

CHAPTER ONE

It's Not Too Late We can Change the Way We Live on the Planet

Everybody is Worried

Of course, it's hard not to worry. Everyone is worried. We know there is no point in panic, but many of us are filled with doubts about the ways we live. Nagging at us is the slow realization that our vision of the world is delusional and the persistent doubt that torments us is that we've got everything wrong. We do not know if we have the courage to respond to the extreme times in which we live or whether we are capable of the sacrifices we will have to make or the heroism that we know will be expected of us to save the lives of our children and the generations to come.

For years now the story 'The Daughters of the Moon'¹ by Italo Calvino has given me a jolt when it enters my mind, arriving unannounced to warn me about what is happening to us. Written at the beginning of the 1960s, the story takes place in New York City where I live and could have been written today. Calvino describes the skyscrapers gleaming like the nylon bristles of a brand-new toothbrush – that's exactly what they look like on Central Park South where spindle thin new nylon bristle skyscrapers are going up.

In the story Calvino mingles literature with science as he writes about the crowds of people on the city streets with their arms laden with parcels from shopping in the big department stores, and of how the items they have bought will become "the layers of things that had been thrown away" changing the geology of the planet.

¹ <https://www.newyorker.com/magazine/2009/02/23/the-daughters-of-the-moon>

Calvino writes of the plight of communities living in “the amalgam of wreckage of piles of battered fridges and burnt-out light bulbs,” of the discarded people who have been marginalized by a consumerist society, and of people who have willingly discarded themselves because they are tired of racing all over the city to sell and buy new things that go instantly out of date and have to be thrown away.

At the end of the story young mammoths gallop across the savannas once again, and forests cover the Earth as they did before, burying the decaying cities and roads and obliterating all trace of us.

It is hard not to worry. Calvino has always left me in no doubt that we will all end up on the scrap heap – in jagged, rusty territory -- if we continue to live the way we do now. We have changed the climate and the anatomy of the planet, but there is so much we can do to prevent the complete collapse of the biosphere that we call home.

It isn't the case that time alone will solve our problems. It won't. We must be more forthright, more candid, and more direct about the trajectory of the global threats to humanity. We are going backward, and we must recognize that. The unprecedented COVID crisis reveals that many people are more influenced by politics, ideology and propaganda than by science, and hundreds of thousands, perhaps millions of people have died, and it is highly likely that many more people will die because many in human societies have closed their eyes to science. I have written *Time's Up* to provide readers with an opportunity to consider the scientific evidence on what's happening to the planet and to us.

We *can* change the way we live now. It is *not* too late, but first there must be a reckoning, a moment of gut-wrenching honesty when we refuse to flinch and do not shy away from appraising the state of the planet *and* the state of humanity. Only when we are prepared to look the future in the eye will we be able to move beyond the violent anguish many people are experiencing as they try to figure out what we can do to push down the existential risks we have caused that threaten our children and grandchildren.

STATE OF THE PLANET²

“Climate Tipping Points – Too Risky To Bet Against”

Scientists are especially worried. They have been for many years. The stability and resilience of our planet really is in peril, and we should all be worried. Terrified, actually. We are in a climate emergency with a growing threat of abrupt and irreversible impacts on multiple interconnected biophysical systems.

In “Climate tipping points – too risky to bet against,”³ [Timothy M. Lenton](#), Johan Rockström, Owen Gaffney, Stefan Rahmstorf, Katherine Richardson, Will Steffen & Hans Joachim Schellnhuber, all of whom are eminent scientists whose research we can trust, describe the climate emergency and warn us that we are approaching a global cascade of tipping points that will result in a new, less habitable, ‘hothouse’ climate state.

In their commentary published in *Nature*, November 27, 2019, they conclude “If damaging tipping cascades can occur and a global tipping point cannot be ruled out, then this is an existential threat to civilization.”

Within the scientific community this is a widely held view. The state of the planet will directly and cataclysmically impact the state of humanity. Already there are massive migrations within and between countries because of floods and fires. Water sources are already exhausted or contaminated, food production is interrupted by warmer temperature, and insect populations are plummeting. In many places bees no longer pollinate.

