

REFLECTION; there is a major issue that is happening right under our nose

Changes and innovation are set in motion by people who believe that the world can be not only different, but better.

*May 2024, Arie Voorburg*

This reflection is composed with 'a little help from my friends', shared our diverse perspectives and experiences and. The REFLECTIONS' do not make for feel-good reading. It raises awkward questions about the relationship between economic growth, inequity, DeepTech, resources and geopolitical shifts. Changing geopolitics and shifting powers concerns economic, fiscal and monetary policies, trade and investment flows and political developments on a national and international scale. These factors confronts society with present and future moral and ethical challenges.

The present meta-crisis made of growing existential precarity across our societies, life-threatening climate change, entrenched poverty, gaping inequality, reckless tax evasion or declining biodiversity is undermining the sustainability of our societies. Fear about what the future will hold in such a crises-ridden world is spreading among citizens. Nationalist and extremist political movements are capitalising on this fear, threatening the very foundations of our democracies, of our values and of the European Union.

The meta-crisis we face can only be overcome through a comprehensive, complex and ambitious set of policies aimed at fundamental change. From economic and social policy to climate and ecological policy, from national to European and global policy action, there is a need for pathways out of today's crises-ridden societies into a different future of regenerative well-being.

## CHANGING WORLD

Biologically, there is nothing remarkable in the fact that humans are agents of ecological change and environmental upset. All species transform their surroundings. What is remarkable, however, is the stunning speed of human adaptation relative to other species, and that our adaptation is self-directed. From sonar and flight to disease immunity, humans can evolve exquisite new traits in a single generation.

It can be said that the world is in an era of drastic change. As the economy grows, life is becoming prosperous and convenient, the demand for and shortages of energy and food and water is increasing, lifespan is becoming longer and the aging society is advancing. In addition, the globalization of the economy is progressing, international competition is becoming increasingly severe and problems such as the concentration of wealth and regional inequality are growing. Social

problems that must be solved in opposition (as a tradeoff) to such economic development have become increasingly complex. Planetary-scale environmental forcing by humans continues and individual Earth system components are, to an increasing extent, in disequilibrium in relation to the changing conditions. Six of the nine Earth's biophysical and biochemical boundaries are transgressed, suggesting that Earth is now well outside of the safe operating space for humanity.

The present conflicts are not isolated events, but a symptoms of the deeper crises that afflict our global civilisation in the Anthropocene. The root causes of war are complex and intertwined, involving political, economic, social, cultural, and psychological factors, as well as the pressures of population growth, resource depletion, climate change and environmental degradation. These challenges require systemic and holistic responses, not military interventions that only exacerbate the problems and create new ones. A call for a radical transformation of our values, institutions, and behaviours towards a culture of cooperation, compassion, and care for all life on Earth

In retrospective of the Earth System, Global Politics and Economic Masterclasses; the world we live in faces several ecological, social, cultural, economic, political crises. The climate crisis that has long been announced but not been taken seriously by political decision-makers is showing its devastating effects all over the globe. The extinction of species is progressing, environmental pollution has reached unprecedented proportions. The destructive and exploitative relation of humans with nature is producing an imminent collapse of ecosystems. Social relations are marked by inequality and have worsened in almost all countries, and especially in the Global South and further exacerbated the social crisis. Financial and economic crises fuel each other. The promises of ever-growing wealth for all have turned out to be a chimera. The foundations of life for human beings and other creatures on this planet are at extreme risk. It is becoming obvious that the hegemonic (economic and political) model has failed and that a fundamental system change is needed.

Economic development can and should contribute to the fulfilment of natural, social and cultural rights. Today, however, the global economy often exploits and exhausts human and non-human nature; it perpetuates inequality on a massive and increasing scale. It seems at best naïve to continue to rely solely on free markets, corporate self-interest and large-scale technology, considering the role they have played in creating the problem. The capitalist economic system is one major root cause of multiple crises. In this light the economy clearly is one important sphere of transformation and we urgently need to find new ways of organising it. As the need for a socio-ecological transformation becomes more and more apparent, the question of viable alternatives to the capitalist economic system arises; alternatives that meet the needs and rights of billions of people and ensure justice and peace while also respecting the boundaries of our planet. Approaches and experiences of

communities struggling against or overwhelmed by modern economic expansion need to be given greater consideration in the debate.

Naturally, the economy is not the only sphere where fundamental change is needed.

#### GONE ARE THE RELATIVE STABILITY AND PREDICTABILITY

Humans are now living within a period of the Earth's history appropriately named the Anthropocene. The name is derived from the observed human influence and indeed increasing dominance of climatic, biophysical, and evolutionary processes occurring at a planetary scale. The issue of human dominance is not simply climate change (as bad as that is), it is the whole capitalist development paradigm that is at the dark heart of maldevelopment—that which undermines and destroys the very foundations of all life on earth. Life is characterized by uncertainty, unpredictability, genuine chaos, and relentless change. Planetary distress is manifest in global warming, changing climates, erratic weather, acidifying oceans, disease pandemics, species endangerment and extinction, bioaccumulation of toxins, and the overwhelming physical impact of exponentially expanding human development.

