GREEN EUROPEAN JOURNAL

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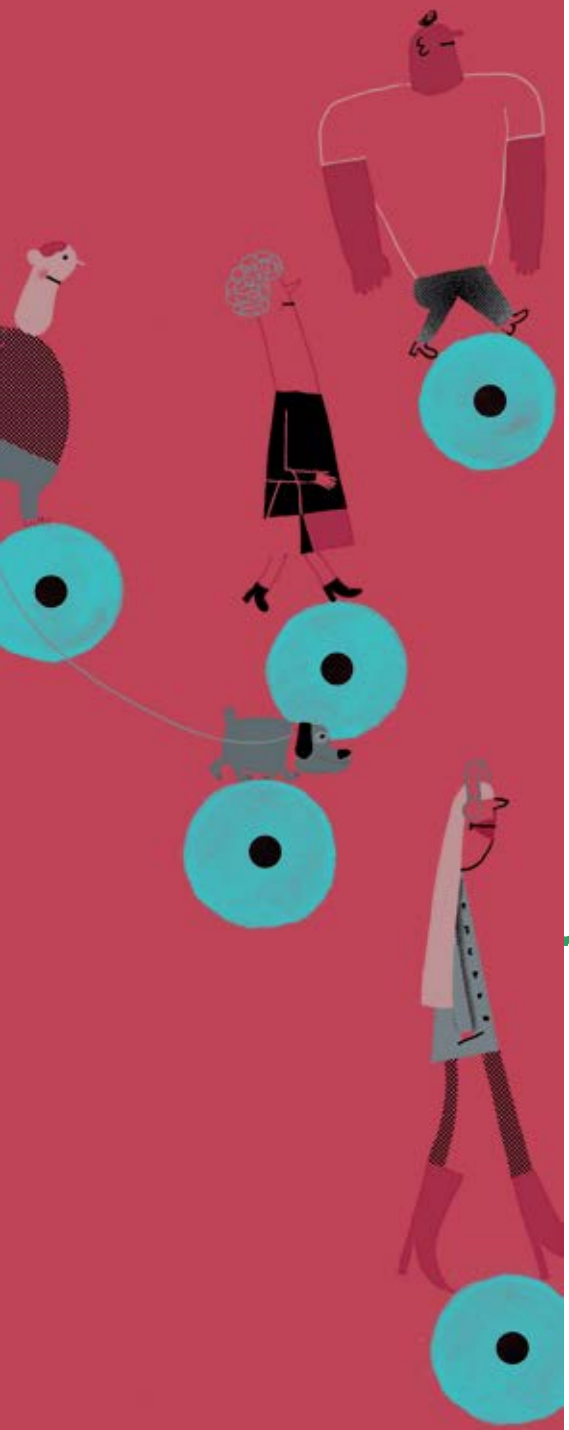

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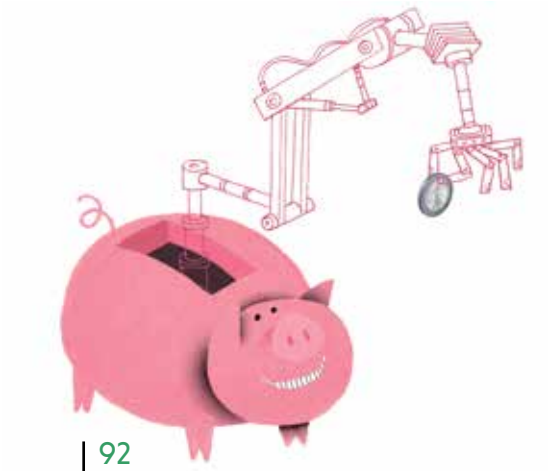

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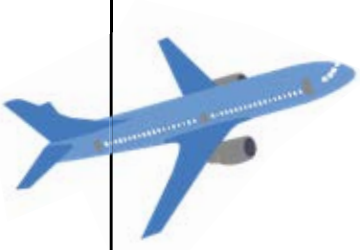

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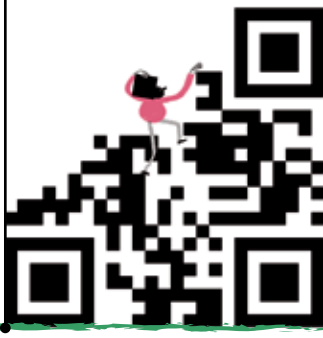

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DESTINATION EUROPE

BY LAURENT STANDAERT, EDITOR-IN-CHIEF

Poland. Lublin railway station. 9:30 am. 12 October 2049.

