

# 기술, 기후 변화 그리고 우리는 무엇을 할 수 있는가

## Technology, Climate Change and What We Can Do

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### 국문요약

1. 한 가지 도전은 기술과 생활 전반에 과도하게 도구적인 태도를 취하고자 하는 유혹에 있다. (그저 수단에 대해서만이 아닌) 결과에 대한 의문, 모든 것이 무엇에 관한 것인지에 대한 의문, 좋은 삶에 대한 의문, 이런 의문들이 도외시되거나 무시되는 위험이 존재한다. 우리는 이 모두에 관련된 몹시 계몽적이며 통찰력 있는 짧은 논의를 기원전 4세기에서 2세기 사이로 거슬러 올라가는 『장자』 12편에서 찾을 수 있다. 그 아름다운 구절의 끝을 소개하자면, “정원사가 화가 나 붉으락푸르락하고 그 뒤 웃으며 말했다. ‘선생님께서 말씀하시길, 기계가 있는 곳에서는 기계가 걱정하기 마련이고, 기계가 걱정하는 것이 있는 곳에서는 기계가 사랑하기 마련이라고 하셨다. 네 가슴에 기계 심장을

가지게 된다면, 너는 순수하고 단순한 것을 망쳐버린 것이다. 그리고 순수하고 단순한 것이 없으면, 정신의 생명이 안정되지 않는다. 정신의 생명이 안정되지 않는 곳에서는, 도가 더 이상 너를 부축하지 않을 것이다. 내가 너의 기계에 대하여 알지 못하는 것이 아니지만, 그것을 사용하는 것을 나는 부끄러워 할 것이다.”(『장자』, 천지편) 필자는 이 고전의 일부 측면을 해석하고 우리 시대에 갖는 함의를 강조하고자 한다.

2. 이와 밀접하게 연관된 두 번째 질문의 집합은 자유, 지배와 여기서 기술이 어떤 역할을 하는가에 대한 것이다. 기술은 우리가 통제하도록 되어 있다. 그리고 많은 경우 그렇지만 또 많은 경우에는 그 반대이다. 다소 평범한 사례를 보자면, 우리는 핸드폰에 얼마나 의존하는가? 그리고 우리가 필요하다고 생각하는 새로운 애플리케이션은? 우리 중 몇 명이 핸드폰을 옆에 두고 자며 올리면 바로 받을 준비를 하는가? 그렇다면 우리가 핸드폰을 소유한 것인가 아니면 핸드폰이 우리를 소유한 것인가? 사용자와 도구, 혹은 지배자와 피지배자 역할이 바뀌는 역설은 장자 이래로 여러 번 제기되었다. 어떤 이는 마법사의 제자에 대한 괴테의 시를 연상할 수 있다. 혹은 어떤 이는 프랑크푸르트 학교를 연상할 수도 있다. “자연의 지배는 인간의 지배를 수반한다.”(호르크하이머, 『이성의 일식』) 그리고 그 자신에 대해서도 마찬가지이다. (호르크하이머와 아도르노, 『계몽의 변증법』) 필자는 옛 프랑크푸르트 학파의 비판적 논의를 제시하고 장자가 이미 올바른 질문과 정확한 답에 훨씬 근접해 있었다는 결론을 도출하고자 한다.

3. 마지막으로 기술의 가장 심각한 문제 중 하나는 우리가 기술을 사용하면서 입는 손상과 자연 환경 전반에 대한 파괴와 관련되어 있다. 기후 변화는 현재 가장 긴급하고 심각한 이러한 문제이다. 우리는 배기가스를 줄여야 함을 알고 있다. 하지만 쟁점은 기술뿐만 아니라 (환경적) 윤리에 있다. 기후 변화에 대응하는 부담을 사회적으로 공정하게 분배하는 방법은 무엇인가? 필자는 모두가 희구하는 몇 가지 핵심적인 윤리적 개념-역사적

책임, 응분의 상벌, 평등, 미래 세대에 대한 책임-을 논할 것이다. 마무리로 “완벽하게” 공정한 해결책이 존재할 수 있다는 생각을 포기하며 지볼할 수 있는 능력과 수요에 주목하는 제안을 하고자 한다. 그렇다 하더라도 여전히 매우 좋고 그리고 충분히 좋은 해결책이 있을 것이다.

