

Artificial Intelligence in the Anthropocene? Yes, Naturally!

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Abstract

This paper tries to clarify the concepts of intelligence, technology, Artificial Intelligence, Anthropocene and nature so that this throws some light on their mutual connection. In this analysis, intelligence is seen as the ability to recognize the borders of one's own thinking as problems, which includes a qualitative and reflexive consciousness of problems. Technology originates from this consciousness of problems and consists in the attempt to solve problems in order to reach certain given goals. Hence, Artificial Intelligence is already inherent in technology, but starts only recently to be discussed as such. This belongs already to the problem-complex of the Anthropocene as a technological transformation of the environment on this planet, which in turn raises the question of nature, which is understood here in a relational way, as the mutual relation between possible subjective points of view. That leads to the following result: Artificial Intelligence can be "natural" insofar it is able to blend into such a mutual relation, what seems also to be advisable in the Anthropocene.

Keywords: artificial intelligence (AI), technology, Anthropocene, nature, problems of consciousness

Introduction

The title of this paper is intended to provoke, because it brings together what at first glance does not seem to belong together: How can Artificial Intelligence be natural? Can it be natural after all? Is it not an artificial product and as such unable to be natural? And isn't, for this very reason, the talk about the natural in the Anthropocene obsolete, as we are facing in this era an environment which is thoroughly shaped by technological influences? The title, however, raises the claim that all this can be put together, even thought together. Is this claim justified, and if so, how can that be?

That question now is to be clarified by looking at the pertinent concepts and their mutual connection and thus structuring what follows and what also for brevity's sake cannot be but a sketch. We start with a concept of intelligence, as this is important for the understanding of some other concepts: for a concept of technology, which will turn out to be a certain application of intelligence; and hereby for a concept of Artificial Intelligence, which belongs to this application; and also for a concept of the Anthropocene as the technological transformation of the environment on this planet. The further question, if and how a technologically transformed environment in general, and especially the Artificial Intelligence belonging to it, can be natural, then leads to an inquiry into the concept of the natural. This inquiry is challenged by the notorious problems of the concept of the natural and also on its background, the concept of nature; and it meets this challenge by the attempt to discover within these problematic concepts, by the means of reflexive logic, a core according to which the natural is what we can name without having to be able to properly describe it. This will finally lead to a plea for conceiving of Artificial Intelligence in the Anthropocene as something natural and, for reasons still to be elucidated, also to aim for it as something natural.

A Concept of Intelligence

The word "intelligence" is often used in an inflated way and without clearly graspable content. Nevertheless, it seems to be astonishingly easy to say in which such a content consists, if that word (or one of its synonyms) is used in a terminological manner. In this case, intelligence is understood as the ability to adapt to environmental opportunities in the best way possible.¹ But precisely this seemingly simple access shows why talking about intelligence can lead to conceptual confusion so easily: Whose ability and, accordingly, whose environment are at stake here? Is even water intelligent, when it makes way through the landscape and adapts to the opportunities given for

¹ See, Marion Friedrich, "Intelligenz aus philosophisch-psychologischer Sicht," in *Natürliche und Künstliche Intelligenz im Anthropozän*, ed. Joachim Rathmann, Uwe Voigt (Darmstadt: Wissenschaftliche Buchgesellschaft, 2021), 135-162, 146.

that in order to leave the landscape as fast as possible? Is there an emotional intelligence which differs essentially from its cognitive counterpart? And which are, in each single case and moreover generally, the criteria of evaluation which are to be applied to the way of adaptation? Would it not be too cynical to claim that going extinct is the best way of adaptation for a species whose members could not but lead a life of suffering in their given environment? The concept of intelligence, as it seems, needs to be elucidated.

Such an elucidation can be found in Johann Gottlieb Fichte's Science of Knowledge (*Wissenschaftslehre*).² Under the title of the ego, Fichte refers here to a finite instance which produces ideas and at the same time is their carrier. In the absence of self-reflection, the ego would just proceed with producing ideas and being conscious of them, thus going the way of pre-reflexive thinking.³ This way comes to an end, however, when it meets a resistance, an obstacle (in transcribed Greek: a *pro-blēma*). This obstacle consists of the ego encountering an idea which has not been produced by it. Thus, thinking hits its limitation—it is thinking its own limitation—and hereby is thrown back upon itself; it becomes reflexive. So, consciousness becomes self-consciousness and problem-consciousness at the same time: I have encountered a *problem*; I have encountered a problem. Here, a problem is something to which the ego can refer, and which raises the question how the ego can refer to it after all and how the ego should refer to it. Such an ego, having become reflexive and self-reflexive, and at the same time intentional, Fichte calls “intelligence.” He uses this concept to signify the carrier of an according property, as we still do today when speaking of Artificial Intelligences. The less this semantic nuance hinders us to see here also an elaboration of our usual understanding of intelligence as a property: Intelligence is the successful handling of a problem in the mentioned sense by an ego or, according to the recent discourse, of a subject, with the standards for evaluation of the success stemming from the very thinking of that subject. As Uwe Meixner argues,⁴ such intelligence can be there only in a and for a subject, only as intelligence of consciousness; “consciousness” means here in turn the fact that there is something which is given to that subject as such; that, in a current diction, it is like something just to be that subject. Accordingly, Fichte conceives of elementary problems as simple qualities of experience (what we now would call qualia), on which thinking is refracted, because it can think them as not having been produced by it, and it can think itself as being unable to analyze them further.⁵ This conception of intelligence is linked to the ability of qualitative, aesthetic

