hand, also has highly ambivalent and possibly disruptive effects on the political public sphere in the national framework. This is due to the way in which the users of the new media make use of the provision of limitless linking possibilities, i.e. of “platforms” for possible communications with any addressees. (Ibid.: 486; autor’s own translation).

Precisely because social networks, as platforms of a digital public sphere, are not tainted by any standards of classical media journalism (i.e. they do not edit or segregate, but merely create new connections in the global network and in this way initiate and intensify discourses that are unpredictable in terms of content), they change the character of public communication in a profound way (cf. *ibid.*: 488). The quality-assuring gatekeeper function of public communication is undermined by digital media and networks in that the verification of journalistic quality and truth now only takes place privately. But where “private opinions with their contradictory everyday minds are net-

3 Habermas 2021: 478. He also acknowledged this when he wrote: “The deliberative character of the formation of opinion and will of the electorate is measured in the political public sphere by the outcome of the discursive quality of the contributions, not by the goal of a consensus that cannot be achieved anyway.” (Author’s own translation).

worked through platforms for economic reasons, subject-transformative learning processes are unlikely” (Sevignani 2021: 63).

If at the beginning the question was raised as to what role the humanities have in modern society, the problematic situations we have outlined above impressively show that their “classical” fields of activity and reflection such as education, enlightenment, interpretation, public sphere and democratic capacity have by no means disappeared as a result of digitalization. On the contrary, they are more pressing than ever before and require the entire potential of the humanities in all their disciplines. As shown above, descriptions of society that argue both in terms of systems theory and discourse theory arrive at similarly pessimistic diagnoses, particularly with regard to the digital structural change of the public sphere. Some argue that the institutional arrangement which is necessary for the idea of collective control is unmasked by digitalization, while others think that the foundations of a deliberative public sphere are threatened. But what conclusions can we draw from this for the future of the humanities? Certainly, it does not do to criticize digitization *per se*. It cannot be stopped, just as the spread of writing and the increase in literacy could not be stopped. Nevertheless, the humanities must critically and reflexively accompany the advancing digitization of all areas of life and provide orientative knowledge, which is already happening. However, such knowledge, which is enlightening in the best sense of the word, only has meaning if it can be communicated. This means not only the vulgarization of corresponding specialist knowledge, but also the use of adequate formats for its dissemination. In other words, the humanities themselves must be perceived as an active agent in the digitized reality, they must actively help shape what digitization should be, they must bring to the fore the as yet undiscovered potentials of digitization for education, the public sphere, democracy and human dignity. Just because social networks have currently fallen prey to platform capitalism, it is not impossible to imagine alternatives to it. The negative aspects of digitalization described above do not result from the nature of digitalization itself, because it has no nature at all. They result from the ways in which digitization has been implemented over the last twenty years. And precisely because it is one of the humanities’ strengths to address reality’s contingency and to design alternatives to its existing form, our disciplines are currently under more obligation than ever before. It is only in this way that we can perpetuate the cultural and—yes!—political significance of the humanities in the 21st century.

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