Deep societal transformations occur at specific moments in history when underlying changes lead to tipping points that necessitate systemic change. Society is a historical tipping point. Due to a confluence of circumstances, many of the foundational social institutions upon which societies have relied for decades for stability and direction, including economics, democracy, technology, religion, gender and education are currently under stress or failing.

#### STANDING ON A THRESHOLD

The basis for many tipping point behaviours in social-ecological systems is a non-linear relationship between critical pairs of variables. Non-linearities create disproportionate relationships between cause and effect, potentially leading to change that is faster, more intense, or more extensive than expected (and hence, harder to reverse or control). Cascades are more likely when multiple variables within a given system exhibit non-linear relationships to each other. Crossing multiple negative tipping points in diverse systems increases the likelihood of (partial or localised) societal collapse.

In the vast tapestry of human history, we have witnessed the evolution of societies—each iteration marked by significant technological advancements, cultural shifts and changes in the way societies interact and organize. From hunter-gatherer communities to agrarian societies, from industrial revolutions to the digital age, humanity has constantly adapted and transformed. And now, on the horizon, lies a paradigm shift that promises to redefine the very fabric of our existence.

The transition is not without its challenges. It requires a fundamental shift in mindset—a departure from the paradigm of relentless growth and competition towards one of collaboration, empathy and sustainability. Governments, corporations, communities and individuals co-create a future perspective, fostering an ecosystem where innovation thrives and the collective well-being of humanity and nature takes precedence.

As we stand on this threshold we are presented with a profound opportunity—to redefine what it means to be human, to harness the full potential of technology in service of our shared values and to create a world where every individual has the opportunity to thrive. The journey ahead will be challenging, but the rewards (could be) are immeasurable. Let's embark on this transformative journey towards a future of connectivity, purpose and possibility.

AT THE MOMENT .... WORRIED, VERY WORRIED

There is a generational divide, a gender rebalancing, a struggle to redefine social and tribal identities, a complexification and reshuffling of social subgroups, a reviving localism and regionalism, a new tribalism and a new global consumer culture. Pulling in different directions, these are very human responses to life in a changing world. This shifting might lead either to social fracturing or to a new sense of pluralistic social coherence.

Frustration with inequality, poverty, exclusion and systemic inertia squeezes deeper historic tensions closer to the surface. Bottled up, longstanding feelings of powerlessness, injustice or frustration (can) erupt when evocative trigger events occur in the public domain. Sometimes dramas then acted out are corrective and sometimes they lead to chaos or to clamp-downs, yet they express deep and complex emergent dynamics. In coming decades these dramas' potency could be both a blessing because they can heal wounds and improve things and a danger because they can be distracting and damaging. Much depends on the response of authorities: one of the main triggers of uprisings is authorities' repressive reactivity. Change could happen more smoothly.

Coming decades will see further social stresses – not the class wars or liberation struggles of the past but more multifaceted and contradictory dynamics. This rising fermentation can be interpreted as a fast-track, rather painful burn-up of historic demons, clearing the way for something new and different. But it can also be destructive, cruel and nihilistic. One thing is for sure; society is approaching a moral choice point on its future.

As societies modernise, their societies and politics change while institutions tend to remain stationary. Legitimacy, governance, service delivery, social justice and sustainability become key issues.

## RETURN OF 'OLD CHALLENGES' IN A NEW CONTEXT

At present there is a focus the return of 'old' challenges and risks – inflation, cost-of-living crises, trade wars, capital outflows from emerging markets, widespread social unrest, geopolitical confrontation and the spectre of -nuclear- warfare – which few of this generation's business leaders and public policy-makers have experienced. These are being amplified by comparatively new developments in the global risks landscape, including unsustainable levels of debt, a new era of low growth, low global investment and de-globalization, a decline in human development after decades of progress, rapid and unconstrained development of dual-use (civilian and military) technologies and the growing pressure of biosphere change and impacts and ambitions in an ever-shrinking window for transition. Together, these are converging to shape a unique, uncertain and turbulent decade to come.

Social-economic exclusion, disparities, inequality etc and the resulting poverty, are complex problems that manifests themselves in many different areas of life, are multidimensional and can encompass a lack of access to employment and markets, lack of political voice and poor social relationships. The idea that economic factors alone are the foundation for advantage and disadvantage undermines the complexity and scope of disadvantage. This view also erroneously implies that economic solutions alone are an adequate response to disadvantage.

Therefore, it is not enough to examine these issues individually, the links between them and the causal chain of root causes must be explored. Poverty, for example, is a multidimensional issue which impacts on people's health, well-being as well as social and economic situation. It affects everybody, undermining regenerative economic development as well as the social cohesion bedrock to healthy societies.

Our statistics and data do not reflect the real standard of living (ie the gap between disposable income and real living costs), there is an alarming rise in key expenses (especially food, energy, housing) and the costs of growing indebtedness, the situation of the homeless or those suffering different forms of in housing precariousness, as well as older and other people in institutions.

## IN GENERAL

Economic growth has been the world's priority, at times approaching cult proportions. The world is run like a shareholder-driven corporation, not a public-interest foundation. This supports those gaining from it but it is problematic for nature and for the world's majorities. Governments, officially mediators between business and people, between self-interest and national interest, all the same tilt toward business and economic growth. Economic priorities have a socially destructive side and,

unless greater focus is given to strengthening society, humanity risks becoming less governable, more inequitable, restive, dissonant and competitive, ultimately undermining economic growth itself.

