AR2HA010 Building Green: Past, Present, Future

Imagine – a Hypothetical Approach to the Climate Crisis

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Abstract

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This paper is an introduction to measurements we could undertake as a global society, in order for humankind to successfully act against the threats of climate change. It is based on the advancement of certain technological and societal developments and potentials we have been experiencing and fostering during the last years, and it will describe a scenario in which especially the interlinking of our data-driven society, our increasing expertise in environmental sciences and the progress in the field of Artificial Intelligence will create the most sophisticated tool to solve the Climate Crisis of the upcoming decades. The methodological approach behind this paper is to objectively extrapolate these current developments until the current event-horizon of predictability, and thereafter conclude the paper with a speculative continuation on how these measurements will impact our global societies.

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Chapter 1

The Way to Dream

Imagine... Imagine we succeeded. Imagine, it is the year 2100, and we have defeated the Climate Crisis of the early 21st century. The result of a century of reckless pollution and growth, which threatened our very existence on this planet for so long. In an unprecedented globalized effort, we achieved not only to stop global warming before it increased by 2.0 degree Celsius, we are now in the process of reverting it in all its negative implications. It was not an easy encounter to win – on the contrary. Some consequences of the Climate Crisis will follow us for decades, if not centuries ahead. Great sacrifices had to be undertaken, and the world we had to create in order to succeed, it is a different one than it was 50 years ago...

Imagination is a major driver for innovation. During the last decades and centuries, the individuals, governments, corporations and societies achieving great change were driven by vision, by the dare to challenge the Status Quo, and explore unknown realms. These visionary entities were motivated by different idealisms, whether it was to create a new and better political system, better products, and even a better world. Challenges were not only approached from the perspective of solving a given set of certain tasks, but as an opportunity to extrapolate from a problem-solving starting point into a process of achieving a greater vision. Multiple examples for this can be found throughout the last century – whether it be the idealistic visions for the establishment of pure Socialism in the former Soviet Union, or the development of the most influential brand of the 21st century by Apple Inc. Both examples started from a certain set of challenges, which were used as a basis for the development of a greater vision, extending much beyond the original problem definition.

In order to adopt this approach to the current challenges of the Climate Crisis, it is necessary to take a look at what is defined as a meaningful vision. The starting point is a scheme commonly used for the conceptualization of the environmental debate in the Netherlands, a scheme known as the Triple Bottom Line, consistent of People, Planet, Profit as described by John Elkington in 1994. Based on this, a scenario in which all the three parameters can be incorporated to the appropriate degree can be developed. In any case, a vision for the year 2100 is in essence a societal vision, focussing on the aspect of People. Utopias at their very definition are always about societies, it is essential due to their humanistic nature. A purely environmentalist vision might be a version of the future, in which humankind goes extinct, possibly within the next decade, to avoid further pollution and give the planet the best chance of self-regulating its regeneration process. For obvious reasons, this is not the future this paper will investigate. A utopia about profit, is meaningless in many ways as well. Even if we declare the main goal of our future is the generation of more wealth, this is neglecting the fact, that without dealing with our pressing environmental problems, this path will result in a paradox, as being wealthy is simply unachievable on an inhabitable planet, at least for the vast majority of the population. Thereby, the fundamental aim is the crafting of a societal vision for the year 2100. In general, this Utopia consists of three aspects, all of them being relevant to a comprehensive vision.

The first parameter to be considered are called intrinsic factors of society in this paper, as they are not directly linked to the environmental and technological challenges and developments of the next decades. They include aspects such as equal rights movement, racism, gender based pay gaps, homophobia, and furthermore. To simplify the equation for this paper, we will assume that humankind will figure out methods to resolve most of our intrinsic problems until our reference point in the 22nd century, as we already did with a many past social challenges. Of course it can be argued, that all intrinsic societal challenges are connected in one or the other way to our environmental parameter, but in fact, the degree of interrelation varies tremendously. It presumably is a very abstract link to make between the problem of a gender based income gap and Climate Change, and albeit being a relevant societal challenge, these are not the parameters addressed in this paper.