Lena has travelled overnight aboard the TransEuropa. She loves this train. Sleeper cars, restaurants, meeting rooms, games rooms for kids, views of the countryside – all for an affordable price. It's her first trip as a Member of the European Parliament. Travel on intra-union parliamentary business is by train, the hyperloop being reserved for crises only. With fellow MEPs, Lena is part of a tripartite commission on reforming education systems and digital learning in rural areas of the European Union. The choice of Lublin was a no-brainer: a green and hyper-connected mid-sized city, gateway to new members Belarus and Ukraine. The city also lies in the heart of the eastern Polish countryside, a poor region for years a source of cheap migrant labour which left generations of children behind.

A Belgian-Polish pianist active in anti-racism and local politics, Lena had agreed to run for office on a trans-European citizens' list. Since their introduction in 2034, transnational lists of parties or citizens set the terms of European elections. Dividing her time between playing the piano and practicing law in the social sector, Lena was able to rely on the European unconditional income to embark on this adventure. Her campaign centred on three main themes: education, inclusion, and digital freedom.

And it is education – or rather learning – that will be the focus of her political endeavour in the European Parliament. The crises of the 2020s

ORIAL

had called into question traditional education systems that were both unequal and obsessed with national language and history. Through a child-centred approach with a European outlook, education programmes have certainly evolved, but much remains to be done. Lena has tasked herself with using the mandate to promote alternative educational methods designed to emancipate children and develop practical and traditional knowledge – seizing the opportunities of digital learning while guarding against its risks. Education rather than competition; transition rather than accumulation.

Arriving at her hotel, Lena logs on to Sharing4EU to borrow a bike to ride over to Motycz, a village an hour outside Lublin. With the afternoon off, she'll meet with teachers, visit her great grandmother's grave, and go for a country walk. "It's funny," she says to herself as she pedals, "apart from greener farming, the absence of smog, and gradual repopulation, not much has changed around here!" Standing beside the grave, it strikes Lena that none of this was a given 10-15 years ago. Born in 2016, she grew up in the 2020s when the European Union was rocked by existential political crisis. Nativist and socioeconomic populists increasingly tended towards authoritarianism. Through success in national elections, they rose within the European institutions.

This was a brown decade of fascistic politics, part of a wider global trend, a response to the excesses of the ordoliberal and unequal Europe of earlier years. But beneath the surface, European solidarity was being rebuilt in cities. From Stockholm to Riace, cities broke with national agendas by welcoming, integrating, and training refugees and migrants, fighting climate change, and transforming lifestyles for the better. Although the broken promises of the national populists became ever more apparent, it wasn't until 2027 that the shocking video capturing the torture and murder of Yara, a Syrian refugee living in Gdańsk and famous creator of the open-source European alternative to Facebook, jolted consciences and led to change.

EDITO

Throughout the 2030s, a new generation set foot in the political arena. Erasmus students and apprentices of the 1990s and 2000s – children of cultural exchange, socially aware and broad minded across the Union –, they were the face of a Europe that emerged from the gloom to renew European integration. And the people were with them.

During the dark years, socio-environmental movements and feminists continued to nourish another Europe. The green movements, adopting a glocal and ecosystemic approach, saw the European project as a space in which to fundamentally change the way we produce, consume, and live together. The #MeToo movement culminated in 2029 with an unprecedented wave of rejection of an outdated patriarchal-conservative and dogmatic politics. These actors brought the debate forward on the politics of time, digitisation, migration, inequality, and humankind's cohabitation with nature and animals.

The Europe of 2049 is far from perfect. But the dialectic between the national and the European has been rebalanced to place citizens at the heart of democracy. The European Council is headed by a female-male co-presidency approved by the European Parliament. The 2033 Treaty of Tallinn not only marked a return to the international stage with a post-national and pacifist foreign policy, it saw the 'unionising' (in a new sense of the term that would enter the dictionary in 2035) of social and economic competences, which laid the foundations of the European unconditional income, the European healthcare card, and an overhauled industrial and monetary policy. As a result, while not completely obsolete, the Stability and Growth Pact and the nation state are no longer central obsessions of political and democratic life.

Rights and democratic life have made great leaps forward in the digital era. Cyberattacks and digital electoral interference are now under control. Today, the Union is an undisputed leader in digital rights and data protection. 'Portable rights' guarantee the same fundamental rights to all residents in the Union, wherever they are and towards all levels

of power. Everybody can participate or vote online either directly through the citizens' assembly or indirectly through trans-European lists. The public sphere has become transnational: instant translation into various languages, trans-European newspapers, funds to support investigative journalism.

As she daydreams around the streets of Lublin, Lena thinks about how far Poland has come since the turn of the century. Stubbornly wedded to a suicidal climate policy and riddled with identitarian tensions, it would have to wait until 2025 to see change. Nevertheless, the young representative is keenly aware that the future lies, and will always lie, in fighting the adherents of closed society and corruption. The Europe of 2049, while once again a credible leader in global climate policy, still imports too much energy and products that do not correspond to its values and model. The struggle will continue through trade and climate diplomacy, but also through unsatisfactory alliances such as the one with an environmentally progressive but socially repressive China.