More than 11,000 scientists from around the world have clearly and unequivocally stated that Earth is facing a climate emergency that is negatively impacting all human societies and could end human life on the planet.⁴

² The author was a participant in the 2009 ICSU/ISSC On-Line Global Visioning Consultation; Participant in the 2010 ICSU/ISSC Open Visioning Consultation Forum, UNESCO, Paris, resulting in the publication of the *Grand Challenges Report*, which is a consensus list of the highest priorities for Earth system science that would remove critical barriers impeding progress toward sustainable development. (More than 1000 individuals from 85 countries contributed in the initial online consultation, and more than 200 individuals and 46 institutions reviewed the draft of the *Grand Challenges*.) *Planet Under Pressure Global Conference on Earth System Science*, London, 2012: 4 peer reviewed presentations accepted focusing on: (1) The State of the Planet; (2) Meeting Global Needs; (3) Transforming our way of living; & (4) Governing Across Scales.

³ <https://www.nature.com/articles/d41586-019-03595-0> Comment 27 November 2019

⁴ <https://academic.oup.com/bioscience/advance-article/doi/10.1093/biosci/biz088/5610806?searchresult=1>

And yet, in the US scientists are under attack.⁵ Political appointees have dismantled the infrastructure of governmental agencies that are crucial to the advancement of scientific knowledge on the state of the planet. The EPA is now being run by the fossil fuel industry, with former lobbyists for fossil fuels in leadership positions in other government agencies. Scientific studies have been shut down and targeted studies removed from official websites. Words, including “climate change” have been banned.

In the US there is documentary evidence that scientists are now excluded from participation in regulatory decision-making. Some scientists have received gag orders and aggressively pressured not to speak publicly. Even more concerning, scientists have received death threats and intimidation is pervasive, sending the message that economists, scientists, and career staff are not wanted and must be rooted out.

But the obscuring of science, endemic in the US, is also a global phenomenon. In a video interview⁶ in December 2019 at COP 25, Peter Carter, Director of the Climate Emergency Institute⁷ and an IPCC expert reviewer, states that he checked all the COP documents at the Climate Secretariat and found there is no mention either of science, or of the IPCC.

“In this COP science has been completely dropped,” Carter states. “We are accelerating on a trend to total planetary catastrophe, but nothing is going to come out of this COP. It’s under the control of the fossil fuel industry.”

“We’ve got to reduce global emissions by 50% by 2030,” he states. “We can still do that, but if we wait any longer it becomes impossible. So COP 25 is yet another circus, but the acts are terrible in this circus and it’s another delay.”

“It’s always been set up to fail,” Carter says. “We know for sure the United States, Russia, Kuwait, Saudi Arabia are blocking scientists from the negotiations. It’s a terrible crisis. In moral terms it’s an unprecedented crime. Evil.”

⁵ <https://www.nytimes.com/2019/12/28/climate/trump-administration-war-on-science.html>

⁶ <https://www.youtube.com/watch?v=oa13KrOvE2s>

⁷ <https://www.climateemergencyinstitute.com/about.html>

In a December 4, 2019, email about COP25, Peter Carter shares his deep concern. He states, “The human race may not survive the resulting further acceleration of global warming with a hot house Earth triggering multiple tipping points.” He calls the lack of response by governments and the continuing rise in CO2 emissions “the crime of all time,” and he adds, “Waiting another year to 2020 COP26 is the most terrible crime against all humanity.”

In the *Nature* article, “Climate tipping points – too risky to bet against,” the scientists write, “In our view, the consideration of tipping points helps to define that we are in a climate emergency and strengthens this year’s chorus of calls for urgent climate action — from schoolchildren to scientists, cities and countries.”

Similarly, the 11,000 scientists, who signed the letter to galvanize world leaders to act, agree. They state, “We believe that the prospects will be greatest if decision-makers and all of humanity promptly respond to this warning and declaration of a climate emergency and act to sustain life on planet Earth, our only home.”

“We urge widespread use of vital signs,” they write, “which will better allow policymakers, the private sector, and the public to understand the magnitude of this crisis, track progress, and realign priorities for alleviating climate change.”

“The good news,” they state, “is that such transformative change, with social and economic justice for all, promises far greater human wellbeing than does business as usual.”