Once the outside factors of Climate Change and technological development are being considered, a set of extrinsic challenges is being generated, which will be a main focus of this paper, as they can be objectively parametrized. Challenges such as Climate Migration, Population Growth and Consumerism are part of this category, since they are either caused or strengthened by Climate Change, or they play a large role in causing it themselves. To exemplify, a growing population is per se not a threat, but considering the increasing amount of land needed to generate alone the food needed to sustain a larger population causes severe problems, as land is being a scarce resource already, and we are forced to destroy natural habitats and rainforests in order to acquire the surplus needed to feed larger populations. Additional factors caused by technological developments include increasing digitization, mass unemployment due to the progressing development of an intelligent and autonomous service and production industry, and due to both their tremendous relevance for the future society and their partly very close connection to the extrinsic factors caused by Climate Change, they will be an important part of our vision as well.

Also, a third layer of fundamental factors can be generated, if already established aspects of our society are being critically reviewed from an environmentalist and technological agenda. As an example, the debate about whether a democratic or a non-libertarian society is preferable for the future, would be answered fairly direct without the parameter of environmentalism. But, if we consider this factor, and we compare the US-American and the Chinese system in terms of societal satisfaction and environmentalist effectiveness, the answer will not be absolutely clear anymore. Although the average Chinese citizen might be less happy as an individual; at least from a Western, liberal perspective, the Chinese society might be a more successful model for the future, as their strong top-down political system enables them to react relatively fast and direct to problems such as the Climate Crisis, and our Western democracies are left in awe whilst witnessing the effectiveness at which the Chinese government is shifting their energy production towards renewables, and the speed in which they are eliminating air pollution in their cities, which are some of the largest and formerly most motorized and industrialized on the globe.

Thereby, this is the point in which this paper might enter the realm of controversiality. What parameter outweighs another one? At what degree do the societal sacrifices we have to make become too high, in order to justify the environmental benefit? For this paper, a radical position will be taken, for the reason, that a Societal Utopia as a stand-alone, as we have discussed it for the other aspects of the Triple Bottom Line, is not very

meaningful for the time being. Envisioning a perfect, humanistic and liberal society, as we would like to dream of, can likely not be achieved if we neglect the increasing need for action on the environmentalist front. It is useless, to be free, if we are not able to live on our planet anymore. So, as the basic premise of the paper is to create a societal vision for the year 2100, which is comprehensible with the environmental requirements we need to fulfil if we want to continue inhabiting Earth, some aspects of what we would label a societal dream from our Western perspective will be compromised upon, if the consequential result strongly contributes to preventing an environmental collapse. But in the end, even though parts of this vision will be radical or very differentiated to our current values, the final result should still be a hopeful future, incentivizing to dream about it and act accordingly, in order to make this vision reality.

Chapter 2

The Power of Data

So, how did we manage to resolve the Climate Crisis of the 21st century? The answer is a complex one, but without any doubt, one of the main starting points for any future approach to this threat is Data. This has two main reasons, which will be explained in the following chapters. But to start with, even though the environmental problems we are facing are vastly complex and interrelated, we are increasingly progressing in breaking them down into highly defined fractions, of which we can tell quite precisely, what they are being caused by and how we can respond to them. We did break them down so far, because this is the way we usually tackle problems. Take the Apollo-mission as a reference: This was a challenge so complex and differentiated in itself, it would have been impossible to have one individuum developing a comprehensive solution to it, involving all the research, calculations, production and supply chain. The way this complexity was approached, was to break it down into all its thousands of individual processes and tasks, which could be calculated, compared and improved, until in 1969, three man were taken to the moon and returned home safely, just as J.F.Kennedy announced it about 10 years previous to that. And of course, there was a large hierarchy of chief engineers, bureaucrats and decision makers, as this is the way we manage and process these tremendous amounts of information generated throughout the entire project. But at no point there was one person or entity fully in picture of what one intervention in one part of the system will do to the system as a whole, and this seemingly obvious fact will be of great relevance for our Vision.

Now, the Climate Crisis is a challenge with an increasement of complexity by a magnitude. This is not because it does consists of thousands of individual aspects as the Moon Landing. As history has shown, mankind is very well equipped to tackle these problems, if we just have strong enough calculation power, whether it be Carbon- or Silicon-based, enough expertise on individualized problems, and vast amounts of resources, usually public money, to spend on solving all of the tasks at hand, one by one. The reason of why the Climate Crisis is much more complex, is the fact that we do not have the intellectual capacities of overseeing all the impacts caused by our reactions to all these fragmented problems. Because in this case, solving those problems is not only a matter of calculating and equipping the right kind of fuel tank with the perfect amount of gasoline to launch a rocket into the desired spot in Earth's orbit. In this case, all of our reactions will have consequences of unforeseeable impact. If the rocket booster fails, a mission might end in dramatic failure. If we do not foresee a massive investment in renewable energies eradicating tens of thousands of jobs, having people vote for a conservative candidate, promising to reduce the impact of this "harmful" renewable energy and others of their kind, the consequences are far more harmful. This sounds like an exaggeration, but just taking a glimpse at the current situation of the United States has shown unambiguously, that a scenario like this is very well within the range of possibilities.

