Towards the best future for humankind

ZIPAR WHITEPAPER

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About ZIPAR

The Zurich Institute of Public Affairs Research is devoted to identifying and addressing the major challenges for humankind in the short-term, in the medium-term, and in the long-term future. ZIPAR is an independent nonprofit think tank based in Zurich, Switzerland.

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Abstract

Humankind is facing major technology-related challenges in the short-term, medium-term, and long-term future. Those challenges will have a profound impact on humankind's future progress and wellbeing. In this whitepaper, we outline our understanding of humankind's future challenges, and we describe the way in which we work towards identifying as well as managing them. In doing so, we pursue the overall goal of ZIPAR: We want to make the best future for humankind (ever so slightly) more probable.

Contents

1	Human civilization has come far – but it remains fragile	5
1.1	Our mission	6
2	The major challenges of tomorrow	6
3	Short-term challenges	8
3.1	Democracy	8
3.2	Digitalization	9
3.3	Automation and AI	9
4	Medium-term challenges	9
4.1	Biology	9
4.2	Energy	10
4.3	Social order	10
5	Long-term challenges	11
5.1	Existential risks	11
5.2	Space colonization	11
5.3	Pan-human governance	12
6	Instrumental meta-challenges	12
6.1	Democracy	12
6.2	Science and knowledge	12
6.3	Rationality	13
7	The goals of ZIPAR	13
7.1	Identifying challenges: Analysis and awareness	13
7.2	Addressing challenges: Solutions and policy	14
7.3	Our guiding principles	14

1 Human civilization has come far – but it remains fragile

Humans have come a long way. From our humble beginnings some 300 000 years ago [1] and the beginning of modern civilization some 10 000 years ago [2], we have developed into a civilization that deserves to be called advanced. There are a number of reasons for that.

Over the course of our history, we have experienced tremendous *moral progress* [3, 4]. Over the past several centuries, we have dramatically expanded our moral circle: We do not only care for ourselves and our immediate kin anymore. Instead, we have extended our moral concern to all humans as well as to other sentient animals. We have also made great progress when it comes to the social structure of society. There was a time when social order was solely determined by power and authority: Whoever was king or emperor or prophet or dictator was in charge, and others had to subject to that absolute power. In the recent history of our civilization, we have begun making the transition to a more rational principle of societal structure: *Democracy*.

Our moral progress has been accompanied by an equally impressive *epistemic progress*. Over the centuries, our rational understanding of the world as well as our tools and methods for furthering our understanding of the world have tremendously expanded. The scientific revolution of the 16th century laid the groundwork for modern science, the systematic enterprise of examining and understanding the world in as rational a manner as possible. The fruits of our epistemic progress are not only intellectual, but very practical as well: Since the industrial revolution of the late 18th century, humankind is experiencing a veritable explosion of technology.

The consequence of our moral and epistemic progress is very clear: The world is becoming a better place. As a matter of fact, the average human today enjoys a quality of life that is much higher than anytime before in the history of humankind. Humans today experience less violence, less disease, less hunger and enjoy better education, better healthcare, and more options to pursue happiness than ever before [5, 6].

Yet, even though the world has become better over time, there is no guarantee that our civilization will continue on this trajectory of progress and increased wellbeing. Just because things have developing in a relatively good manner so far does not mean that this positive trend will continue to be the case. Indeed, to believe that our civilization is anything but fragile is a dangerous fallacy: The fact that we have reached our current moral and epistemic level is not preordained in any way. It is the result of innumerable efforts throughout history by individuals, organizations, governments, and societies (and, to some degree at least, luck also

played a role).

In order to safeguard the progress and the future wellbeing of humankind, we need to continue these efforts and address today the major challenges of tomorrow. If we fail to do that, the future of humankind might look very bleak, because the challenges humankind is facing are greater than ever before.

1.1 Our mission: Working towards the best future for humankind

We believe that human civilization is worth fighting for. The challenges humankind is facing are greater than ever before, and making sure that humankind has as positive a future as possible requires work – we cannot just hope for the best.