Social trust is in a process of deconstruction and reformulation. Signs are visible in today's touchy sensitivities over safety, terrorism, online and sexual abuse, shootings, violence, immigration, gender and identity politics. The thresholds of socially acceptable behaviour are shifting, a collective reactivity, vulnerability and anxiety: who are *we* and who are *they*? How much should we trust strangers, even neighbours? How much should we protect ourselves? Trust is one of today's big inflammatory issues.

Online social networking has created new contact between dispersed diasporas, minorities, special interest groups, singles and people everywhere. Online tribes and networks broaden horizons while also creating a contrary echo-chamber effect where people seek validation within their own peer-groups. But internet inadequately replaces the loyalties, support and sanctions of traditional communities which, while imperfect, at least offered a container of knowns, shared experience and common values to give people a feeling of belonging. Humanity is gradually becoming planetarised, with tribes, communities and families reformulating themselves – the world is transitional. This process started long ago and has a long way to go.

Ecological challenges will also catalyse deep and wide societal changes in coming times, since adaptation and regenerative strategies will require concerted, cooperative effort.

The aforementioned 'issues' violate human equality, freedom and value judgment, ignore human subjective feelings and impact the harmonious relationship between humans, nature and others.

A systems redesign is on the agenda; including comprehensive, flexible and people oriented approaches, national guidance and supervision, social self-regulation, symbiosis in nature-society-technology and global cooperation to standardize ethical principles and resist catastrophic risks.

It all comes down to the big question how humanity will reformulate itself in the new context of squeezed global cohabitation. Three main mechanisms are visible. The first is a shift from below, driven by generational change, individual initiatives, social movements and the NGO sector – such undercurrents are visible amongst Millennials, women, pressure groups and in movements for change. The second involves authoritarian, top-down social engineering of a kind that is also visible today – with Big Data, surveillance, automation and technocracy setting the rules. The third involves the catalytic effect of crisis, hardship and breakdown on society, forcing issues forward and obliging constructive response. Perhaps some combination of all three is likely.

## DIFFERENT SOCIETIES SEE THEIR NEXT DEVELOPMENT STAGE VERY DIFFERENTLY

Society is becoming increasingly aware that our economic approach of infinite growth is not realistic because we are bound to the limits of our planet as an ecosystem. This has led to a counter-movement that opposes the dogmas of our capitalist system because a different and more regenerative approach to growth is necessary to guarantee the future of our planet.

Social change operates differently in different contexts. Maslow suggested that needs become motivators for change only when unsatisfied. He outlined five need levels: food, water and shelter; safe and secure homes and neighbourhoods; family and community belonging and support; success, progress and respect; and realisation of our fuller potential and altruistic urges. Salaried, stable, middle-class people can aspire toward rights, tolerance and fulfilment, while people who do not know where the next meal comes from can at best aspire toward a basic sufficiency and security that middle class people take for granted.

One effect of globalisation is that millions of people are becoming more aspirational, not accepting their customary lot. Their concerns become a development motivator and then, if a society is clamped in a framework of outdated norms, rules and institutions, pressure mounts for change. Modern revolutions start with apolitical agitation amongst mostly younger people for jobs, opportunity and reasonable social rights, coming up against resistance and quickly developing into pressure on ruling regimes. Polarization puts groups in society against each other because the contradictions of these groups become stronger.

## LEFT BEHIND

Erosion of social cohesion and societal polarization has been climbing in the ranks of perceived severity in recent years. Defined as the loss of social capital and fracturing of communities leading to declining social stability, individual and collective wellbeing and economic productivity. A widening gap in values and equality is posing an existential challenge to democratic systems, as economic and social divides are translated into political ones. Polarization on issues such as immigration, gender, reproductive rights, ethnicity, religion, climate and even secession have characterized recent elections, referendums and protests.

The wealth gap has increased by the widened inflation and interest rates leading to an ongoing uncertainty for people living from month to month and the prospect of a recession is causing additional anxiety. People are grappling with these inequalities and uncertainties, both short-term and longer-term, in myriad ways. Geopolitical conflicts and power shifts, the resulting energy, food

resource prices, have added to the uncertainty, as have worsening climate / ecological related disasters.

The risk of being left behind and preclude the full participation is growing. The extent of exclusion and its outcomes depend on the economic, social, political and environmental context, including national and local institutions, norms and attitudes as well as laws and policies in place. Differences in access to education, health care, infrastructure and employment as well as inequalities in political participation are pervasive and symptomatic of social-economic exclusion. These disadvantages reinforce one another: lower levels of health care and education go hand in hand with higher levels of poverty and unemployment and often also with less voice in political and civic life. Similarly, the employment situation affects not only a person's income but also his or her participation in social and political life.

Education, health and other basic services are key determinants of opportunity and well-being throughout the life course. Despite broad progress in school enrolment, learning outcomes, child health, a healthy life expectancy etc., there are significant disparities across social groups in these indicators. In describing disparities in employment and in the prevalence of poverty, it is illustrative how access to education and other markers of opportunity affects the labor market situation and the income of different social groups.