I agree with these scientists and *Time's Up* focuses opportunities that already exist for rapid transformative change. But first, the reckoning. It is imperative that we all become more knowledgeable about what Calvino tried to teach us in *Daughter of the Moon*. Calvino used science in his stories, and we can too. My job in this book is to make the science accessible so you can see for yourselves how people in power who have wealth and privilege orchestrate their transgressions of planetary boundaries.

It’s time to call out governments for their failure to act, and to challenge people worldwide to take bold and transformative action to push down the life-threatening risks to all life forms on the planet. *Time's Up* addresses this apathy, which in and of itself is a global catastrophe, and argues that when governments fail, we the people must shoulder the responsibility for transformative action to navigate our highly unstable and unsustainable world. *Time's Up* provides the scientific knowledge we need to *step up* and prepare for future shocks and disasters.

We are in the midst of a global crisis, the severity of which is being felt in every country in the world. We need to mobilize to save the planet for our children and grandchildren, but first we must make sure we have done our homework and learn as much as we can about the grand challenges that face humanity.

STATE OF HUMANITY⁸

“We Are Moving Faster Towards Annihilation”

On a daily basis participants on the global listserv of the UN Major Groups and other Stakeholders (MGoS), representing many nationalities and cultures, express their concern about the cascading impacts of human rights violations that result from a lack of political coherence or the will to act on behalf of people who are already suffering because of climate change.

These email threads bring together the leadership of NGOs around the world. With clarity of thought on the future of humanity they express the urgent need for a complete rethinking of the interrelationships between social, environmental and economic policies and global governance.

The MGoS are working together to inform, guide and pressure representatives of UN Member States to push down the risks of climate change and to achieve the Sustainable Development Goals (SDGs) by 2030.

Since 2015 the MGoS have played a key role in the annual UN High Level Political Forum (HLPF). At first there was an expectation that UN Member States would welcome their participation and there would be opportunities for collaboration. MGoS anticipated systemic change. Instead they have found most of the sessions on human rights and the SDGs they've organized are relegated to the buildings surrounding the UN rather than located in the meeting rooms inside the UN compound. Sessions such as “Towards Collective Advocacy” have been scheduled in nearby churches, NGO offices, consulates and hotels, while events organized by the big money

⁸ This section is based on a four-year study of the UN High Level Political Forum on Sustainable Development. In 2018 the UN HLPF focused on: *Transformation towards sustainable and resilient societies*; in 2019 on *Empowering People and ensuring inclusiveness and equality*; in 2020 on *Accelerated action and transformative pathways: realizing the decade of action and delivery for sustainable development*; and in 2021 on *Sustainable and resilient recovery from COVID 19 pandemic that promotes the economic, social and environmental dimensions of sustainable development: building an inclusive and effective path for the achievement of the 2030 Agenda in the context of the decade of action and delivery for sustainable development*.

private sector including, for example a session on sustainable beer, have been scheduled inside the UN compound.

In the five years since the establishment of the HLPF there has been a dearth of Member State – Civil Society collaborative projects or initiatives to reduce existential risks and achieve the SDGs. There have been no collaborative responses to the climate emergency or to any other SDG joint initiatives. Concern is frequently expressed in the email threads of MGoS and at the meetings they organize that there is no sharing of knowledge with UN Member States or learning from the real-world practices of participants in the MGoS. There is no interdisciplinarity in solving real-world problems and/or shared initiatives to reduce the extreme risks that confront humanity.

MGoS have found that the power and patriarchy that exists in the delegations from UN Member States is impenetrable. Multilateralism no longer exists. There is a widely held view that UN Member States have retreated into national, unilateral silos, and there is considerable debate about the Member States submitting to the demands of the private sector and ignoring the evidence driven human rights presentations of the MGoS.

There is also common recognition that no UN Member State is on track either in response to the climate emergency or in making progress in achieving the SDGs. Many MGoS have lost trust, and a conversation is now taking place on the widely held view that the SDG global indicator framework has failed.

“We are moving faster towards annihilation,” one MGoS participant wrote in a November 2019 email, bolstering this assertion by writing “there is a moral crisis in political ethics and increasing levels of intimidation, disruption and violence, and the lack of fair and efficient justice systems.”