² On the following, see, Johann Gottlieb Fichte, *Grundlage der gesamten Wissenschaftslehre* (1794, 1802), in *Fichtes Werke*, Vol. 1, ed. Immanuel Hermann Fichte (Berlin: Veit & Co., 1845-1846; reprint, Walter de Gruyter & Co., 1971), 85-328.

³ See, Marc Borner, *Über präreflexives Selbstbewusstsein: Subpersonale Bedingungen—empirische Gründe* (Münster: Mentis, 2016).

⁴ See, Uwe Meixner, “Bewusstseinsintelligenz und Künstliche Intelligenz,” in *Natürliche und Künstliche Intelligenz*, ed. Joachim Rathmann, Uwe Voigt (Germany: wbg, 2021), 13-31.

⁵ On these considerations and their relevance to modern debates, see, Dieter Henrich, *Dies Ich, das viel besagt: Fichtes Einsicht nachdenken* (Frankfurt am Main: Klostermann, 2019), 156.

experience.⁶ To think qualia as no more analyzable means at the same time to think of them as simple, which Fichte illustrates with the notion of the geometrical point. With the help of this notion, the problems caused by qualia can even be quantified, turning out to be problems among other problems. Peirce comes to our aid in this step: Precisely because of their simplicity and hence because of their quantifiability, points serve as limitations and so also as connections between complex geometrical structures.⁷ Accordingly, also complex problems respectively complexes of problems can be understood as consisting of connections and transitions which have a qualitative character, so that intelligence in dealing with them and between them, so to speak “between the lines,”⁸ always also means to become aware of that qualitative character. Even as problem-related thinking, intelligence therefore is connected to aesthetic experience. This experience gives the problems an importance that lifts them above the background noise, and it gives the subject facing these problems the motivation to deal with them.

The concept of intelligence which is offered here can be summarized in the following way: Intelligence is the ability to recognize the limitations of one’s own thinking as problems, which includes a qualitative consciousness of these problems, and, based on this, to refer to these problems as well as to oneself as a thinking instance.

A Concept of Technology

Here, technology is understood in line with Thomas Heichele, who in turn refers to Ernst Cassirer und Hans Sachsse.⁹ For Heichele’s concept of technology is not only presented very clearly but also fits very well to the notion of intelligence provided above. According to that concept, intelligence is primarily a certain way of intelligent action, more precisely: a certain way of intelligent action dealing with itself and its problems. As we have seen, intelligent action is directed towards itself and its problems, being reflected upon itself by its problems and thus being reflexive and intentional at the same time. The technological way of this action consists in dealing with oneself and one’s problems in the framework of a means-ends-relation. The ends here are not the action or the problems, but something which is beyond these problems. From the perspective of technology, the problems appear as obstacles on the way to a goal towards which the action is directed. If we represent, with Fichte, a

⁶ On this kind of experience See, the contribution of Stefanie Voigt to this issue.

⁷ See, Helmut Pape, *Die Unsichtbarkeit der Welt* (Frankfurt am Main: Suhrkamp, 1997), 378-445; Helmut Pape, “Kontrollierte Abstraktion und Selbstkritik,” in *Künstliche Intelligenz und menschliche Person* (Marburg: Elwert, 2006), 107-121.

⁸ See, Dietrich Dörner, “Mülltonne, Speerschleuder und Fahrradschlauch—Über künstliche und natürliche Intelligenz,” in *Natürliche und Künstliche Intelligenz*, 217-233, 218.

⁹ See, Thomas Heichele, “Künstliche Intelligenz im Licht der Technikphilosophie,” in *Natürliche und Künstliche Intelligenz*, 79-108, section 2.

problem as a point which refracts the continuous line of pre-reflexive action, then the goal (the ends) is another point lying beyond that first point, beyond the problem. The intelligent subject has chosen that second point as goal of its action, which cannot be reached because of the problem, and therefore searches a way to solve the problem. As Heidegger argues, this way is a de-tour and at the same time a tour-towards. The first means which the action gets a hold of is itself, respectively it understands itself as a means to find further means which might lead to the goal. The goal, however, can only be reached if the problem is solved; so such action is problem-solving thinking par excellence.¹⁰ For the given reasons, what it intends immediately is not its goal but the problem to be solved. The means which it uses to solve the problem and so reach its goal are used to be called “technology” as well. Intelligent action as problem-solving thinking therefore is done through the according means. Hereby intelligent action uses itself as such means, it is also adopting a technological character. In this sense, technology always implies an artificial intelligence: an intelligence which gives itself a technological character and thus serves a certain *techné*, some artisanship. This becomes evident in the so-called technology of the intellect, in which problem-solving thinking tries to solve problems of its own procedures in a technological way (e.g., by controlled application of formalized logic).