Health is no longer just about physical well-being. Mental, emotional, financial and other aspects of health are becoming part of the conversation, broadening our collective understanding of what it means to be 'in good health'. At the same time, there is a growing realization of how connected our health is to everything around us, including our local environment and the world at large.

Due to an aging population, increasing life expectancy and technological developments in healthcare, the total demand for healthcare is increasing. As a result, healthcare costs are increasing and the affordability of the healthcare system is increasingly under pressure. Due to the greater influx into the social domain, the affordability of the welfare state is under pressure. The consequences are financial problems for healthcare providers, an increasing demand for the self-reliance of clients and a public debate about the welfare state.

Especially children growing up in more disadvantaged neighborhoods have an increased risk of poor physical and mental health, lower academic achievement compared to other students, increased risk of school drop-out, lower educational level and fewer opportunities for employment in their future lives.



From a broader international perspective, children's living conditions in Netherlands are better compared to those in most countries, but this does not mean there are no children living under economic hardship and child poverty.

This are complex and interrelated questions and progress in one domain alone will not be sufficient to end social exclusion. Although there are encouraging trends, it is evident that progress in reducing disparities in one indicator is not necessarily echoed by progress in other indicators of opportunity.

The increasing political discussions and decisions surrounding major controversial social themes increasingly lead to unrest, worry and large-scale protests in which the public seeks confrontation and opposes political power and political decisions.

## COMPETENCE & SKILLS

The social composition where children are raised has, as aforementioned, a significant impact on their development and livelihoods. Growing up in a disadvantaged neighborhood has been shown to affect educational outcomes negatively because of social, cultural and linguistic isolation, scarce institutional resources, environmental health and stress as a result of poor spatial design.

*When neurons are consistently activated by co-occurring features of experience, physical changes in the neurons strengthen the connections between and among them...Thereafter, if one of those neurons is activated, it will be more likely to activate another in that group ... Growing up in an environment of a given cultured shape brings with it a distinctive pattern of experiences and corresponding neural changes.... The synaptic changes... cannot be erased like sentences from a text... Change in the world can lead to a new pattern of strong neural connections, but it does not completely destroy earlier learning.*

It is especially worrying taking in account the needed changes in the work force from an industrial model of production to a rapidly transforming, technology-driven and interconnected globalized knowledge economy. Such an economy requires competencies suited to dynamic and unpredictable models of economic and social development.

Traditionally, cognitive competencies in critical thinking, analysis and problem solving have been regarded as key indicators for success. However, this changing economic, technological, and social contexts in the 21st century mean that interpersonal and intrapersonal skills and competencies have become much more important than in the past.

This 'next society' demands skills and competencies not just limited to cognitive elements (involving the use of theory, concepts, or tacit knowledge), it also encompasses functional aspects (involving technical skills) as well as interpersonal attributes (e.g., social or organizational skills) and ethical values.

## TECHNOSPHERE

Upon the biosphere a new sphere has evolved: the technosphere. This sphere includes all living organisms on the planet's surface and considers the influence of all techno diversity as part of the biosphere. What is most startling about this coming epoch is not only how much impact humans have had but, more important, how much deliberate shaping they will start to do. Emerging technologies promise to give us the power to take over some of Nature's most basic operations. It is not just that we are exiting the Holocene and entering the Anthropocene; it is that we are leaving behind the time in which planetary change is just the unintended consequence of unbridled industrialism. Having tech, nature and society systems operating in balance scope we can keep a building efficient, supplying energy to a smart city, ensuring that all services provided by that society in general and cities specifically are efficient and available. That is achieved thanks to a high degree of convergence between cyberspace (virtual space) and physical space (real space).

Technology has become part of our nature. It has made us who we are and continues to do so. As the essence of technology changes, its effect on mankind changes. Large-scale technology – the 'technosphere' – operates according to a quasi-autonomous dynamics. The unprecedented pace of technological convergencies and disruptions, raising concerns about navigating an undefined future, lead to anxiety. Not being able to keep up with the speed and volatility of today's technological has caused more and more people to become socially isolated. Factors such as increasing individualization and digitalization make it more difficult for socially vulnerable people to come into physical contact with others, making them feel lonely. Our interconnectedness with our devices and the fear of missing out has meant that everyone is always on. As a result, people become overstimulated more quickly and increasingly seek primary care to reduce the health consequences.

Until the most recent decades, natural and social science could regard the 'human being' as their unproblematic point of reference, with intelligent systems, the emergence of intelligent and even emotional machines, autonomous robots, enhanced humans, clones, cyborgs and drones being acknowledged as fantasies dreamed up for the purposes of fiction or academic argument. In the (near) future, this common, taken for granted fantasies will be replaced by various amalgams of human biology supplemented by technology – a fact that has direct implications for democracy, social governance and human rights, owing to questions surrounding standards for social inclusion,

participation and legal protection. Considering the question of who or what counts as a human being, the challenges and implications for the global social order of the technological ability of some regions of the world to 'enhance' human biology. Post-humanist and transhumanist approaches calling into question assumptions about human beings and their place within the world.