At the UN “Most Countries Are Represented Badly”

Some MGoS are working in the interface between government delegates and bureaucrats from UN Member States, and the career professionals at the United Nations. Their email exchanges provide many insights into the systemic failure of governments and institutions to respond to the climate emergency. There is concern that neither the government ministers of UN Member States nor the bureaucrats who work for them possess the knowledge, leadership skills, or experience to respond to the climate emergency or to achieve the SDGs.

One outcome of the MGoS participation in the UN HLPFs is that it has revealed, as one participant states, “most countries are represented badly”, while at the same time, *there is*

*recognition that the leadership challenges facing the governments of UN Member States are very great and overwhelming.*⁹

There are many email threads that focus on the lack of the skills and experience required of bureaucrats representing UN Member States who are employed to design, supervise, and implement government policies. The consistent message is that the bureaucrats have only rudimentary knowledge of the impact of the climate emergency on human societies.

“Most countries are badly represented at the UN,” an MGoS participant states.

“They are not educated on the Earth emergency,” Peter Carter writes, “nor the science on the imperative of replacing fossil fuels with clean renewable energy or the science behind the SDGs. They do not understand why the world is in a state of global climate emergency and that our future survival is threatened.” He adds, “Also, they are reluctant to change what they are used to doing.”

Hannah Arendt called this condition “*the thoughtless disengagement from reality.*” Arendt used the phrase “the banality of evil” for the bureaucrats who committed the most terrible crimes against humanity. It is an apt description for the thoughtless disengagement of the governments of UN Member States and the bureaucrats who work for them, and it is this condition that Carter calls “*a terrible crime against all humanity.*”

In a similar way to the MGoS there are many career diplomats and personnel at the UN who are also concerned about the lack of response from UN Member States to the climate emergency. They also comment at meetings that most countries have not made a serious effort to change the status quo to achieve the SDGs.

“There are a large number of governments that don’t care one way or other about human rights,” a senior UN Official states at the July 2019 UN High Level Political Forum (HLPF) on Sustainable Development.

“If the UN pushes back against human rights violations it is accused of undermining governments,” he states. “*Many countries do not want ‘human rights’ mentioned in any discussions or included in any UN documents.* If we mention human rights in our strategic plans we get push back.”

⁹⁹ Simone Filippini, www.leadership4sdgs.org, December 2nd, 2019, email communication

“What’s happened to Human Rights up Front?” a man in the audience asks.

Human Rights up Front (HRuF) is the UN Secretary-General's initiative to strengthen the prevention of serious problems with human rights consequences that cut across the three pillars of the UN: 1) peace and security; 2) development; and 3) human rights.

“Human Rights up Front is in difficulties,” the UN Official states. “It is systematically being broken apart.” The official looks tired and dispirited as he notes that the issue of human rights receives only three and a half percent of the UN budget, which is troubling given that it is one of the three pillars.

“There are members of the Security Council who question the relationships between human rights and sustainable development,” the UN Official adds. “We’re off track.”

The Official says, “Human rights are not filtering through at the UN.” He laments, “If we push back on human rights we get accused of undermining governments. Some countries will not use the words ‘civil society’.”

The Huge Architecture of the SDGs Has Not Delivered

There is a sense of urgency at the 2019 UN HLPF.

“The huge SDG architecture has not delivered,” a presenter at an MGoS session states. Others attending the meeting talk about the “violation of moral and ethical boundaries” and state, “civil society can no longer function in silence.”

In many of the side events at the HLPF, the acute sense of urgency at the sessions organized by Major Groups and other Stakeholders (MGoS) is palpable. Speakers and participants share an unsettling energy to “*push forward*,” to “call for action,” and a common purpose to insist that UN Member States be “more accountable,” “more inclusive” and to “leave no one behind.” In contrast, at the session with the UN Official on human rights, he reports that the overriding message from UN Member States is to “*push back*”.

He makes the case that many countries have taken a similar stance, lauding the advancement of SDGs in their own country, while ignoring their unacceptable human rights violations and degradation of their own people.

At the HLPF on July 7th, 2019, a leader of a non-profit participating with the MGoS described the situation as “moving backward on a treadmill”.