Here technology enters into an ambivalent relation to the finite intelligent subjects which are using it: As finite subjects, they cannot but approach at least some problems in a technological way. This, however, threatens to undermine their very subjectivity: The more technology succeeds, the more it masks the problem it is meant to solve, thus bereaving its subject of the occasion, offered by that problem, to become conscious of itself in a reflexive way. If the subject remains pre-reflexive as long as is not challenged by problems, it can also enter, so to speak, a post-reflexive state if it solves problems through technology without still becoming aware of them. Fictive scenarios of doom which can be found in literature and popular culture on this background can be seen as a medial reflection of the threatening extinction or at least subjugation of finite subjectivity by its own technology.¹¹

This threat becomes even more acute by a certain form of technology.¹² Classic technology adapts to the problem for whose solution it is applied, and thus it takes a form which is in accordance with the goal and the problem; in the sense of this adaption and the correspondence at least aimed at with it, such technology is analog. So classic technology splits up into a manifold of different technologies, according to

¹⁰ On technological action as problem-solving, see, Heinrich Popitz, *Wege der Kreativität* (Tübingen: Mohr Siebeck, 1997), 106. On the history of technology as a history of subsequent problem-solutions giving rise to new problems, see, *Der Aufbruch zur Artifizialen Gesellschaft: Zur Anthropologie der Technik* (Tübingen: Mohr Siebeck, 1995).

¹¹ See, Bernhard Irrgang, *Roboterbewusstsein, automatisiertes Entscheiden und Transhumanismus: Anthropomorphisierungen von KI im Licht evolutionär-phänomenologischer Leib-Anthropologie* (Würzburg: Königshausen & Neumann, 2020), 9-34.

¹² See, Martin Heidegger, “The Question Concerning Technology,” in *The Question Concerning Technology and Other Essays*, trans. William Lovitt (New York: Harper & Row, 1977), 1-35.

the different goals and problems. Now, the very plethora of technologies can turn into a problem, for which there seems to be another technological solution: the development of a unique, homogenous technology. That technology does not adapt to the given goal and the encountering problems; it rather adapts them to itself and turns them, as independent from the pertinent realm of objects as possible, into something it can process. That such a technology is possible is grounded already in the quantification done by the problem-consciousness: Notwithstanding their different qualitative characters, that consciousness conceives of its problems as different unities. Thus, the foundation of the unique, homogenous technology can be laid by processing these problems as mere quantities which can be counted with the help of one's fingers (*digiti*). In this broad sense, that kind of technology can be called digital. At the turn of the 20th century, it started to boom also due to progress in the technology of the intellect thanks to innovations on the field of logic, which succeeded then to present quantity in a strictly formal way.¹³

By becoming a problem, however, technology can also contribute to self-reflection. This self-reflection can proceed from the pole of the subject and from the pole of the problem to be solved by technology—from the subject which becomes aware of its ambivalent relation to technology, and from the problem, if the following connection comes to mind: Technology is not immediately directed to the given ends, but to a problem which prevents that ends from being reached. Thus, for technology the very acting upon the problem becomes an end. Any way the problem is acted upon, technology is always also directed to whatever the problem is connected to, and changes also these connections in acting upon the problem.¹⁴ Therefore, technology is always accompanied by side-effects, which have not been intended in the pursuit of the given purpose and the acting upon the according problem.¹⁵ The more powerful the technology used, the graver these side-effects can become. Even the threatening autonomy of technology as against the subject which used it can be understood as such a side-effect, in which the connection between problem and technology turns out to be stronger than the connection between subject and technology. In any case, the side-effects of technology we encounter in environmental questions contribute to critical reflection on technology in our time.

¹³ See, Klaus Mainzer, *Computer—neue Flügel des Geistes?* 2nd ed. (Berlin: De Gruyter, 1995); Martin Davis, *The Universal Computer: The Road from Leibniz to Turing* (London, New York: A K Peters, 2011).

¹⁴ See, Peter Sloterdijk, *Eurotaoismus. Zur Kritik der politischen Kinetik* (Suhrkamp: Frankfurt am Main, 1989), 23, 29.

¹⁵ On the concept of the side-effect See, Jens Soentgen, *Konfliktstoffe: Über Kohlendioxid, Heroin und andere strittige Substanzen* (München: oekom, 2019), 45-49.