## Abstract

1. One challenge consists in the temptation of adopting an overly instrumental attitude towards technology and life in general; there is the danger that questions about ends (and not just means), about what it's all for, about the good life, are being pushed into the background or neglected. We can find a very enlightening and insightful brief discussion of all this in chapter 12 of the Chuang Tzu, dating back to the time between the 4th and 2nd Century BCE). Here is the end of this beautiful passage: “The gardener flushed with anger and then said with a laugh, “I’ve heard my teacher say, where there are machines, there are bound to be machine worries; where there are machine worries, there are bound to be machine hearts. With a machine heart in your breast, you’ve spoiled what was pure and simple; and without the pure and simple, the life of the spirit knows no rest. Where the life of the spirit knows no rest, the Way will cease to buoy you up. It’s not that I don’t know about your machine—I would be ashamed to use it!” (Chuang Tzu, ch.12, p.134). I try to interpret some aspects of this ancient text and stress its importance for our times.

2. Closely related to this is a second set of questions about freedom and domination and what role technology can play here. Technology is meant to put us in charge - and in many ways it has but in many ways it is also the other way around. To consider a rather mundane example: How dependent are we on our cell phones? And on every new app that we think we need? How many of us sleep next to a cell phone, ready to jump when it rings? So: Do we own our cell phones or do they own us? The irony of changing the roles of user and tool, or ruler and ruled has been brought up many times since the Chuang Tzu: one could think of Goethe’s poem on the sorcerer’s apprentice. Or one could think of the Frankfurt School, too: “Domination of nature involves domination of man.” (Horkheimer, Eclipse of Reason, 93). And: of oneself as well (see Horkheimer and Ador-

no, Dialektik der Aufklärung). I present a critical discussion of the old Frankfurt School and come to the conclusion that Chuang Tzu was already much closer to the right questions and the correct answers.

3. Finally, one of the most serious challenges of technology has to do with the damages that our use of it can do to us and the natural environment in general. Climate change is currently the most urgent and serious such challenge. We know that we have to reduce emissions. However, the issue is not just one of technology but also of (environmental) ethics: What is the socially just way to distribute the burdens of responding to climate change? I discuss several core ethical ideas – historic responsibility, desert, equality, duties to future generations – but find them all wanting. I end with a proposal focusing on the ability to pay and on need, giving up the idea that there can be “perfectly” just solutions. But even then, there can still be very good and good enough solutions.

Here we propose a third way like Eco and the humanistic heritage: to promote language diversity, that is to say learning the language of the other and, when this is not possible, translation. The future of Europe, but also of the rest of the world, lies not in a sterile struggle between narrow nationalisms and a single language that cannot exist on a planetary scale (all the international languages like English, Spanish or French have very distinct varieties depending on the continent), but in the recognition of the diversity and richness of different cultures. While automatic translation is making enormous progress for some languages, the societal role of translation must be clearly affirmed.



This paper deals with the challenges that our use of technology poses for us. One challenge consists in the temptation of adopting an overly instrumental attitude towards technology and life in general; there is the danger that questions about ends (and not just means), about what it's all for, about the good life, are being pushed into the background or neglected. Closely related to this is a second set of questions about freedom and domination and what role technology can play here. I present a critical discussion of the old Frankfurt School of Critical Theory and come to the conclusion that Chuang Tzu was already much closer to the right questions and the correct answers. Finally, one of the most serious challenges of technology has to do with the damages that our use of it can do to us and the natural environment in general. Climate change is currently the most urgent and serious such challenge. We know that we have to reduce emissions. However, the issue is not just one of technology but also of ethics, of environmental ethics: What is the socially just way to distribute the burdens of responding to climate change? I discuss several core ethical ideas and end with a proposal, giving up the idea that there can be “perfect” solutions.

## **I. Technology: Means and Ends, Freedom and Domination**

### I.a: Chuang Tzu and others

I would like to start with a quote from a text that is more than 2000 years old:

Tzu-Kung traveled south to Ch'u, and on his way back through Chin, as he passed along the south bank of the Han, he saw an old man preparing his fields for planting. He had hollowed out an opening by which he entered the well and from which he emerged, lugging a pitcher, which he carried out to water the fields. Grunting and puffing, he used up a great deal of energy and produced very little result.

“There is a machine for this sort of thing,” said Tzu-kung. “In one day it can water a hundred fields, demanding very little effort and producing excellent results. Wouldn't you like one?”

The gardener raised his head and looked at Tzu-kung. “How does it work?”