In these battles, Lena knows education underpins all potential for change. In five years' time, she will leave elected office, as all citizens' candidates commit to do. It is this long-term commitment that continues to motivate her. Just before she began her campaign, she came across an old magazine from 2019 which imagined what the Europe of 2049 could look like. Its theme – the future is a political force to be represented in the present – had inspired her campaign slogan: "tomorrow is now".

This special edition is neither an academic nor a policy foresight study. It is a collection of stories, articles, interviews, and infographics, which are presented with the explicit aim of thinking about the future while aiming to make the present a better place. This edition was made possible thanks to the amazing work of the editorial team and board, as well as all the Journal's partners. This edition was realised in cooperation with the Heinrich-Böll-Stiftung European Union.

DOUGHNUT ECONOMICS FOR A THRIVING 21ST CENTURY

AN INTERVIEW WITH
KATE RAWORTH
BY **TINE HENS**

"What's the silver bullet?" This is the question Kate Raworth hears all the time. As an economist and author of *Doughnut Economics*, her take on the steps society needs to take in the next 30 years is as simple as it is clear. "Bullets are for killing. I'm more interested in a golden seed. What do we need to plant so we can make the design of our institutions, financial systems, and economic framework regenerative and distributive?"

TINE HENS: **According to *Doughnut Economics*, how do we shift our economic system so that it meets the need of the people within the means of the planet?**

KATE RAWORTH: We just do it. That's how. We table the laws that need to be tabled. We start creating legislation and practices as if we actually believe we're going to do this instead of endlessly talking about why we can't do it. Take the financial system. It should be in the right relationship with the only set of laws we can't change: the dynamics of the Earth system. We do not control the climate – we can change it, but we don't control that change – we do not control the water cycle, the carbon cycle, the oxygen cycle, nor the nitrogen cycle. These are the given of our planet. We need to redesign all our institutions so that they are in the right relationship with the cycles of the living world and so that they are distributive by design. To change design, we need laws and regulation. That's why Europe could lead here, with its power to set regulations across 28 – for now – countries.

What kind of regulation and laws are crucial?

KATE RAWORTH: Let me first explain why laws and regulation are key. Ultimately, economics is law. Not the kind of laws the neo-classical economists invented to prove that economics is a science as solid as Newtonian physics. The law of supply and demand, the law of the market, the law of diminishing returns: there are no such things as these fixed laws that underpin the economy. It's just a kind of mimicry of how science works. Economics is a dynamic system that's constantly evolving and so there are no laws, there's only design. In the 21st century, this design should be regenerative, so that our material and energy use work within the cycles of the living world and within planetary boundaries. But it also needs to be distributive, so that the dynamics of the way markets behave don't concentrate the value and returns in the hands of a 1-percent minority – which it's currently doing – but distributes them effectively amongst the people.

So, coming back to your question, how are we going to get there? Through regulating the design of the economy. Neo-classical and neo-liberal economists are too focused on the price mechanism. Putting a price on fossil fuel can be a good tool, but it's not enough. Ultimately, we must transform the basics of all production. And doing that is not asking the company accountants how they can optimise their tax position against some new tax or price mechanism. No, it's forcing the company designers to review the heart of their process. Deciding, as Europe has done, to ban single-use plastics from 2025 or plastic bags as of next year is a clear-cut regulation and it will affect the core of the plastic and packing industry. Industry players can't just recalculate their expenses, they have to redesign their bottles and reorganise their supply chain. The change law and regulations can bring is, in the long run, much more fundamental than what a price mechanism can do. If you want to change the world, you have to change the law. That's becoming increasingly clear to me.

The European Commission published its vision for a zero-emission Europe in 2050. Let's imagine this is the year 2050. What does our economic system look like?

KATE RAWORTH: Is this a world in which we win or lose?

That's your choice.

KATE RAWORTH: I'm more interested in the world in which we win. So we've arrived in the thriving 21st century. The EU will have renamed and redesigned its policy department DG Grow into DG Thrive and economists will have woken up to complexity and will bring the language of system dynamics into their models, recognising that nothing is stable. The Stability and Growth Pact is seen as very out-

dated and has been renamed and rewritten as the Resilience and Thrive Pact.