A Concept of Artificial Intelligence

We have already seen that technology in a certain way always implies Artificial Intelligence. From the mid-20th century onwards, this connection unfolded, and at first in a casual manner, as the catchphrase “Artificial Intelligence” was coined to acquire third-party funding for a pertinent conference.¹⁶ This phrase is meant to signify a technological product whose activities are in accordance with intelligent action. This accordance can be interpreted in two ways: Either the Artificial Intelligence is an intelligent agent, too, i.e., a problem-conscious subject; then we would talk of Strong Artificial Intelligence. Or these actions do correspond to intelligent action, but are not activities of such a subject; the product in question just acts as if it was intelligent without being so. This is typical of a Weak Artificial Intelligence. Moreover it might be that Artificial Intelligence can solve problems of any kind, thus becoming the completion of digital technology in the sense mentioned above. In such a case, we would be confronted with a General Artificial Intelligence.¹⁷ Alternatively, Artificial Intelligence might just be able to solve problems of a certain kind. This would be a Narrow Artificial Intelligence, so to speak in the tradition of analog technology, even if based on digital means. This kind of Artificial Intelligence is applied in many ways today. The questions, if and how Strong Artificial Intelligence and General Artificial Intelligence are possible (and if they would be one and the same or still different), remain notoriously open. The connection between Strong Artificial Intelligence is argued for by Dietrich Dörner.¹⁸ It can also be corroborated by Sean McGrath’s contribution to this issue.¹⁹ Uwe Meixner has championed this view, too.²⁰ According to it, firstly, Strong Artificial Intelligence seems to presuppose a consciousness which can experience qualia and therefore turn itself into a problem-consciousness. Secondly, a General Artificial Intelligence would have to be also a Strong Artificial Intelligence, because the general recognition and processing of problems of any kind obviously has to be based on a consciousness aware of problems of any kind and the complexes they can form. A Strong Artificial Intelligence centered around a phenomenal consciousness might also evade the metaphysical problems duly raised by Sebastian Rosengrün, which strike an abstract conception of Artificial Intelligence remote from consciousness.²¹

¹⁶ See, Sebastian Rosengrün, *Künstliche Intelligenz zur Einführung* (Hamburg: Junius, 2021), 13-17.

¹⁷ See, Sean McGrath’s contribution to this issue.

¹⁸ See, Dietrich Dörner, “Mülltonne, Speerschleuder und Fahrradschlauch—Über künstliche und natürliche Intelligenz,” in *Natürliche und Künstliche Intelligenz im Anthropozän*, ed. Joachim Rathmann, Uwe Voigt (Germany: wbg, 2021), 217-234.

¹⁹ See, McGrath’s contribution in this volume.

²⁰ See, Uwe Meixner, “Bewusstseinsintelligenz und Künstliche Intelligenz,” in *Natürliche und Künstliche Intelligenz im Anthropozän*, edited by Joachim Rathmann and Uwe Voigt (Germany: wbg, 2021), 13-32.

²¹ See, Sebastian Rosengrün’s contribution in this volume.

A Concept of the Anthropocene

To the context of the reflection on technology, which is made more urgent by the rise of Artificial Intelligence, belongs the naming of the current geological age as Anthropocene.²² At first glance, this seems just to be “a new age of the human being.” But this age manifests itself in the effects which the technological actions of human beings exert on their environment. These effects are empirically well documented, and, in many cases, they exceed all other factors concerning their influence on the environment. The technological means by which this is brought about, blend into the environment shaped by them, as Jens Soentgen has shown in his exemplary study of the river Lech which has been turned into a cyborg, an entity with natural components and a technological infrastructure.²³ As such a mixed entity, the Lech develops also activities which have not been aimed at with the human influences on this river, and this makes him a telling example as a part of a whole, a planetary environment, which is more and more destabilized and dynamized by the human impact in the Anthropocene. In this process, technology becomes such a crucial factor that the temporally oriented concept of the Anthropocene now has been flanked by the more spatially oriented concept of the Technosphere: the complex system formed by technology, which organizes itself more and more without regard to human interests because it is based primarily on side-effects.²⁴ This system encompasses and absorbs the biosphere; and if the biosphere can be understood as a self-organizing earth system which has organic character, what James Lovelock expressed under the name of “Gaia,”²⁵ then we are about to experience how Gaia is penetrated and assimilated by the Technosphere—and how also here, on a planetary scale, a cyborg arises which unfolds more and more dynamics of its own.²⁶ These dynamics are guided by those entity’s own ends and therefore have to deal with the according problems, there being no guarantee that these ends and problems are also ours and that at least some of our purposes are not its problems.

Hence, the Anthropocene can be understood as the technological transformation of the environment on this planet, in a threefold sense: It is a

²² See, *Das Anthropozän. Zum Stand der Dinge*, ed. Jürgen Renn, Bernd Scherer (2nd ed., Berlin: Matthes & Seitz, 2017); *Das Anthropozän. Schlüsseltexte des Nobelpreisträgers für das neue Erdzeitalter*, ed. Michael Müller (München: oekom, 2019); *Anthropozän zur Einführung*, ed. Eva Horn, Hannes Bergthaller (Hamburg: Junius, 2019); *Mensch—Natur—Technik. Philosophie für das Anthropozän*, ed. Thomas Heichele (Münster: Aschendorff, 2020).

²³ See, Jens Soentgen, “The River Lech—a Cyborg,” *Analecta Hermeneutica* 10 (2018), online: <https://journals.library.mun.ca/ojs/index.php/analecta/article/view/2059/1649> (accessed December 31, 2022).

²⁴ See, *Technosphäre*, ed. Katrin Klingan, Christoph Rosol (Berlin: oekom, 2019).

²⁵ See, James Lovelock, *Gaia: A New Look at Life on Earth*, 2nd ed. (Oxford: Oxford University Press, 2016).