“It's a contraption made by shaping a piece of wood. The back end is heavy and the front end light

and it raises the water as though it were pouring it out, so fast that it seems to boil right over! It's called a well sweep."

The gardener flushed with anger and then said with a laugh, "I've heard my teacher say, where there are machines, there are bound to be machine worries; where there are machine worries, there are bound to be machine hearts. With a machine heart in your breast, you've spoiled what was pure and simple; and without the pure and simple, the life of the spirit knows no rest. Where the life of the spirit knows no rest, the Way will cease to buoy you up. It's not that I don't know about your machine—I would be ashamed to use it!" (Chuang Tzu, *The Complete Works of Chuang Tzu* (tr. Burton Watson), New York: Columbia University Press 2002, ch.12, p.134)

This beautiful and very substantial passage is from one of the "outer" chapters of the Chuang Tzu (originating with the philosopher Chuang Tzu and dating back as a whole to between 4th and 2nd Century BCE). This passage is certainly not easy to interpret; here is one way to understand some of it. The use of technology, even at a very basic level, changes our attitudes. Not only do we think more and more about whether technology is working the way it was designed to work but we also start to be worried about eventual malfunction. We worry instead of keeping our cool and letting things happen as they should or would otherwise. We are losing the pure and simple, the dao. I won't even try to say anything about what is meant by the "dao" or even the "pure and simple". However, the Chuang Tzu resonates very well with some thoughts about contemporary times. One danger of technology is that it makes people worry too much about functionality and possible malfunction. What is dangerous about this is that we might be led to stop thinking about more important questions: What is the point of any given piece of technology in the first place? What role should or can it play in our lives? How should we live in the first place? Technology comes with the temptation to let these questions drop out and "cultivate" a function-oriented mind which focuses on means and lets the ends slip out of sight (see also Horkheimer, *Eclipse of Reason*, ch.I). This seems important to me. By the way, I want to leave the question open here whether technology is or can be ethically neutral – whereas its use is up for ethical evaluation. Chuang Tzu or the Frankfurters thought that it isn't neutral. I suspect that some types of technology might be neutral whereas others might not be.

## I.b: Freedom and Domination

There are also questions about freedom and domination here. Technology is meant to put us in charge - and in many ways it has but in many ways it is also the other way around. To consider a rather mundane example: How dependent are we on our cell phones? And on every new app that we think we need? How many of us sleep next to a cell phone, ready to jump when it rings? So: Do we own our cell phones or do they own us? The irony of changing the roles of user and tool, or ruler and ruled has been brought up many times since the Chuang Tzu: one could think of Goethe's poem on the sorcerer's apprentice. Or one could think of the Frankfurt School, too: "Domination of nature involves domination of man." (Horkheimer, *Eclipse of Reason*, 93). And: domination of nature involves domination of oneself as well as of others (see Horkheimer and Adorno, *Dialektik der Aufklärung*).

I must say that I find the Frankfurt view less than compelling. First of all, it is not clear in what sense nature can be dominated. Isn't domination a relation between agents? But nature is not an agent with beliefs, desires and intentions. One thing we should not do when thinking about nature is to anthropomorphize it. People often quote Francis Bacon here, as one of the chief ideologists of domination over nature: "For you have but to follow and as it were hound nature in her wanderings, and you will be able, when you like, to lead and drive her afterwards to the same place again. ... Neither ought a man to make scruple of entering and penetrating into these holes and corners, when the inquisition of truth is his sole object - as your majesty has shown in your own example;" (Bacon, *Of the Dignity and Advancement of Learning*, books II-III, 412, 413). I find it hard to "follow and hound" Bacon in his wanderings. This passage is way too metaphorical and vague to help us understand what exactly could be meant by "dominating nature". Interestingly, the Old Testament, more precisely: the Torah or Pentateuch is clearer: "And God blessed Noah and his sons, and said unto them, Be fruitful, and multiply, and replenish the earth. 2 And the fear of you and the dread of you shall be upon every beast of the earth, and upon every fowl of the air, upon all that moveth upon the earth, and upon all the fishes of the sea; into your hand are they delivered. 3 Every moving thing that liveth shall be meat for you; even as the green herb have I given you all things." (1 Moses 9, 1-3). There seems to be a divine command of exploiting non-human animals.