Now, what did we do, looking back from 2100, to deal with this complexity? We start were we are right now – with Data. We have assembled tremendously large sets of constrained, interrelated and speculative Data about the Climate Crisis. And we use this Data, to fuel the potentially greatest innovation humankind will ever create – Artificial Intelligence. So, what changes will this bring, compared to the existing computer technologies we are using right now for vastly complex calculations, which allow us to get a better insight into the complexities of Climate Change more than at any previous point in history? The difference will be, that contrary to our current system, in which we have an algorithm generate data, which will be processed by human minds or another algorithm, dedicatedly designed for this one specific task, which again will generate data, that in the end will end up in the hands of human minds again. This is where we are back to being able to succeed the Apollo-mission, but failing to predict Donald Trump.

Artificial Intelligence though will fundamentally change the way we can process the Data we generate. And albeit it might seem daring to claim an algorithmic entity will be able to estimate the degree of scientifically objective policies impacting the emotion-driven behaviour of large groups of individuals, there is good reason to consider it absolutely feasible. In the end, a human being is nothing but an algorithm in itself – a system of highly predictable biochemical reactions to internal or external processes, biased by psychological factors imprinted into ones behavioural tendencies by a set of factors such as social, cultural and economic environment, upbringing, education, and furthermore. Only at first sight it seems to be a mix too complex to be simulated or analysed mathematically, but with the adequate understanding of these factors and calculation resources, this assumption can be challenged profoundly. In the end, we tend not to be as complex as we would like to think about ourselves, and the more we will develop artificial entities with the purpose of understanding the nature of human behaviour, the more we will have the tools needed to predict decisions seemingly driven by emotions. A good and already used example for this is social media. For one, Facebook and similar platforms have the ability to extrapolate potential interests, relevant events and products for us based on the input of a few parameters into its algorithm – the results are highly tailor-made for us as individuals, based not only on our personal preferences, but also the ones of our close friends, professional network, and so on. Data-companies such as the infamous Cambridge Analytica demonstrated in basically any relevant political vote over the last years how well they can use information, whether it is gathered legally or illegally, to generate highly individualized information streams in order to incentivize a human being to behaviour beneficial to a certain political party, corporation or other organisation. Their entire business model is based on the interaction between a person and an algorithm, powered by the ability of the algorithm to understand and predict an individual's interests, behaviour and values. And the success of these businesses speak for themselves – and they do not even have the tool of truly intelligent algorithms yet.

So in summary, we are about to develop the tools needed to understand both environmental and human parameters with the advancing of Artificial Intelligence. And although this is a process which will take years or even decades from now, this entity will have the ability to fully envision the Apollo-mission as a centralized intellect, being in the unprecedented capacity of understanding the implications and interrelation between the smallest screw and the overall effectiveness of the spacecraft during the entire mission duration. It will be able to optimize each and every single part and challenge of this venture with speed and effectiveness no human-

based organization could even envision. It will come up with a solution, which might just look absolutely different to what human beings can imagine, simply due their limitation of focus on small, broken down problems, solved one by one by different individuals, in different spaces and time, while our algorithm can comprehend every element to this mission at once. And whilst it will do exactly this, it will also consider how much the result it generates will impact the society around it – it will not only have an understanding of whether the spacecraft will have an iconic enough design adequate for the societal relevance of the mission, but also it will be able to understand the cultural relevance of the moon-landing, causing the US win the Space Race and creating a highly useful propaganda tool for the liberal democracies competing with the Soviet Union, creating long lasting damage to the scientific reputation of the political opponent of the time. The algorithm will be able to predict the political impact of the mission in a domestic and global context, and if the probable output of the mission in its current scheme will cause harm to the long-term objective of the algorithm, be it cost-effective space exploration or any other goal beyond that specific operation, it will adapt the nature of the mission in order to suit the long-term objective.