An important engine behind this development is the combination of nano-, bio-, information, and cognitive technology. This so-called NBIC convergence is creating a new wave of applications, consisting in large part of intimate technologies capable of monitoring, analysing, and influencing our bodies and behaviour. In essence the NBIC convergence means a steadily more profound interaction between the natural sciences (nano and info) and the life sciences (bio and cogno).

These NBIC technologies are set alter the world, the human condition and our very being beyond our imagination; radical improvement of human capacities and choices, division between natural and enhanced humans and nature. This brings a crucial political question at the table: how can we develop and implement human and nature enhancement technology in a societally responsible way? Is society really capable of timely anticipation? This is disputable: at an early stage of technology development, the effects cannot be predicted, and by the time the effects become visible, they're out of control. Related to this is the observation that social reality is stubborn, and that new technologies often have unintentional and unexpected, sometimes paradoxical effects.

#### RETHINKING, INVENTING NEW JOBS

Although economic solutions alone are not an adequate response to disadvantage they are one of the key determinants of opportunity and well-being throughout the life course.

Current macroeconomics theory may need to examine some of its core assumptions. Current policy instruments may not effectively deal with the emerging technological transition. As trade moves towards a global open market of on-demand resources, traditional trade deals could have distortionary or unexpected consequences in an increasingly digital world.

Emerging technologies will enable new organizational models for production and ownership. Innovation could create opportunity for every actor in the economy, by inventing whole new categories of jobs and industries. It could also involve envisioning a different economic model built on very different assumptions about scarcity, inequality and sustainability. Emerging technologies are changing *how* we work – new tools enable virtual work and artificial intelligence and other advanced technologies drive automation that is creating, disrupting and changing how we work and at what. There's also an ongoing transformation of *who* works, as women have entered the workforce in huge numbers and employers focus on diversity and inclusion. Additionally, new types of enterprises are

changing *what* work people do, with the rise of new industries like home care and new work models like the gig economy. Twentieth century manufacturing is being replaced by 21<sup>st</sup> century customization, on-demand and services. .... rebalancing (macro)economic and social policies is essential. This means carrying out effective ex-ante social and distributional impact assessment of all policies, particularly macroeconomic, to ensure that they actively contribute to reducing poverty and inequality and do not undermine social rights. In the long term, we need a new social and sustainable development model which sees the economy as an instrument to promote prosperity and well-being for people and planet, not just economic growth.

Our present underlying societal and policy structures are not aligned with this next society. Consider education: currently, our institutions support columnized learning until our early 20s, but then stop entirely. New models to support lifelong learning and to reinvent a number of other social structures, including work and retirement, healthcare delivery and housing. In short, we need a new social contract.

#### FUTURE OF WORK

Emerging technologies, such as artificial intelligence (AI), data analytics, sensors, blockchain, robotics, telepresence, 3D printing and synthetic biology, are creating a global digital infrastructure that will transform the economy and the nature of work. Over the next decade, many jobs, industries and communities are expected to face disruption. Firms may become more virtual. There may be fewer traditional jobs, and more virtual gig work. Some people may become 'surplus' to requirements. As this digital infrastructure evolves, service industries are becoming global, manufacturing could become more local (3D printing) and natural resources could be produced locally (synthetic biology).

Technologies reduce scarcity of human labor. Automation and robotics will reduce manual labor scarcity. Information, skills, and expertise will be accessible across the planet through AI, telepresence, AR, VR, and other enabling tools. In many areas, scarce knowledge and cognitive capacity could be addressed by AI and algorithms that can be quickly and easily replicated from one device to many.

## URBANISATION

The tendency over the past decades indicates that social exclusion and segregation between different groups in the society have increased. The largest social exclusion and differences are to be found in neighborhoods in urban and metropolitan areas.

Convergence and interactions of functional, structural and social changes result in challenges of unprecedented complexity for city governments. To understand how cities emerge, function and evolve, urbanization is a process that simultaneously transforms places, populations, societies and the environment. To navigate this transformation phase, it is necessary that we understand cities as integrated social, economic, and physical systems in more precise and predictive ways.

Urbanization, now on an unprecedented scale, is a major contributor to the systemic clash between biosphere and Technosphere. As cities and their technology-driven economies, expand geographically, they encroach on the realms of the biosphere, usurping ever-larger living landscapes and paving them over with tarmac and concrete.

The challenge of today is not just one of scale, speed and scarcity of resources but on a more fundamental level, it is one of complexity. Cities are the center of civilization and thus express a complex set of social, ecological, technological and economic factors and often pull in very different directions. In an age of globalization and information technology, the urban equation that we are dealing with today has become a lot more complex.

Cities must reinvent and rethink themselves in the context of planetary change. The emergence of complex interactions among human, natural, economic, social and technological systems and the uncertain trajectories that characterize urban futures require that cities critically review their assumptions and expand their capacity to ask new questions. Urbanization is driving systemic changes in socioeconomic ecological structures by accelerating rates of interactions among people and places, multiplying numbers and strengths of connections and expanding the spatial scales and influences of human activities to global levels. It is increasingly evident that cities amplify the consequences associated with globalization such as the movements of people and products, access to and disruption of natural resources and threats to ecological tipping points.