Our goal at ZIPAR is to contribute to the best future for humankind. We do this by identifying the major challenges humankind will be facing in the future, and by working towards solutions for those challenges.

2 The major challenges of tomorrow

We live in exciting times. The world is changing profoundly and rather quickly, not least because technology – all the practical tools created on the foundation of scientific knowledge, from airplanes to medical treatments to the internet – allows us to do things we might not have dreamed about even a few centuries ago. At the same time, these are times of great challenges. The profound technology-related societal developments and disruptions that are currently underway or will take place in the not too distant future carry the promise of great leaps forward, but they can also result in outcomes that are *detrimental* to the overall progress and wellbeing of humankind.

In order to think about the major challenges that lie ahead, it is useful to apply a heuristic for the relevant time-scales in which we ought to think. Instead of merely speaking of the future, we speak of the short-term, the medium-term, and the long-term future of humankind. The concepts of *short-term*, *medium-term*, and *long-term* are fundamentally relative, of course. Our timescale for these time periods is anthropocentric; we define our time scale relative to the average human lifespan.

In this understanding, the *short-term future* can be thought of as the rather immediate future of around 15 years from the present. The short-term future is the future that all of us will likely live to see and experience. In our heuristic, we regard the *medium-term future* as the time at around the turn of the 21st century. In a rough sense, the medium-term future is the future that we might not live to

see, but that is close enough that, for example, our children will see it. The turn of the 21st century as an absolute marker is merely symbolic, of course. More generally, the medium-term future can be thought of in terms of the average human lifespan: Today, biological humans live to the age of around 80 years, and the medium-term future is defined correspondingly as the future in about 80 years from now. The *long-term future*, in turn, is the future that lies beyond the average human lifespan. In practical terms at the time of the writing of this document, this would mean that the long-term future is the time after around the year 2100.

Challenges that lie in the short-term, in the medium-term, and in the long-term future are challenges that we can do something about. More than that: Our actions today will determine the outcomes of future challenges.

Figure 1: Visualization of the impact of today's actions on the outcomes of future challenges.

The fact that our actions today have an impact on the outcomes of future challenges is the primary motivation behind ZIPAR: In order to increase the probability that future challenges turn out as well as possible, we need to actively address them today.

We believe that the outcomes of future challenges are not only affected by our actions today. They are cumulative in nature: How short-term challenges turn out has an impact on medium-term challenges; the outcomes of both short-term and medium-term challenges, in turn, have an impact on long-term challenges.

Figure 2: The cumulative nature of future challenges.

This is the second part of our view of future technology-related challenges

of humankind: Future challenges are not isolated, but they can affect each other. When identifying challenges and devising courses of action, we adopt this kind of cumulative impact perspective.

There is no finite and fixed list of specific challenges that humankind is facing in the short-term, medium-term, and long-term future. On the contrary: Identifying challenges is part of our foundational work at ZIPAR. Some developments and problems that we currently identify as major challenges are described in the following subsections.

3 Short-term challenges

Some of the major short-term challenges we currently identify are *democracy*, *digitalization*, and *automation and AI*.

3.1 Democracy

Democracy is the philosophical idea that a just and justifiable system of governance is one in which all people are regarded as equal and in which they collectively make decisions. That is the basic idea of popular sovereignty. There was a time in the not too distant past when the Soviet Union collapsed when it seemed that democracy was about to spread to all other parts of the world. Famously, the term «end of history» [7] had been coined to describe the imminent win of democracy. Today, we know that these hopes were premature. Flawed democracies and non-democratic systems are still prevalent all over the world. Even more than that: Democracy is facing great challenges in Western countries that have been democratic for a long time. Democracy is under stress, in part because our public discourse is becoming less rational, and with it, the epistemic quality of democracies is eroding [8]. New forms of political discourse that openly embrace irrationality are on the rise, and some populist political actors successfully operate with that kind of irrational fervor. Anti-democratic actors and countries, through soft power, propaganda, and disinformation, are promoting their authoritarian models as superior to the democratic model of liberal democracy. Democracy is at a turning point. We need to find ways of stopping authoritarian attempts at undermining democracy, and we need to strengthen and improve our democracies in order to make them more inclusive and more responsive to the needs of all people.