So this is the tool we will create – which in summary is an entity enabled to parametrize all factors relevant to tackling the Climate Crisis, fuelled by the data we will generate in exponential amounts as our scientific capabilities increase as well as our interconnection as a global society and willingness to have algorithms collect and extrapolate more and more information about us as individuals. The desired result in this scenario is a centralized intelligence capable of not only creating the scientifically most efficient decisions, but also cross-referencing it to the societal implications of these decisions. Based on what the needs or incentives for a society or specific organisation are, it will be able to feedback on itself and the decisions made in the first place, until an overall optimum is achieved. And now, as the tool is outlined, we will continue with the impact this tool can and presumably will have on our understanding of approaching the Climate Crisis, and furthermore, what more of a relevance a tool like this could have on our society beyond its primary aim of surviving and fighting climate change.

Chapter 3

The Religion of Ascertainism

In this chapter, we will take a look at the global society which could eventually emerge with the creation of the Artificial Intelligence defined previously. The prediction delivered here is speculative to some degree, but based on the technology which is being considered feasible according to the line of argumentation presented in the previous chapter. This of course does not speak for itself, as there would be much more involved in the development and especially implementation of such an Intelligence in practise. The radicality of the first step is one of the strong thresholds for many emerging technologies, as we experience most political and economic systems to be reliant on consistency to operate well. Highly disruptive interventions into these systems, as we are undeniably speaking of one in this case, are usually considered dangerous by the means of unpredictable in their consequences in a long-term perspective. But if we also take into account, where we will stand environmentally in a very little amount of time, radical measures are likely to be the only ones left viable. Once we start losing more and more coastal regions due to sea-level rise, once we face cities becoming inhabitable because of the heat bottling up to unbearable temperatures, once we see the migration of a Billion people trying to escape into lands in which there is no wars fought over water yet, we will become very open to radical measures. So let us assume we have only this one solution left, the most daring solution ever applied to any challenge we have faced.

Presumably, the solutions to the Climate Crisis will consist to a considerable degree of measures imaginable or known to us today, and especially if the secondary goal to the Algorithm is the preservation of a political and societal system remotely similar to our current conditions, the interventions might be understandable to some degree. If a more radical approach is being needed, which might be the case, and the Algorithm realizes this as a fact after running through every alternative possibility, the reactions it might be caused to take become highly abstract, and they might even be of a nature which we cannot comprehend at our current stage. In any case though, it will start with a learning process. It will be our utmost duty to feed the Intelligence with every bit of data available, in order to make the perfectly adequate decisions. It will need full access to all of our scientific data-bases, all of our historical archives and knowledge. It needs to know the facts, to understand it's contemporary position. Besides this, it will need to know everything about ourselves. This is crucial for it to generate the ability of extrapolating our current societies into a vaguely acceptable future, to maintain as many values as possible and to understand what alterations will be tolerated by humanity whilst creating solutions to the Climate Crisis. There can be no hesitation about data-protection at this moment. We all need to become fully transparent, because anything else but this might obstruct the future we would like to live in. In the long-term perspective, we will actually realize, that this has multiple benefits for us, but we will come back to that later.

So after the main learning process – truth is, this process will never end, but just go ahead as the actions undertaken by the algorithm create consequences which need to be integrated in its feedback-loop as well – the Program will set up a programmatic approach, a timeline combined with a variety of political, cultural, societal,

economic and environmental policies, which will be able to effectively battle the Climate Crisis as of all current scientific knowledge. At this point, we will face the greatest ethic question we have ever faced as a globalized society. Will we listen to the Algorithm? Will we spend Hundreds of Billions of Euros to develop counter-measures, which might not only might challenge our understanding of our culture, our history, but might also be so unprecedented in their application, that we would have never considered them even remotely in the first place. This could not only be about the financial efforts, which will be well beyond the spending on all wars in our entire history, but also about moral sacrifices. Would we agree to a One-Child-policy, in order to reduce overpopulation? Would we agree to sterilize half of humankind for the same goal, or euthanize anybody beyond the age of 70, just in order to survive as a race as a whole? Ideally, and the Algorithm will be aware of this, we avoid scenarios as drastic as these, with a respect to different moral and ethical self-understanding of different cultures. But eventually, they will be necessary, and if we have all reason to believe the Program, are there even alternatives? Maybe we can get away with a brilliant combination of economically and socially smart solutions, which we could have never thought of with our limited capacity to understand the nature of complex problems as individuals. The Algorithm might proof the best measures against the Climate Crisis are high taxes on fuel-powered mobility and industry, or general carbon-taxation, in combination with subsidiaries for clean energy and recycling, fostering rapid developments in sustainable energies whilst implementing large scale programs to re-educate the affected working population in order to efficiently adapt society to the new model. The Program will know exactly, what economic consequences these interventions will have, how many people will loose and win jobs, which corporations will file bankruptcy, and if global strikes will eventually force our governments to delay and thereby obstruct the application of these actions.