What complicates things is that there are other passages, too: “And the Lord God took the man, and put him into the garden of Eden to dress it and to keep it.” (1 Moses 2, 15) This sounds much more like the idea of stewardship over nature. It is interesting in this context that Lynn White who famously traced our ecological crisis to main Christian traditions but then also felt moved to add that same tradition contains ecology friendly figures like Francis of Assis (see Whyte, *The Historical Roots of Our Ecological Crisis*). Apart from all this ambiguity, there is also a good reason to think that there are more tangible – social and economic - factors which explain our ecological crisis.

And why does domination of nature, or better: the use of technology involve self-domination? It seems the Frankfurters thought of Freudian ideas about the repressive super-ego but does this entail the dominator and dominated are one and the same? Isn't domination essentially an asymmetric relation between two different agents? And how does self-domination follow from domination of nature? Is it that we must pull ourselves together, be disciplined in order to use technology? This is certainly true but training, vigilance, discipline seems part of human life, no matter whether or to what degree we use technology or not.

Finally, I have never found a compelling or good argument in Horkheimer and Adorno or elsewhere that explains how domination of nature involves domination of other people. I think the social relevance of technology should be located elsewhere (see below).

What can we take from all these ideas about domination of nature? I think one important point is one Chuang Tzu already made, and much more beautifully than the other authors quoted above: The use of technology can lead to a reversal of roles: Instead of controlling the tools we become more and more dependent - not on them (they're not agents) but on our use of them and servicing of them. A change of attitude is necessary here. How this can be brought about, I have to leave open here.

Perhaps even more salient than the above problems of technology are the different kinds of damage technology or its use is inflicting on our living conditions and on nature. Climate change is not the only one but probably the most dramatic one at the moment. In the following I propose to deal with the question what we can or should do about it. More precisely, I propose to look at the aspect of social justice in our reactions to climate change.

## II. Climate Change and Social Justice

It is uncontroversial amongst those who care about the facts that we are already undergoing drastic and very serious anthropogenic climate change. Detailed predictions seem very hard to make but it seems that without drastic measures very soon, millions of people will lose their lives which they would otherwise not have lost; according to some there is even a (small) chance of the extinction of humanity. And all this doesn't even mention severe damage to fauna and flora. Given our abilities and possibilities today, only drastic reduction of emissions can prevent the worst. This raises the following question: Who ought to do what? What does justice demand?

One might think that with our long traditions of ethical theories we just need to apply the correct ethical theory (as if we had it already and knew which one it is!) to this case. However, it rather seems that climate change poses new ethical problems which require new answers or rather strong modifications of older answers.

One principle is one of historic responsibility. Those who bring about a damage have an obligation to repair it (as much as they can). Among recent theorists of social justice, Robert Nozick is very close to this idea (see Nozick, *Anarchy, State, and Utopia*). This idea is, perhaps, best applicable, in interactions between specific individuals. Climate change is mainly due to the practices of industrialized countries of the northern hemisphere over the last centuries. The problem is that we cannot trace climate change in any useful way to specific individuals; we can trace it to social, economic and cultural structures but these entities are not agents with moral responsibility. Should we talk about the responsibility of nation states? Similar problems arise here. Should we make the major polluters (firms and corporations) responsible? One problem with that is that many others have benefitted from and supported this system. Don't they also have responsibility?

Apart from this, the causes of global climate change reach further back than its evidence-based discovery in the 1970s. Can someone be responsible for bad effects when the causes happened at times when people didn't know or couldn't know that the effects of their actions are so bad? Another temporal complexity: What are the responsibilities of current generations for the ecological sins of their ancestors? Can one

inherit obligations from the past? Sure, one can point out that current generations in countries of the North have benefited from the actions of their ancestors (economic development, etc.). But this doesn't explain enough. How should one measure and weight against each other benefits and damage done? Apart from that: not everyone in the main polluting (per capita) country on the planet, the US, has benefitted or benefitted equally from past practices. One more problem with time: As it continues, the crisis becomes more and more serious. Doesn't justice (or backwards discounting) demand that later polluters have to take more of the burden than earlier ones? Does the duration of pollution play a role?

Intuitively plausible as the idea of historic responsibility is, it seems very hard to apply to the question of who should do what about climate change. On the other hand, we cannot easily give up on this idea of responsibility. This is a first conundrum of the ethics of climate change: one of the applicability of the idea of responsibility.