## MAJOR FORCES

Two major forces seem to be catalyzing the process societal change. On the one hand, the aforementioned increasing pace of technological development and adoption, which are driving a major transformation of the model of economic growth, labor markets and wealth creation. While the overall level of economic prosperity has increased significantly over the last few decades, the level of inequality is reaching record levels. On the other hand, the rapid expansion of decentralized communication platforms, such as Facebook, WhatsApp, YouTube and WeChat, are posing significant pressure on the democratic political process and on the diffusion of ideas, with impact on the public perception of science and the debate on human values. Both could become the most relevant levers to ensure viable economic growth while preserving social and political stability.

This as well highlight the importance of empowering citizens in general and people in disadvantaged positions especially, but also the potential reformulation of participation and the redesign of the economic social contract. The social contract is an implicit and hypothetical contract between the state and its citizens from which the legitimacy of the state's authority over its citizens arises. Driven by major social issues such as the climate crisis, the housing shortage, the affordability of healthcare, institutional racism and social inequality, this social contract is increasingly coming under pressure.

## INTERLOCKED HUMANITY AND NATURE

The biosphere in which we live is comprised of all of the biological life and the physical environment wherein life exists on Earth. Our biosphere with all its many elements together comprises an amazingly complex, interconnected, and evolving system. The multitude of unique parts — from organisms to oceans, rivers, deserts, plants, and animals — all are connected and collectively contribute to the character and quality of life on Earth as a whole.

All life, including human life, ultimately depends on the wellbeing of our host planet as a vast, interconnected, synergistic system. Without life, the face of the Earth would motionless and inert. The biosphere is a profoundly dynamic place, with a vast variety of living organisms interacting with one another. Natural and human systems, from large-scale climate systems to local ecosystems and communities, can behave in complex ways, including abrupt changes and threshold behavior. The understanding of interlocking Earth system cycles and human interactions becomes of upmost importance at a time when the relationship between humans and our biosphere is becoming ever more precarious.

## CHANGE IS GONNA COME (?)

The present and future challenge will repeatedly test the resilience and adaptability of communities, states, and the international system, often exceeding the capacity of existing systems and models.

This looming disequilibrium between existing and future challenges and the ability of institutions and systems to respond is likely to grow and produce greater contestation at every level.

Social change demands a big investment of energy and risk by leading individuals or social groups in order to overcome resistance. When resistance comes from authorities or elites, it is mainly a matter of whether popular movements can overcome it, but when it comes from ordinary people things are far more complicated and a thorough cultural shift is needed. Shifts of culture take time, sometimes involving painful social divisions.

In times of change the reservoir of social potential bubbles up. When conditions are right, this undertow can achieve critical mass, causing normally docile people to come out, expressing their feelings in action or protest. Ranging from local movements promoting ideas or innovation to big political uprisings, it gets worse when power structures are unmoving, resisting loss of power or privilege.

Social change only truly becomes embedded when its core ideas are passed down and normalised by the generation following. Alterations can be made to laws, practices and structures, but real change happens when transmitted across generations, through education, or family and community transmission.

## HOPE & DISPAIR

Despite hopes that technology would enhance our social connectedness, indications are that more people are feeling lonely and disconnected from the world around them, suggesting continued social challenges in a future where more people feel increasingly isolated and lonely. This trend is particularly prevalent in more urban areas. This may signal a socially disconnected way of life, driven by circumstances including the changing nature of work, the increasing valuation of individualism in society, and the rising ubiquity of toxic social media messages. This trend could lead to a general loss of social intelligence, a rise in antisocial backlash and a decline in physical and mental health.

In this more contested world, communities are increasingly fractured as people seek security with like-minded groups based on established and newly prominent identities; states of all types and in all regions are struggling to meet the needs and expectations of more connected, more urban, and more empowered populations; and the international system is more competitive and at greater risk of

conflict as states and nonstate actors exploit new sources of power, resources and erode longstanding norms and institutions that have provided some stability in past decades.

Unlike at other times in history, we now live in a society that is a threat to itself. Crises and catastrophes that are, in some fashion, the result of our way of life. There is an increasing sense that society lack control over the world, which seems to carry on beyond the limits of political will, in other words, beyond the ability to govern it, to implement necessary transformations, limiting risks and making its development more balanced. Society interprets the crisis as an anomaly after which the previous normality must be re-established.

The metaphor of the crisis refers to an infrequent malfunction, suggesting that, with the exception of that attribute or moment, the society is stable and balanced. Crisis is a term that singularizes a complex situation. But the reality is very different: the diagnostics that are carried out are full of uncertainties and controversial elements. The scale of transnational challenges, and the emerging implications of fragmentation, are exceeding the capacity of existing systems and structures. There is an increasing mismatch at all levels between challenges and needs with the systems and organizations to deal with them. The international system—including the organizations, alliances, rules, and norms—is poorly set up to address the compounding global challenges facing populations.

There is no unanimity about solutions, and we cannot assume that we have adequate instruments to address them. Not fool ourselves into thinking that we only need determination and political will. Even knowing where we need to go, it is not clear how to make the transition, whether we have the proper instruments, who must shoulder the costs, what interests and values should be given greater weight in the balance. What should we sacrifice and to what extent when there is tension between the interests of different generations, where technological and economic imperatives and health emergencies seem incompatible and the old debates between freedom and security or between growth and sustainability reappear with all their drama?