3.2 Digitalization

Digitalization is a megatrend that began with the rise of computers in the 20th century. In its most basic form, digitalization means that some process that used to be performed in some analogue form is now being performed digitally. However, today's digitalization has profound effects on society and, more specifically, on human interaction. Digitalization is continuing to create many new astonishing ways of interacting and of pursuing goals in all domains of life. At the same time, however, many of the new possibilities that digitalization creates can have negative outcomes. For example, the rise of social media platforms such as Facebook and Twitter and the possibility for people to create user-generated content such as comments on news media websites means that citizens today can take part in public discourse in a way that was not possible before the 21st century. These new possibilities for participating in political discourse, however, can be usurped by political actors who want to disrupt public discourse by creating disingenuous activity as a form of subterfuge [9].

3.3 Automation and AI

Automation and AI is closely related to digitalization. Artificial intelligence (AI) is an umbrella term for software-based technology that is able to incorporate stimuli from the environment in order to achieve goals. Even though AI is very different from human intelligence (so far, AI is domain-specific, whereas human intelligence is domain-general), AI will have tremendous societal impact in the short-term future. Applications such as autonomous cars or autonomous weapons or autonomous medical diagnosing and many others raise the possibility of potentially great benefits. At the same time, they create new and sometimes unforeseen risks that need to be addressed, such as potential mass unemployment [10, 11], large-scale security risks [12], or active malicious use of AI [13].

4 Medium-term challenges

Some of the major medium-term challenges we currently identify are *biology*, *energy*, and *the social order*.

4.1 Biology

Humans are fundamentally biological beings. We are born into the world, we need sustenance in order to survive and develop, we ward off disease the best we can, and eventually, we die. We will remain biological beings in the foreseeable future, but some aspects of our biology will profoundly change in the medium-term

future. An indirect aspect of our biology, the way we produce food, has remained essentially unchanged for thousands of years, but a more sustainable food production will require post-agricultural innovations [14]. More direct aspects of our biology are also bound to change in the medium-term future. For example, thanks to scientific innovations such as CRISPR [15], profound changes to the human genome are increasingly within our technological reach. Interventions into human biology might go as far as profound cognitive enhancement [16] and the indefinite extension of our biological lifespan [17]. All these direct and indirect changes of our biology hold the potential to tremendously increase the quality of life of humans, but they also contain enormous risks.

4.2 Energy

Our civilization needs *energy* to function. Indeed, our need for energy and the ways in which we procure the energy we need are remarkable traits of our civilization [18]. Even though there is plenty of energy in the universe, producing and using energy at our current technological level is difficult, and humankind is facing a number of energy-related challenges even in the short-term future [19]. In order for our civilization to prosper in the medium-term future, we will have to explore reliable and sustainable sources of energy that we do not have yet today, such as nuclear fusion [20, 21] or even projects such as the Dyson sphere [22].

4.3 Social order

As noted above, history seemed to converge on a universal social order for humankind as the Cold War ended: A combination of liberal democracy and free-market capitalism [7]. However, developments since the turn of the millennium increasingly make the future of this social order uncertain. One global trend since the early 2000s is the rise of political authoritarianism combined with state-controlled capitalism [23]. The challenge of the future of the social order is not limited to observing current trends. We also need to ask ourselves what the most desirable future order is, and how we can work towards achieving it. This challenge has at least two layers or levels: A foundational layer of political and moral principles, and a second, more fine-grained layer of implementation and realization. For example, an implementation-level question is whether a universal basic income is desirable and practically possible within a democratic and capitalist system. A foundational-level question is whether it will ever be physically possible to achieve a true post-scarcity economic system in which any demand can be satisfied at essentially zero cost.

5 Long-term challenges

Some of the major long-term challenges we currently identify are *existential risks*, *space colonization*, and *pan-human governance*.