“We have a long way to go,” he said in his presentation. *“Civil society does not have a place with the Member States. The situation is much worse now than it was five years ago.”*

“The UN is a great place to be, but this is not reality,” he said at the end of his presentation and opening the conversation.

“We’ve not been consulted,” an NGO participant said. “We’re not included. We don’t have an impact. Now is the time to come together for systemic change that has ethical and moral boundaries. We can no longer function in silence.”

“How do we approach things in different ways?” another participant asked. *“What tools do we have at our disposal?”*

The Private Sector Is Not Accountable

At the MGoS “Civil Society Forum” that took place on September 24, 2019, during the UN General Assembly (UNGA), the panel focused on identifying structural barriers to establishing durable partnerships that recognize the interconnections between human societies that governments cannot break. *There was concern expressed that the private sector is not accountable, and that there is more private money than public money at the UN, which constitutes an emergency for human survival.*

While the speakers at the “Civil Society Forum” focused on identifying structural barriers, at the “International Congress on Discrimination on Work and Descent” the speakers demonstrated how to break them down.

Every speaker came from an oppressed group and identified themselves with the 260 million people worldwide who are discriminated against. There were participants at the Congress from Africa, Asia, Europe, North and South America, and every speaker highlighted the need for inclusion, equity and non-discrimination in human rights if the SDGs are to be achieved by 2030.

Speakers focused on the protection of existence and the right of people in marginalized groups to define themselves. They decried how marginalization becomes internationalized and institutionalized, and that discrimination takes place in hearts as well as in minds.

But the overarching message, so powerful and so significant, was that *those who perpetuate discrimination against marginalized groups should take into consideration that those who have been left behind are now able to come together to unite and to fight for their rights.*

“We have come here to declare our freedom,” a speaker shouts. “The freedom of the people. Not the freedom of the nation. The freedom of the people!”

“It’s not just about achieving policies that are needed. It’s a complete rethinking of the interrelationships between policies and governance.”

“It starts at the local level. Strengthening local communities and the capacity of local communities”

“The System Is Crumbling From Within”

At the 2018 and 2019 HLPF the thoughtless disengagement of the governments of UN Member States was clearly evident, and the growing hostility between the governments and the MGoS was almost palpable.

“The system is crumbling from within,” one MGoS participant commented. “We know people are right to be anxious.”

In a new report scientists state, “Particularly notable is the 13°C Arctic warming projected for boreal late autumn months by the end of the 21st century under a business-as-usual scenario (RCP8.5)”¹⁰

The Global Failure to Come Up with Bold and Transformative Action

At the 2021 United Nations High Level Political Forum (HLPF) there was wide recognition and much hand wringing about the failure of the UN member states – both governments and the private sector - to reduce the existential threats that the Sustainable Development Goals (SDGs) address. Since the first UN HLPF in 2015 the forums have focused on the progress that individual countries are making in the achievement of the 17 SDGs. Member States present Voluntary National Reviews (VNRs) and give glowing reports of the SDG initiatives they are proposing to reduce the threats to the citizens of their countries and to people around the world. But by 2018 many participants at the HLPF were uncomfortably aware that the VNRs

¹⁰ <https://advances.sciencemag.org/content/5/12/eaaw9883>

were aspirational that no actions had been taken. As one participant stated at the 2019 HLPF “the voluntary reviews are more like travelogues” than serious accounts of initiatives being taken to reduce the existential risks to humanity.

This disillusionment was less evident at the 2020 HLPF when the global decision makers who attended handed off to young people and children the state of the planet and the responsibility for saving humanity. “Youth Rising” became the rallying cry of representatives of the UN and governments, and young people did step up. Youth were passionate and articulate, but their elders who encouraged them did not provide the support that was needed and there was no follow-through. Then there was also COVID.

At the 2021 HLPF the idea that youth would save us had vanished. Participants argued that we must act smartly to leverage scientific knowledge and to build community resilience, while at the same time the Major Groups and Other Stakeholders (MGoS) Coordination Mechanism wrote that the 2021 HLPF had “failed to come up with bold and transformative recommendations for action ... during this world crisis”.