A world that is critical state, with societies and governments that live in greater instability than they seem to be capable of managing. There are reassuring interpretations that view these crises as temporary or exceptional situations, moments of change or inflexion points, but these interpretations are of very little help when it comes to responding to this situation and can make us lose sight of the fact that this phenomenon is enormously complex.

Many of the crises are not due to simple causalities but to complex realities, they come about in a quick and complex fashion; they involve many interactions between diverse aspects of governance, without respecting bureaucratic and jurisdictional delimitations. It is not possible to establish a moratorium and resolve them in parts. What seemed like a stable solution evolves into new problems



that must be resolved in turn. All of that challenges the adaptive capacity of our systems of government, which proceed basically from the birth of modern democracy, the nation state and the industrial revolution: vertical, hierarchical, differentiated and mechanical.

The idea that societies must change is a frequent exhortation, but it does not eliminate the controversy about the direction and shape this change must take; the paradox that society can do so much and yet so little at the same time; it is concurrently so powerful and so fragile. A society that has been constructed in the dualism of nature and culture-society, nature as an artificial construction. A society that is capable of deploying unprecedented technological power, yet it cannot guarantee development that is balanced in legal, social or environmental terms. The main question is how do we come to grips with dangers that present themselves as sudden emergencies, or with those that are more stealthy until system feedback mechanisms and emergent properties of system transformation produce equally sudden and all-but-overwhelming consequences? The political thought and action we need for global health, global justice, and global political economy is a dialogue between present questions, future possibilities, and past insights and blind spots.

#### HUMAN ENHANCEMENT AND TECHNOLOGICAL CITIZENSHIP

DeepTech – from artificial intelligence to synthetic biology – are set to alter the world, the human condition, and our very being in ways that are hard to imagine. A look forward; human beings are becoming more closely integrated with artificial devices and systems (and thereby becoming more computer-like). Second, computers are developing greater intelligence and more social, emotional, learning, and evolutionary capacities (and thereby becoming more human-like).

The first dynamic is exemplified by human beings' growing use of mobile and wearable devices, online social media and e-commerce, augmented and virtual reality systems, and neuroprosthetic devices developed for purposes of therapy or human enhancement. The second dynamic is exemplified by the increasing sophistication and expanding use of technologies relating to social and emotional robotics, the pursuit of artificial general intelligence, nanorobotics and swarm robotics, synthetic biology and artificial life, biological computing, and smart environments and the Internet of Things.

The next step is about technologies that will reconfigure Earth's very metabolism: nanotechnologies that can restructure natural forms of matter; molecular manufacturing that offers unlimited repurposing; synthetic biology's potential to build, not just read, a genome; biological mini-machines that can outdesign evolution; the relocation and resurrection of species; and climate engineering attempts to manage solar radiation by synthesizing a volcanic haze, cool surface temperatures by

increasing the brightness of clouds and remove carbon from the atmosphere with artificial trees that capture carbon from the breeze.

A society filled with myriad diverse sources of embodied non-human agency that can detect and respond to human beings' actions, emotional states and even thoughts in creative, meaningful, and often unpredictable ways. Both of these dynamics result in a society whose membership has been expanded to include entities beyond just natural biological human beings, and both of these dynamics would be accelerated by implementation of Nano-Info-Bio-Cognitive convergencies. Fascinating and worrying.

The discussion of these developments limits itself as a rule to individual values. But it is also crucial to talk about the collective human values that we wish to guarantee in our intimate technological society. That brings an important political question is at the table. How to develop and implement human enhancement technologies in a socially responsible way? Ethical perspectives on human improvement oscillate between transhumanist, posthumanist development and bioconservative positions the idea that human enhancement technologies will undermine human dignity.

We live in an age of complexity, where every day we experience societal and behavioural changes, thanks to technology and medical and scientific advancement. Our body might (will probably) be augmented, optimized and continually monitored, with this in mind marketing and business practices will change; virtual reality and artificial intelligence will increasingly play an active role in our society, also surprisingly helping us to experience empathy and human qualities. Thus, debates on bioethics are often on the agenda. Asking ourselves what the future of human beings is and what possibilities they have, is the least we can do. In this sense, a discussion on the transhumanism can offer a glimpse into the extreme perspective of re-planning, which reminds us what it means to be human in the near future.

#### A MAJOR TURNING POINT IN THE HISTORY OF HUMANKIND?

As aforementioned, the pace and extent of globalization have meant that new challenges have emerged that were either not anticipated, or at least not expected for some time to come. And, having a more integrated world means having more integrated problems that are more difficult to solve.

Our species has proved capable of producing challenges of unfathomable difficulty. We may, however, also prove capable of developing the novel thinking and technology required to overcome them. A future, in which humans and converging techno-scientific developments co-create the solutions to societal problems by integrating cyberspace and physical space. A human-centred society that

balances economic and technological merging the physical space (real world) and cyberspace. An evolutionary acceleration that will shift humanity more in the next 50 years than in all the different stages of human history and evolution. It is not as fantastical as it sounds; much of the technology we will need is already here.