²⁶ See, Uwe Voigt, “Inside the Anthropocene,” *Analecta Hermeneutica* 10 (2018), online: <https://journals.library.mun.ca/ojs/index.php/analecta/article/view/2057/1647> (accessed December 31, 2022); Uwe Voigt, “Das Anthropozän als geistige Umweltkrise,” in *Mensch—Natur—Technik*, 85-102; “Wissen um Atmosphären—Bildung für das Anthropozän?,” *Comenius-Jahrbuch* (2020): 13-32.

technological transformation, a process triggered by technology; it is moreover a technological trans-*formation*, because what is formed here also acquires the form of technology; and it is a technological *trans*-formation, which is guided by means and problems that may lay beyond our own. Like any complex of problems, also this problematic situation has a certain qualitative character, i.e., it is like something to be in it. Facing manifold phenomena on different levels, from individual experience up to international developments, may give rise to the suspicion that we have to deal with an atmosphere of logical narcissism—the identification of the subject with the point of view it has taken, which results in violent clinging to that point of view.²⁷ Such a situation is connected with an “ecology of fear,”²⁸ which forces human and non-human subjects together in a “democracy of suffering.”²⁹

Because of the scales on which this situation unfolds, it can be just sketched from the point of view of an individual human being, as it is attempted here, and it can be grasped by a multitude of measurements, which are the tasks of different scientific disciplines. Also the humanities have a place in this field, as empirical data and qualitative aspects are interwoven in that planetary atmosphere. The according interdisciplinary challenge is taken up by the Environmental Humanities,³⁰ which dedicate themselves to the cultural reflection of environmental conditions, also and especially as to be found in the narratives of the Anthropocene.³¹ In a situation as complex as this is, we need obviously all kinds of intelligence which can help us to grasp and cope with the current problems; hence, we need also Artificial Intelligence with its paramount power of data-processing, which seems to be the means of choice in the Anthropocene.³² Moreover, Artificial Intelligence in union with further technological means might prove to be a powerful actor which could help us to solve the problems of the Anthropocene, maybe even overcoming this geological age, finding a happy end in a new epoch of friendly cyborgs.³³ After our recent considerations, however, there is reason to doubt this consoling scenario: Like any other technological product, Artificial Intelligence is also a part of the Technosphere and therefore a part of the complex of problems with which we have to deal. Even if the technologically transformed earth system should finally act like an intelligent

²⁷ See, Footnote 26.

²⁸ See, Jens Soentgen, *Ökologie der Angst* (Berlin: Matthes & Seitz, 2018).

²⁹ See, Todd Dufresne, *The Democracy of Suffering: Life on the Edge of Catastrophe: Philosophy in the Anthropocene* (Montreal: McGill-Queen's University Press, 2019).

³⁰ See, *Environmental Humanities: Beiträge zur geistes- und sozialwissenschaftlichen Umweltforschung*, ed. Matthias Schmidt, Hubert Zapf (Göttingen: V&R unipress, 2021).

³¹ See, Thomas Schmaus, “Erzähl uns deine Erdgeschichte! Narrative Identität im Anthropozän,” in *Comenius-Jahrbuch* 28 (2020), 33-54.

³² See, Klaus Mainzer, “Vom Anthropozän zur Künstlichen Intelligenz. Herausforderungen von Mensch und Natur durch Technik,” in *Mensch—Natur—Technik*, 155-168. See also the contributions of Mike Meitner and Joachim Rathmann in this issue for critical reflection.

³³ See, James Lovelock, *Novacene: The Coming Age of Hyperintelligence* (London: Penguin, 2019).

subject, it is not guaranteed that its actions should serve our purposes and solve our problems.³⁴

So, Artificial Intelligence in the Anthropocene makes the very concept of technology as presented here problematic: It becomes the concept of a problem which we as finite subjects encounter also because it is like something to be in an according situation. Because the concept of Artificial Intelligence is implicitly inherent to the concept of technology anyway, thus technology in the Anthropocene turns out to be a problem for finite, human intelligence altogether. As already hinted at, the concept of nature might be of help in this situation; so, we turn to it now.

A Concept of Nature

As we have seen, subjects in the Anthropocene face the challenge to critically discuss their own point of view, in an environment which is technologically transformed to an extent that the question can be raised whether this environment still can satisfy the concept of the nature, nay, whether that concept still is of any use.³⁵ Here a great cycle in the history of concepts comes to its conclusion (and, as usual, opens up a new one), because in occidental tradition the work on the concept of nature has always served to determine the point of view of the subjects doing this work. This work has been proceeding in three steps, which here are depicted in a generalizing continuation of distinctions introduced by Elisabeth List, who follows Serge Moscovi, and Jens Soentgen, who follows Gregor Schiemann.³⁶ These steps lead from an intrinsic over an extrinsic to a relational concept of nature.