5.1 Existential risks

Humankind is the result of «accidental» evolution. There is no higher purpose to our existence, and there is no guarantee that very bad things will not happen to humankind. In a way, we know that, because in the past, very bad things have been happening to humankind (think of, for example, the plague). In our history so far, catastrophic events or outcomes of events have never included all humans. But those kinds of risks that could have a terminally negative outcome for all humans also exist. They are referred to as *existential risks* [24]. Existential risks can be divided into natural and anthropogenic existential risks. Natural existential risks are risks that we human have not created, such as giant comets or asteroids that might crash into Earth. Anthropogenic existential risks, in contrast, are existential risks that we humans have created. Perhaps the most prominent example are nuclear weapons, but given today's rapid pace of technological progress, the number of existential risks is growing (rogue artificial intelligence, antibiotics-resistant bacteria, climate change, contact with hostile extraterrestrial intelligence, and so forth). Identifying and addressing existential risks is a high priority in order to ensure the long-term wellbeing (and existence) of humankind.

5.2 Space colonization

One way in which humankind can reduce the overall probability of extinction is *space colonization*: When we establish permanent and self-sufficient human habitats beyond Earth, some catastrophic and terminal event on Earth might not end all of humankind. There are other reasons, of course, why humans yearn for space colonization. The history of humankind is in many ways the history of exploration and of conquering the unknown. It is difficult to imagine any long-term future of humankind in which we are still confined to our one and only permanent habitat, planet Earth. However, space colonization poses a number of problems. Who, exactly, is allowed to colonize space? Only democratic countries, or authoritarian ones as well? Do planets and moons in our solar system belong to all of humankind? If so, should private companies be allowed to engage in space colonization? And how do we make the leap from today's primitive space exploration technology to technology that allows us to create permanent habitats? Space colonization is riddled with practical political and moral problems, and we

need to find solutions today, not least because good solutions today will serve as incentives in the future.

5.3 Pan-human governance

Once humankind has established some permanent habitats beyond Earth, two important questions arise: How should those habitats be governed, and what is their relationship to the rest of humankind? In other words: Space colonization raises the question of *pan-human governance*. In the initial stages of space colonization, it is imaginable that habitats in the solar system, such as a colonized planet Mars, will have the status of an outright expedition or colony, either fragmented in accordance with Earth countries, or governed unitarily through some international body such as the United Nations. However, it is very likely that future human colonies beyond Earth will wish for some degree of independence, probably sooner rather than later. A peaceful pan-human governance will therefore probably take the form of something like a federation or commonwealth: Each (sufficiently large, for example) habitat should have the option for independence within a framework of pan-human democratic governance.

6 Instrumental meta-challenges

6.1 Democracy

Democracy is among our currently prioritized short-term challenges for humankind. But democracy is important to us in a more general way: In order to successfully address any of the future challenges humankind is facing, we need democracy. Democracy provides the only political framework within which rational and justified decision-making can take place. The future challenges of humankind are not merely technological in nature, but very much political and moral. In order to arrive at sound judgements on these issues, we need to operate within democratic frameworks – no other kind of decision-making framework can be justified in and of itself, and no other kind of decision-making framework provides the same set of necessary epistemic and moral parameters as democracy. Democracy is a precondition for successfully addressing the major challenges for humankind, which is why safeguarding and improving democracy is a highly effective measure for increasing the future wellbeing of humankind.

6.2 Science and knowledge

Epistemic progress of any kind is only possible if the way we generate knowledge actually works. From an epistemological point of view, this means that we have to

be willing to justify our beliefs and update them in the face of new evidence. Form a procedural point of view, we have to formalize a way of generating knowledge that is both systematic and unbiased. These two goals, the epistemological and the procedural one, form the foundation of science, the enterprise of rational inquiry about the world. However, science can be affected by pressures and biases, both from within and without. For example, the so-called replication crisis in science is caused (among other factors) by widespread use of erroneous methodological and statistical procedures [25, 26], a publication bias whereby “positive”, “big”, “significant” etc. findings are much more likely to be published [27], and a publish-or-perish pressure to conform to flawed norms of scientific research and publishing [28]. These and other biases within science negatively affect the quality of the knowledge that is being produced; at worst, they lead to the widespread adoption of inaccurate or even completely false beliefs. Biases within science, humankind’s main knowledge-generating apparatus, ultimately mean that it is more difficult to successfully identify and address major challenges for humankind because the knowledge required to do so is flawed.