Transformative technologies in the process of development. It seems that 'we' may soon be able to re-design our surroundings comprehensively from the nano-level to the global biosphere and climate system. Making new matter through nanotechnology and molecular engineering, fabrication of synthetic genomes, 'post-wild' ecosystem management, gene-drive, species relocation and resurrection, cities as evolutionary forces and various forms of climate engineering. A future with a profound and unprecedented control over (or replacement of) natural processes. is that some wildness will inevitably remain, however transformative the technology. All human artefacts, including the deepest of technologies, retain an element of unpredictable waywardness. The fantasy of total control, even over what we make in accordance with our best understanding, is just that: a fantasy. Presumably the more transformative the technology the more the potential for waywardness should make us hesitate.

This raises the philosophical questions about this profound techno-scientific prospects towards a synthetic society, a question about meaning and identity, including what it meant to be human. What if we deliberately aimed at maximising the extent to which our surroundings, and therefore our own nature, are subject to technological control? Humanity has evolved, and our cultures, institutions and ethical systems, such as they are, have developed against a background of natural limits. Although human history has been constituted partly by progressively overcoming some of these limits, do we really want as fully synthetic a world as possible? In order to genuinely want this we would need to know what it meant. Reflection, including ethical and philosophical reflection, is called for then.

It will be hard to envisage a calm and reasonable debate about profound and complex issues in the current populist atmosphere with its climate change denial and memes of betrayal against a background of vast inequalities in power and resources.

## FINAL THOUGHTS

Does society have capacity to make sense of its place and time in history, to reflect on the evolution of society and where it may be heading. Developing guiding principles to achieve increasing symbiosis between natural processes that humanity applies to direct it towards a new synergistic, regenerative 'most desirable' future. Ethics based on the ontological condition of interdependence and symbiosis (mutual flourishing) in the systems of life on Earth.

A new moral imagination and a political morality comprised of norms of right recognition and right relationship among contemporaneous human individuals and societies and between human and non-human beings and systems. These concepts and norms come alive and gain the ability to change human political will and motivation through expression as social practices and social movements. Earth ethics is based on an imperative of human responsibility to protect and promote natural systems so that symbiotic life is abundant and flourishes. Many other species possess agency—even conscious, intentional agency—and affect natural systems to varying degrees. But none have the capability for either sustaining or disrupting natural systems on a scale or scope matching ours. Consequently, the moral duty to promote flourishing life on Earth falls to us.

Today humankind is manifestly failing to live up to this responsibility; indeed, it is violating its moral debt to the planet at virtually every turn. The human failure in this regard is a failure of will and of social, political, and economic institutional design. These failures, in turn, are related to a cultural and spiritual failure of the moral imagination. We stand on a threshold beyond which the constitutive features of our economic, political, and moral ways of life will disintegrate, and the task of building them back better will consume and transform the politics and governance of the remainder of this millennium.

The present time represents both a subjective and collective experience of social time during the transitional phases of accumulation-domination cycles. It marks the end of one era and the onset of another, not through a gradual shift or a gentle, amphibious blend but an abrupt disruption in the continuity of social experience, leaving societies without a conceivable alternative or any plausible foresight for several years, perhaps even decades. It is during such times, amid social upheavals, that a new historical epoch gradually begins to emerge, offering a renewed sense of hope to communities. However, until this new dawn materialises, the present exists as a profound interim—a void filled with anguish, a palpable emptiness, a suspension of time itself.

## 'ISSUES'

- Collapse or lack of social security systems; Non-existence or widespread bankruptcy of social security systems and/or erosion of social security benefits: disability, elderly, family, injury, maternity, medical care, sickness, survivor, unemployment etc.
- Employment and livelihood crises; Structural deterioration of work prospects and/or standards for the working-age population: unemployment, underemployment, lower wages, fragile contracts, erosion of worker rights etc.
- Erosion of social cohesion; Loss of social capital and a fracture of social networks negatively impacting social stability, individual well-being and economic productivity, as a result of persistent public anger, distrust, divisiveness, lack of empathy, marginalization of minorities, political polarization etc.
- Failure of public infrastructure; Unequitable and/or insufficient public infrastructure and services as a result of mismanaged urban sprawl, poor planning and/or under-investment, negatively impacting economic advancement, education, housing, public health, social inclusion and the environment
- Infectious diseases; Massive and rapid spread of viruses, parasites, fungi or bacteria that cause an uncontrolled contagion of infectious diseases, resulting in an epidemic or pandemic with loss of life and economic disruption
- Large-scale involuntary migration; Large-scale involuntary migration induced by climate change, discrimination, lack of economic advancement opportunities, persecution, natural or human-made disasters, violent conflict, etc.
- Pervasive backlash against science; Censure, denial and/or skepticism towards scientific evidence and the scientific community at a global scale, resulting in a regression or stalling of progress on climate action, human health and/or technological innovation
- Life expectancy gap, so life expectancy is increasing everywhere, but myriad inequalities exist that are continuing to determine life expectancy based on privilege, access to and availability of healthcare.
- Severe mental health deterioration; Pervasiveness of mental health ailments and/or disorders globally and across multiple demographics, negatively impacting well-being, social cohesion and productivity: anxiety, dementia, depression, loneliness, stress etc.
- Widespread youth disillusionment; Youth disengagement and lack of confidence and/or loss of trust with existing economic, political and social structures at a global scale, negatively impacting social stability, individual well-being and economic productivity