There are, of course, other types of ethical considerations relevant here. It is often pointed out that "underdeveloped" countries also have a right to or deserve to develop industrially, especially because they typically have suffered from a long history of exploitation and injustices of all kinds. On the other hand, one has to wonder how much ecological room there is for a traditional path to industrialization for the global South? This is another conundrum of the ethics of climate change: one of the problems of historic desert. How about the idea of equality? Isn't this a major ethical ideal? First, one has to reiterate Amartya Sen's basic question here: Equality of what? (see Sen, *Inequality Reexamined*). Certainly, egalitarians cannot have in mind that every country should take the same burden (per capita) of fighting climate change. But what would equality demand then in our case? Rawls' idea that inequalities are only justifiable if they are to the benefit of the worst off groups (see Rawls, *A Theory of Justice*) is also hard to apply here. This is the third conundrum of the ethics of climate change: the complexities of equality.

So far I have only talked about present generations. But it seems very plausible to assume that we do have obligations to future generations (perhaps even to past generations?). We seem to have the obligation to leave an inhabitable planet behind for future people. Aren't there demands of intergenerational justice? This relatively new area of the theory of justice is amazingly complex. One nasty problem is the so-called

non-identity problem (see Parfit, *Reasons and Persons*, part IV). The policies we choose today has a great influence on which humans will come into existence in the future. How then can our current generation harm a future generation if most of the members of the future generation would not have come into existence had we pursued a different policy? I don't want to go further into the non-identity problem and just flag up this fourth conundrum of the ethics of climate change: one of the intractability of intergenerational justice.

All this suggests that we just don't have a full blown theory of justice yet. In general, theories of justice are not at hand to be applied to cases before problems appear but rather develop with the problems that we're facing at different historical stages. And it seems that they can hardly keep up with the pace. However, the puzzles involved with the venerable ideas of responsibility, desert, equality and intergenerational justice should not discourage us. That we don't have and perhaps cannot have a perfect theory of justice (see, e.g., Sen, *The Idea of Justice*), doesn't mean that we should stop thinking seriously about justice. Perhaps we cannot ever have perfect justice; moreover, perhaps the idea of justice as an ideal solution to problems without any remainders is just unrealistic and basically misguided. But again, this does not mean at all that we should stop aiming at the more rather than the less just. Even if there is no perfect justice (not even a coherent idea of it) we can still have pretty good and pretty much justice.

So, what would I propose as an answer to the ethical question of what to do about climate change? Let me cut the Gordian knot but without claiming that I am presenting a theory or that the strongest reasons are already on my side. Utilitarian considerations can push one to saying that even an unjust solution to the problem of climate change is better than disaster dictated by justice (if that is possible). But fortunately, the chances of a somewhat or sufficiently just solution are not beyond us. How about distributing the burdens of fighting climate change according to (a) the ability to pay, and (b) the ability to take reductions? For purely pragmatic reasons, one would have to consider nation states as the main entities and hope that the burden is distributed in a fair way domestically. Furthermore, there is also an ethical obligation to help and support those most in need. I don't claim that this isn't very rough and far from perfect. But I do think that the criteria of ability and need can be justified to everyone, at least to everyone who

is willing to find a just solution.

A whole different question, of course, is what strategy can have success in the real world. Let me end with some very brief remarks on some of the causes of our crisis and correspondingly: on what can or should be done. First, there is capitalism, an economic system that in itself and in its pure form seems incapable to regulate economic competition in an ecologically sustainable way. Regulations like enforcing good environmental laws, relevant restrictions of the relevant property rights, carbon taxes, support for ethical consumerism, strong investments in green technologies, and all that in a socially equitable way seem necessary. Similar things hold for economies that are not capitalist in a traditional sense (think, e.g., of state capitalism or communism). Unregulated capitalist economies support short-sightedness and practices that hurt the common good. Whether a certain degree of regulation is still compatible with capitalism or turns it into something else (socialism) is another question that I can leave aside here. There is also the problem of national egoisms: but there might be a chance that some cooperation is going to be recognized as in the common interest of different nations. We are dealing with prisoners' dilemmas at national as well as international levels; only the escape from narrow individual self-interest can help here (for other aspects of the global "moral storm" see Gardiner, *A Perfect Moral Storm*). Finally, as much as we may support the idea of democracy: current democratic systems have strong incentives for politicians to be short sighted and in defense of particularist interests. We also need a better democratic practice. Where can we find that? Let us look around, there are differences between better and worse.

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