6.3 Rationality

In order to successfully manage the major challenges that humankind is facing, the way we form beliefs and the way we make decisions need to be as rational as possible. We need to hold beliefs that are as accurate and as precise as possible relative to reality, and we need to make decisions that achieve our goals as much as possible. Unfortunately, human belief-formation and decision-making tends to be systematically *irrational*, due to factors such as cognitive biases [29] and motivational problems of (long-term) goal pursuit [30]. Even though completely eliminating human irrationality is unrealistic, we can work on improving rationality in domains and in decision-making situations that are highly consequential.

7 The goals of ZIPAR

The goal of ZIPAR is twofold: We want to *identify* major challenges of humankind, and we want to *address* those challenges. By doing so, we want to increase the overall probability that the future of humankind is the best future it can be.

7.1 Identifying challenges: Analysis and awareness

Identifying and prioritizing challenges for humankind is an ongoing process that can be described as foundational in nature. Some of that foundational work is

directly empirical in nature, for example in the form of original research, experimental and otherwise. Our foundational work can also be more philosophical in nature, or it can have the characteristics of review articles that synthesize existing research and other literature on some issues. Even though our research is generally scholarly in nature, we actively avoid the traditional academic labels such as specific disciplines. Our work can be generally understood as a combination of philosophy, social science, and the humanities in terms of *modus operandi*, but not in terms of content and format. Even though we actively participate in academic discourse through some of our more traditional research activities (scientific studies), we primarily want to address the public and policymakers. In other words: Our work is scientific and evidence-based, but our goal is not to talk merely to the scientific community.

The instrumental goal of our foundational work is to build awareness and put the challenges of humankind on the public agenda. In that sense, our primary stakeholder is the public, and we want to stimulate public discourse positively, so that the major challenges of humankind receive greater attention.

7.2 Addressing challenges: Solutions and policy

A second important stakeholder of ZIPAR are policymakers. The people in charge of crafting rules and regulations for the present and for the future are the ones who need to be aware of humankind's major challenges and of rational ways of dealing with them. For that reason, an important part of our work is not only to describe major challenges, but also to propose policy solutions to those challenges, or at least rational guiding principles for future policy solutions. Crafting good policy is no guarantee that future challenges will result in good outcomes, but good policy can increase the probability that the outcomes of future challenges are as positive as possible. This probabilistic impact of policy is visualized in Figure 3.

Working on solutions and on policy is the second major part of our work: On the basis of our foundational work, we analyze and devise possible ways of dealing with future challenges through policy. In our view, policy plays a major role for humankind's future. Good policy cannot guarantee good outcomes in the future, but it can significantly increase the probability of good outcomes in the future.

7.3 Our guiding principles

ZIPAR alone will not solve all future problems of humankind, but we believe that our work can contribute to the future wellbeing of humankind in a meaningful, non-trivial way. For that reason, it is of utmost importance that ZIPAR remain

Figure 3: The probabilistic impact of good policy on good outcomes.

categorically independent. More specifically, our work is guided by the following principles:

- *Freedom of research.* We will never let our work be biased or otherwise influenced by special interests of any kind. Our work will never be corrupted in any way.
- *Transparency.* We will never accept any kind of donation, monetary or otherwise, in secret. We will never let our work be guided or influenced by undisclosed factors of any kind (that would also violate our commitment to freedom of research).
- *Not-for-profit.* We will never be motivated by and we will never pursue pecuniary goals and interests for any kind of personal gain.
- *Independence.* We will never be affiliated with or work on behalf of any special interest or any political, religious or other kind of ideological group or organization.

Even though we are a thinktank, we are a thinktank *sui generis*. Unlike many (perhaps even most) thinktanks, we are *not* controlled or funded by special interests in order to create a veneer of legitimacy for those special interests. We are categorically independent and driven only by our one goal: Making the best future for humankind more probable.

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