For a good reason, the occidental work on the concept of nature begins in the early time of Greek philosophy, which is confronted with a multitude of points of view: already within the Greek city-states with their manifold political and cultural conditions, and moreover in contact with different neighboring civilizations.³⁷ This situation made wonder how, within such a multiplicity, a reasoned and reasoning discourse (a *logos*) might be justified.³⁸ One way to give an answer is to find something which can be referred to in the same way from any point of view. What is found here is that which, so to speak, grows on any point of view, because it unfolds itself

³⁴ See, Nick Bostrom, *Superintelligence: Paths, Dangers, Strategies* (Oxford: Oxford University Press, 2014).

³⁵ See, Sean McGrath, *Thinking Nature: An Essay in Negative Ecology* (Edinburgh: Edinburgh University Press, 2019).

³⁶ See, Elisabeth List, *Vom Darstellen zum Herstellen: Eine Kulturgeschichte der Naturwissenschaften* (Weilerswist: Velbrück, 2007), 165-168; Jens Soentgen, "Der ökologische Naturbegriff," in *Mensch—Natur—Technik* (2020): 115-130.

³⁷ See, Jürgen Habermas, *Auch eine Geschichte der Philosophie. Vol. 1: Die okzidentale Konstellation von Glauben und Wissen*, 4th ed. (Frankfurt am Main: Suhrkamp, 2020), 417.

³⁸ See, Daniel-Pascal Zorn, *Vom Gebäude zum Gerüst: Entwurf einer Komparatistik reflexiver Figuretionen in der Philosophie* (Berlin: Logos, 2016).

anywhere of its own: nature.³⁹ Its concept is understood in a twofold manner:⁴⁰ According to its extension, it refers to the known natural kinds; according to its intension, it refers to everything which has the principle of its motion and rest within itself, as the famous formulation by Aristotle tells us. With this notion of nature we are acquainted on our given points of view, insofar we ourselves belong to what is natural, and therefore we can give the natural its usual names, even if we have to correct ourselves from time to time. We refer to nature from the inside. Here, subjectivity is conceived of as closely connected to the natural, as it is expressed in the Aristotelian conception of the soul as the form of a natural, organic body. This concept of nature is plausible because it offers itself from the point of view of finite human subjectivity which also has the principle of its own dynamics within itself and experiences itself as being at home in a world of entities which also follow inner principles, even if they are of a different kind. This intrinsic concept of nature, hence, is anthropocentric (conceived of from a human point of view) and also anthropomorphic (conceived of according to the model of our having a point of view). As the subject thinks of itself as a unity on its point of view, so it thinks also the natural as a set of objects, of unities in their time and place. In the light of this concept of nature, the world is seen as a cosmos, as a beautiful hierarchic order made of single things, which blend into it due to their inner principles respective their “natures.”⁴¹

This concept of nature has proved to be very influential; it keeps informing our current discourse on true, unfalsified nature in the sense of wilderness.⁴² This concept of nature seems also to bring about a sharp distinction between the technological, including Artificial Intelligence, and the natural, insofar the technological does not contain the principle of its motion and rest within itself, but has received it from outside.

The intrinsic concept of nature, however, has to face a problem: With it, nature is thought as a manifold of potential points of view for subjects. From which point of view is this done, from which point of view might this be possible after all? In thinking so, obviously a point of view is used which lies beyond nature, at least beyond the moved and resting which falls under its concept. This problem was articulated sharply already in Eleatic philosophy. Aristotle tried to counter this by connecting the soul as carrier of subjectivity as a form to the body informed by it and at the same time, in the human case, ascribing to the soul a part which gives it the ability of intellectual insight,

³⁹ See, Thomas Buchheim, *Die Vorsokratiker: Ein philosophisches Porträt* (München: C.H. Beck, 1994), 91-95, 152-154.

⁴⁰ On what follows, see, Gregor Schiemann, *Natur, Technik, Geist: Kontexte der Natur nach Aristoteles und Descartes in lebensweltlicher und subjektiver Erfahrung* (Berlin-New York: De Gruyter, 2005).

⁴¹ See, Stefanie Voigt, Uwe Voigt, “Head Jewellery—a Theory of the Theory of Jewellery,” in *Thinking Jewellery: On the Way Towards a Theory of Jewellery*, ed. Wilhelm Lindemann (Stuttgart: Arnoldsche Art Publishers, 2011), 80-93.

⁴² See, Gregor Schiemann, “Pluralität der Natur,” *Bremer Philosophica* 4 (1999): 31f.

a mind (*nous*), which “comes from the outside,” which can conceive of nature precisely because it does not (totally) belong to it.⁴³

How that mind has to be understood was a question on which the Aristotelian tradition labored and about which it got into a crisis that lasted until early modern times.⁴⁴ In order to overcome this crisis, René Descartes determined the relation of subject and nature in a new way. For Descartes, too, nature is an object of reference for subjects. But he does not conceive of subjectivity as being situated within nature, rather, according to the result of his methodological doubt, opposing nature. Subjects can refer to nature because they find concepts within themselves—especially the concept of extension—by which they can think states of motion and rest; and the natural, insofar it falls under these concepts, can be referred to subjects. The difference between subjectivity and nature is captured by Descartes in his famous juxtaposition of the subject as a thinking thing which is not extended and of the natural as an extended thing which is not thinking. As the natural falls under general concepts which can be thought with mathematical precision, it is to be understood as a realm of strict laws which can be formulated through those concepts—as a realm in which the laws of nature reign supreme. This realm is opposed by subjectivity, which in free self-reflection recognizes its own essence, thinking, and the essence of the natural. So, from the point of view of subjectivity, an external concept of nature is gained: According to it, on the one hand, the natural is what is external to subjectivity, and on the other hand, the natural is to be taken also within itself as a manifold of externalities, as bodies whose relations are not completely determined by themselves, as the internal view had seen it, but by the laws of nature.