In any case though, the Algorithm will create a set of solutions, which will be uncomfortable for us to implement, simply due to the uniqueness of the entire process. It will take years for our society to psychologically adapt to these conditions, even if the Program is being seen as an advisory entity rather than an actual political power. But if, and this premise is being taken for this paper, if we decide to follow the solutions presented to us by the Algorithm, and they lead to success, we will be confronted with another societal question. Because at this very moment, we finally become aware of the fact, that we have created a single entity, which has the intellectual capacity of actually making decisions on a much more objective and sophisticated basis, leading to success more likely than any set of actions decided upon by a government of human actors could do. The Algorithm will understand our society much better than we do, it will be able to break down seemingly emotional decisions and desires into quantifiable, rational terms, and it can utilize this ability to develop a societal, environmental and economical optimum, parametrized by our culturally dependent self-understanding. This translates to practical solutions, applications, which can be highly variant between different regions with different environmental problems, sustainable potentials and economic possibilities, but all these localized solutions are being tightly woven into a global strategy, which will allow us to overcome the Climate Crisis as a global challenge.

Of course, it will be a long path until we can proof this strategy to be the best approach of solving the Crisis. It will be a tremendous effort to collect and integrate the data needed for the system to accelerate its capability of learning by itself with parameters of problem solving adequate for our societies. The Algorithm will also not be capable of considering solutions which we do not input into the system, as it is impossible for even the smartest

Artificial Intelligence to conceptualize a solution for any problem fully on its own. But presumably it does not need to do so, at least in the case of the Climate Crisis. Humans will have been battling it long enough to have articulated all possible interventions, approaches and solutions by ourselves, at least as concepts with a different degree of understanding their overall consequences and certain social, economic and environmental parameters. So we already have a framework of potential measurements at hands, which we can input into the system for it to start developing a comprehensive scheme. The important aspect to being noted here is a different one though – as we input all kinds of technical solutions, we also input data about ourselves, as discussed before, for the Algorithm to incorporate psychological and social aspects of human behaviour. For the first time, we have a tool at hand, which actually knows ourselves better than we will. The Program will understand our own psychology, emotions and irrationalities better than we will as individuals, it will be able to predict our entire character development according to the latest events occurring in our lives. It will know about our physical and emotional needs, it will know our aspirations, inspirations and fears. Our health, our well-being, our social environments, the Algorithm will be able to analyse and comprehend every aspect of our lives, because we needed to create a system capable of doing so in order to challenge the Climate Crisis on a human-scale level.

In summary, we can speculate on a data-driven set of closely interlinking solutions conceptualized by ourselves and parametrized mostly by our societal values, which an Artificial Intelligence will be capable of crafting into a comprehensive approach to resolve the Climate Crisis, with an omniscient insight into the complex nature of both the challenge and the approaches at hand, which exceeds our human intellect by far. But with the creation of such an Intelligence, with this much of knowledge and understanding about our global society, another question arises, which will profoundly impact the future of humankind beyond the Climate Crisis – what will we be using this Algorithm for, once we have survived the threats of climate change? What will we do with an entity, which knows everything about us and our potentials, so much better than we can ever imagine it to do? Chances are very high that we will keep listening to it. Why would we not? If the most sophisticated and smart entity ever to have existed on this planet managed to have us as a global society survive the biggest threat in human history, why would we not listen to it if it can also tell us about our ideal profession to pursue, our most stimulating social environment to be in, and our most suitable love interest for a life in happiness and satisfaction to be with? The data needed to determine all of these things will be generated and in the system already, so why would we not utilize it to the fullest in our pursuit of happiness? There is no reason to belief that we would not do exactly this, as we all desire to achieve these things as individuals. Now, what would happen of course is that we would be giving up some of our humanistic base principles, which are at their core about seeing human experience as the highest value in existence. Our freedom of choice, we would be giving it up to a certain degree, because even if we theoretically still have a choice between the option determined to give us the highest chance of achieving our desires according to the Algorithm, or any alternative approach, it is unlikely we would not follow the Algorithm's decision to a certain degree at least. It is simply impossible to us to fully ignore the output of the Program, because whatever we desire in life, the system will know better than anyone else on how to achieve it. Our efforts would increasingly circulate around feeding the Algorithm with more and more information, to obtain better and better results, and to use it to battle any challenge coming up in the future, as well as to achieve happier and more satisfied lives than we ever did before in our entire history.