Put bluntly, governments have reneged on their collective responsibility for the transformative actions promised at the 2015-2020 HLPFs. Still worse, at the 2021 HLPF there was wide recognition that on each of the 17 SDG indicators, all UN Member States had regressed to 2013 levels when the SDGs were first proposed. COVID has certainly contributed to this backsliding, but so has the reprehensible global lack of political will to save the planet for our children and grandchildren.

We the People Can Gain the Knowledge We Need to Save the World

Time's Up takes the reader back to the 2009 and 2010 global visionings and consultations on the state of the planet organized by the world's most renowned scientists, and to the 2012 Planet Under Pressure Conference. The book then follows the pathways of the United Nations High Level Political Forums and the efforts of UN Member States to take transformative action. The book documents:

1. The courageous and brilliant work of scientists who are creating frameworks to sustain all life on the planet and to overcome the existential risks that are making the planet uninhabitable;
2. The complex relationships between our physical and social worlds from the perspectives of the social and physical sciences, and from insights gained from the humanities, including the defining influences of language and consciousness;

3. The failed attempts by governments attending the UN High Level Political Forum on Sustainable Development to galvanize UN Member States to undertake transformative action to save humanity;
4. The vision and priorities of the Major Groups and other Stakeholders (MGoS) participating in the UN HLPF who are critical of UN Member States for their “failure to respond to the call of the people in times of crisis” and are calling for “bold and transformative action” to fulfill the promise of the Sustainable Development Goals and protect the future of all life on the planet;
5. The findings of the 2021 IPCC Report and spotlights *what we the people can do*, at home, in our communities, in our countries and around the world to ensure that the planet is habitable in sustainable ways so that our children and grandchildren survive and thrive.

People in every country in the world are grappling with the cascading effects of climate change. *We know* what will happen when the planet heats up 3.5°C – 5°C and the Arctic warms up 13°C. Our species will struggle to survive, and it will be cataclysmic for all other life forms on the planet. It's the reason there are massive protests around the world – children, families, scientists – condemning the governments of UN Member States for their failure to protect children and future generations from the manmade climate emergency and ecological disaster.

For many of us with knowledge but no privilege it's like sitting in a lifeboat holding a lifejacket but being stopped by authorities from throwing it to a person in the water who is drowning. Or, having a ladder, but being stopped by officials from putting it against the side of a burning building so a person can escape the flames. Our research does not count even though we know of actions that can be taken to push down the risks and quite possibly save the future for our children.

Time's Up: Can Science Save Us? addresses this problem by providing people like myself, who lack privilege or power, the opportunity to provide a broad sweep of the root causes and systematic barriers to long-term ecological sustainability and human survival. It is based on 21-years of transdisciplinary research that draws on the physical and social sciences and the humanities in response to the overwhelming scientific evidence that people are changing the planet – from geology to climate. Governments must act. Reducing carbon dioxide (CO₂) alone will not be enough to reduce our transgression of planetary boundaries that places us all at grave risk.

A final note, I am the teller of this tale, but this recounting of science documents the work of the many courageous scientists and wise people in every sector of human societies who are sounding the alarm and telling us *time's up*. Two hundred and thirty-four scientists read 14,000+ research reports to write the 2021 Intergovernmental Panel on Climate Change Report

(IPCC) and it is imperative that we take note. Ignore the people who are susceptible to propaganda and the lies of gaslighters. They will reject the warning from scientists that we are at code red. There will always be those who stand in the way. We must go around them, or respectfully request they get out of the way. The scientific evidence presented by the IPCC is overwhelming. It is unequivocal that humans are warming the planet. Higher concentrations of CO₂ are growing faster. Extreme weather is on the rise. Oceans are hotter, higher and more acidic. And, many changes are irreversible.

There is no time to delay. The risks are “unprecedented.” Keep in mind we have changed the planet and now the planet is changing us. We must act, but first we need to learn everything we can about the existential risks that are making the planet uninhabitable. Once we understand the almost insurmountable challenges that lie before us, then we can create the frameworks that are essential to sustain all life on the planet. There is no doubt our future is uncertain, but if we stay the course, read the science and encourage others to do the same, many things will become clearer. Then together we will know what we can do to save the planet for our children and our children's children. Reading *Time's Up: Can Science Save Us?* is a good place to start.