This extrinsic concept of nature is no longer anthropocentric because it does not refer to the point of view of the human as a being which is (also) natural. It is rather acentric because neither within the manifold natural nor within the relation between the subject and the natural there is a center; this does justice to the transition from a closed cosmos to a universe which, at least at first glance, seems to be infinite.⁴⁵ The extrinsic concept of nature is also no longer anthropomorphic because the human being as a natural entity is now understood as just one body among other bodies. The ways of these bodies are determined by the laws of nature and therefore can be reconstructed with the help of mathematics. If bodies display certain kinds of complex activities, they can do so because they are accordingly constructed automata. So the extrinsic concept of nature turns out to be technomorphic. The products of technology, however, are opposed by subjectivity and also by intelligence in the sense given above. From this perspective, mind does not come into nature from the outside, it always stays on the outside.

⁴³ See, Uwe Voigt, “Wozu braucht Aristoteles den ‘Geist von draußen’ in seinen biologischen Schriften?,” in *Antike Naturwissenschaft und ihre Rezeption* 17 (2007): 29-38.

⁴⁴ See, Schiemann, “Pluralität der Natur,” 165.

⁴⁵ See, Alexandre Koyré, *From the Closed World to the Infinite Universe* (Baltimore: Johns Hopkins Press, 1957).

This concept of nature, too, was very influential. Not least it made the technological transformation of the environment in the Anthropocene to seem thinkable and feasible.⁴⁶ But also the extrinsic concept of nature has a problem to face, which articulates itself through the question how subject and nature, given their basic difference, can be related to each other. Descartes himself tries to answer this question by referring again to nature, conceiving it now as the connection between the thinking subject and its extended object, a connection which, in the case of the embodied human being, is very intimate as Descartes has to confess. What can be learned from this irritating use of the concept of nature is the following: The opposition between subject and nature can be thought only from a point of view which lies already beyond that opposition, from which it in turn the (seemingly mere) difference in question can be thought as mutual relatedness. The thinking subject has already turned out to be related in such a way from its point of view. Mutuality can be thought by ascribing a point of view also to the natural. Seen this way, nature refers to whatever is able to refer, from a certain point of view, to something else which has to be granted a point of view, too. Hence, the natural can be characterized by its eventual mutual relatedness, so that we can call this a relational concept of nature. In the light of this concept of nature, the natural can be seen as a web of relations between eventual points of view.

Independently from reflections on the history of concepts, Saul Kripke has elaborated an analysis of the logic of naming natural kinds, which is pertinent here:⁴⁷ We encounter individual specimens of these kinds and in doing so take a sample of them. On this occasion, we give a name to these kinds which refers to them as a rigid designator, whatever constitutes the kind in question. What does constitute them, either is immediately given by the sample itself—if we have to deal with a quality of experience like pain—or can be found out through further inquiry, as in the case of the biological kinds. These examples may seem to be anthropocentric and anthropomorph again, because it are humans who do the naming, the feeling and the inquiry. However, we can not only think but also experience that also human beings can become members of a sample, although we tend to repress this fact within our technological society, as Val Plumwood has elaborated after her near-death encounter with a crocodile.⁴⁸ Also human beings can be referred to; so there is mutuality here, at least in principle.

This relational concept of nature has been signified in two tellingly different ways by List and Soentgen: For List it is the concept of a cybernetic state of nature.⁴⁹ Soentgen instead is working on an “ecological” concept of nature.⁵⁰ In the first case, the relation which is central to the concept of nature is thought from the point of view

⁴⁶ See, McGrath, *Thinking Nature*, 156f.

⁴⁷ See, Saul Kripke, *Naming and Necessity* (Oxford: Blackwell, 1980); Kripke, *Reference and Existence. The John Locke Lectures* (Oxford: Oxford University Press, 2013).

⁴⁸ See, Val Plumwood, *The Eye of the Crocodile* (Canberra: Australian National University Press, 2012).

⁴⁹ See, Elisabeth List, “Vom Darstellen zum Herstellen,” *Zeitschrift für Kulturphilosophie* 1 (2014): 71-84.

⁵⁰ See, Soentgen, “Der ökologische Naturbegriff,” 116-118.

of technology and thus from the extrinsic pole of that concept; in the second case, the relation is thought from the natural and so still from the intrinsic concept of nature respectively from the intrinsic pole of the concept of nature. According to the relational concept of nature, nature is a realm of relations which all have this “bipolar” characteristics, making the given point of view conceived of as the point of reference of another point of view.⁵¹ This view matches, by the way, the stronger thesis that every possible point of view is embedded in the point of view of a comprehensive, transcendental subject.⁵² So the relational concept of nature turns out to be polycentric.