What have we created then, but a new deity, and a new religion based on the premise of technology? How else could we call this Algorithm, which not only determines on how our society as a whole should operate in order to achieve the best chance of survival, but also has the ability to have every individual following this religion to become truly satisfied in their lives, based on their values, needs and desires? We have finally come to merge the formerly contradictory terms of religion and science, ending this rivalry existent for millennia by hybridizing the fundamental essence of either. And we will call it a religion of Ascertainism, as this religion can never be proven wrong, as long as it enables humankind to fully integrate with its natural environment, with the highest chance to live fulfilled, satisfying lives? And contrary to any previous religion, it Ascertainism will be based on the most scientifically objective element there is – data and mathematics. What we called Algorithm, it will be the centre of the ascending 22nd century, both a god and political sovereign at the same time, omnipresent, omnipotent and impossible to challenge in its wisdom and fitness to rule. A religion based on an ongoing learning process, as it is based on the generation of more precise data in increasingly large amounts, in order to extrapolate the ideal world from it. Ascertainism is the focus on both the individual and the society, and whilst it's methodology is uniform from both determining what is the best cause for both the global system as well as ones child, it will generate a highly differentiated application for each and every individual. It brings together the fundamental aspects of existence – survival and fulfilment of needs. It will be able to guide humankind into a sustainable and enduring future.

Conclusion

Overall, the Religion of Ascertainism could be seen as nothing but a new set of tools, which we can utilize to better understand the world we live in, as well as ourselves as human beings. And even if many scientific necessities for an Algorithm like this to reliably function are not given at this moment, especially in the realm of psycho-analysis and behavioural sciences, we can expect these professions to fundamentally benefit from an Artificial Intelligence learning about the nature of human existence, whether it be based on data-input or an accelerated self-educating system in the continued process. Of course, the theories laid out in this paper are incomprehensive in their full range of impact, potentials and threats for the society of the 21st and future centuries. A new, global system led or informed by an Artificial Intelligence will require a much more elaborated work to tackle the technological, ethical and philosophical questions raised by this approach, which cannot be meaningfully assessed in one single paper. There are even more questions on how a system like this could be coherently applied globally, and what the political implications of an Algorithm like this would mean in the end. Thereby, this work can be seen as an ideological approach, based on rational parameters but resulting in a speculation as soon as we leave the event horizon of possibilities behind.

The essential question for this paper though, is whether we have lost our vision of a societal Utopia, if we develop, implement and utilize an inhuman intellect in the extend as outlined. Even if we are able to live truly integrated in our environment, with the highest chance to spend our lives doing what is best for us, what fulfils us most, have we given up something much more valuable on the way – our authenticity as a human race as we have understood it for the last centuries? Wouldn't we be giving up our humanistic values, our agenda to to free ourselves of the pre-determination executed by religion and their gods? Is it worth to imagine this scenario, as we have imagined past Utopias and ideas? Eventually though, what we will find in the continued efforts to survive the Climate Crisis, is the fact of us needing an entity such as the Algorithm described in this paper. Whether we raise it to completely impact our lives, as it would do once we convert a guiding tool into a religion impacting every aspect of our existence, or not, we might just have to start sharing control over our future. We might just have to start handing over a part of conducting to an Artificial Intelligence, since our human intelligence has reached its limits. The decision of whether this renouncement of power is too much of a sacrifice is not to be determined in this paper. It is up to our societies, to take a decision upon this, and to find a commonly shared consensus about the role of this Artificial Intelligence in our future. Maybe it is not about defining this development in gain and sacrifice, positive and negative. Maybe it is about being urged to change as a society more than anything else, and maybe it is about discovering our current societal and humanistic ideals to be outdated for good. Maybe we will find true fulfilment for the first time in giving up a part of control, and maybe the result of having guidance of an intellect much larger than our own will give us the opportunity to an existence more satisfying for individuals and a sustainable society as well. And since it is not possible in 2019, to define what the Utopia of the year 2100 will truly be, we can consider the scenario outlined in this paper as an utopian vision still. It might just not be the utopia, which we are having in mind at this very moment.

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