Insofar the object can be thought as the point of view of a subject, that subject can fall under a merely external determination as little as the subject which thinks that object. Thereby the background in the logic of reflection is revealed for the observation Kripke made as to the naming of natural kinds: Naming is not necessarily connected to an adequate determination of what is being named. This determination can be left open. The natural in the sense of the relational concept of nature, hence, is the realm of what can be named without having to be adequately determined for that purpose. Later determination is not excluded hereby, but it is also not pre-determined. The relational concept of nature is, so to speak, polymorph. This makes the relational concept of nature fit in with an understanding of contemporary science as having to deal with a web of relations.⁵³ This makes the scientific access to the Anthropocene an eminent interdisciplinary enterprise.⁵⁴

Also the relational concept of nature has a problem of its own, namely how one’s own point of view can be thought from the outside and how other points of view can be thought of as having their subjective inside. This is also the core-problem of contemporary panpsychism as the version of philosophy of mind which is in accordance to a relational concept of nature.⁵⁵ As it might have become clear by now, after all, the concept of nature is the concept of a problem, namely the concept of the problem how a subject can think in relation to itself as well as to other subjects. The relational concept of nature offers the advantage of not masking, but rather highlighting the structure of this problem.

⁵¹ The systematic core of this concept of nature can be tracked back to Schelling; See, Eckart Förster, *Die 25 Jahre der Philosophie: Eine systematische Rekonstruktion*, 3rd ed. (Frankfurt am Main: Klostermann, 2018).

⁵² See, Uwe Meixner, “Idealism and Panpsychism,” in *Panpsychism: Contemporary Perspectives*, ed. Godehard Brüntrup, Ludwig Jaskolla (Oxford: Oxford University Press, 2017), 387-405.

⁵³ See, Ernst Cassirer, *Substanzbegriff und Funktionsbegriff* (Darmstadt: Wissenschaftliche Buchgesellschaft, 2000).

⁵⁴ See, the contribution of Stefanie Voigt in this volume,

⁵⁵ See, Uwe Voigt, “Eingestimmte Subjekte? Das Kombinationsproblem des Panpsychismus im Licht der Atmosphärenkonzeption der Neuen Phänomenologie,” in *Die Macht der Atmosphären*, ed. Barbara Wolf, Christian Julmi (Freiburg im Breisgau: Alber, 2020), 60-74.

Intelligence in the Anthropocene: Natural and Artificial

Taking into consideration a relational concept of nature allows to answer the question asked at the start of this paper: if and how Artificial Intelligence in the Anthropocene could or even should be natural. According to the relational concept of nature, natural is what fits into a mutual relatedness in which one subjects thinks of its own point of view as the object of the point of view of another subject and thus acknowledges that other point of view as eventually belonging to another subject. Hence, intelligence in general is natural if it is based on a reflexive consciousness of problems and thus able to recognize its being placed in a point of view and confronted with the qualitative character of the problem. As we have seen, technology can short-cut this relation, if it is just used to solve the problem. Then technology is opposed to the relatedness characteristic of nature because it masks that very relatedness and prevents its reflection by the subject. Such use of technology can be called artificial in a pejorative sense. In contrast to that, technology can also support the reflection of the subject which then does not need to be concerned with any problems but just with those challenging its reflection as such. Under these circumstances, technology can serve the reflection of the relation to the environment.⁵⁶ As a product of technology, Strong Artificial Intelligence—which alone deserves our attention here, as seen—is part of the problem posed by a technologically transformed environment in the Anthropocene. This problem cannot be solved in a merely technological way because that would only perpetuate it. In the Anthropocene, intelligence, be it human, artificial or of another kind, faces the challenge to preserve and, if possible, increase its ability of reflection, in order to do justice to the complexity of the situation. A criterion for the success in tackling this challenge can be the extent in which intelligence can blend into the mutual relations which even a technologically transformed environment is still offering, thus staying or becoming natural. Artificial Intelligence will encounter its natural counterpart within that transformed environment, the Technosphere, one way or the other. If and how we succeed in preserving, cultivating and developing the according mutual relatedness as a space for experiencing shared reflection and, thus, rationality, may be a touchstone for any kind of intelligence in the Anthropocene.⁵⁷

⁵⁶ For a study of a classical use of technology in this sense, see Thomas Heichele, *Die erkenntnistheoretische Rolle der Technik bei Leonardo da Vinci und Galileo Galilei im ideengeschichtlichen Kontext* (Münster: Aschendorff, 2016).

⁵⁷ Uwe Meixner, "Natur und Vernunft im Anthropozän," in *Mensch—Natur—Technik*, 67-84; Marion Friedrich and Joachim Rathmann, "Corona und die Herausforderung für den Umweltschutz," in *Natürliche und Künstliche Intelligenz im Anthropozän*, 253-252; Heinrich Beck, *Kulturphilosophie der Technik: Perspektiven zu Technik—Menschheit—Zukunft*, 2nd ed. (Trier: Spee, 1979).