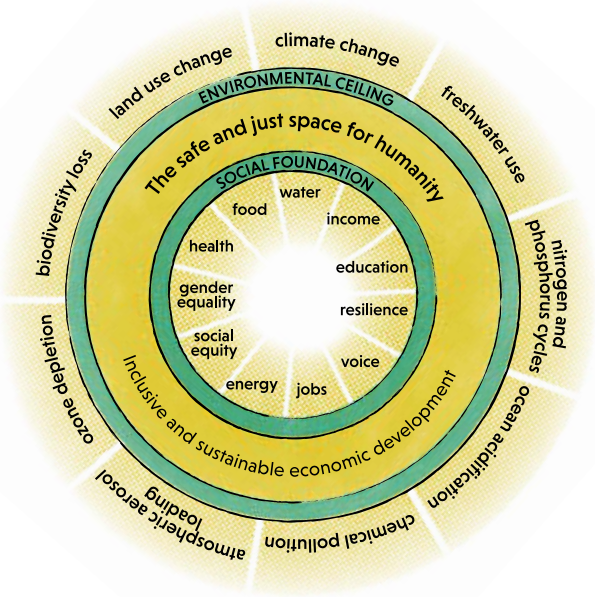
Different EU departments would look at any incoming policy and ask, 'is this part of a regenerative and distributive design?' That will be the main touchstone: does this policy take us closer towards working and living within the cycles of the living world and is this policy predistributing the sources of wealth creation so that we actually create a more ecological and equitable society. Because all research we know of, even from the International Monetary Fund, confirms that in a highly unequal society the economy doesn't thrive. I would like to see DG Thrive annually reporting on the doughnut concept showing us the extent to which European countries are putting policies in place that are taking us back within the climate change boundaries, reducing biodiversity loss, regenerating living systems, and reducing soil deprivation. I'm not expecting we will be there, but we're clearly in the process of moving towards this point.

How would financial markets react to replacing DG Grow with DG Thrive?

KATE RAWORTH: First of all, we'll put the money in service of the economy and the people instead of the other way around. Ownership and finance are crucial for the change and transition we desperately need. I call it the "great schism". Often there's this tremendous gap between the purpose of a company – most companies want to do good – and the interests of the shareholders, who I like to call "sharetraders". It's the schism between the 21st-century regenerative enterprise and the extractive, old design of the last century. If you're owned by the stock market, by these pension funds or investment houses that are more concerned about fast returns on investment than about returns on society, it is just impossible to become a generative company that not only wants to do or be good, but also give back to society. I met somebody working in a pension fund. "I'm head of responsible investment," she told me. "Well, who's head of irresponsible investment?" I asked. "Me," a man next to me said. One day, and I hope sooner than later, we won't have that division anymore. Again: it comes back to the design of an institution. Finance is a design, money is a design, and there's a power holding on to the design we have now because it means financial returns for a few.

Replacing 'grow' by 'thrive' is not just a matter of switching words, it's rebooting the economic system, and also social security. How will we pay for welfare and pensions without economic growth?

KATE RAWORTH: What always strikes me with this argument is the presumption that social security is money flushed down the drain, so to pay social security always requires more



'The Doughnut: a 21st-century compass. Between its social foundation of human wellbeing and ecological ceiling of planetary pressure lies the safe and just space for humanity.'[1]

money. That simply isn't true. Social security is a redistributive mechanism. Because the ownership of the economy is so skewed, the worst off in society have almost no means to earn an income and they certainly don't have access to the sources of wealth creation, so income is redistributed to make up for this system failure. But it's not like recipients of social security are tucking the money under their mattresses; they're investing it again in the economy to serve their most basic needs like food, heating, housing, and transport. It regenerates the economy from the grassroots, but the mentality that money we pay into social security is money gone has stuck. That's the first thing we have to change.

But we have to dig deeper. Why redistribute income if the economy can be distributive by design? By enabling people to start small and medium enterprises, to be employees that have an enterprise share – like John Lewis in the UK does, although there are many more examples of employee-owned businesses – by enabling people to generate energy and found their own energy cooperatives. This is the unprecedented opportunity: distributive energy, distributive communication, the rise of open source – distributive design that has the potential to become a transformational way of producing goods and services where we predistribute instead of redistribute.

There's another argument I'd like to debunk. It's based on Okun's law, another economic law that turned out to be more of a correlation and a passing dynamic than a law.[2] In the 20th century, there was for a very long time a tight relationship between a growing economy and full employment. Politicians

1 Kate Raworth (2017). *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist.* London: Random House Business Books.
2 Okun's law holds that there is an inverse relationship between the growth rate of real GDP and the unemployment rate. For unemployment to fall by 1 per cent, real GDP must increase by 2 percentage points faster than the rate of growth of potential GDP.

still think they need growth to create jobs, but in fact it was passing dynamic. In many companies, an increasing amount of money created goes off to shareholders, while wages decrease. If Okun could see that we now have GDP growth and flat and decreasing wages, he would say, "I was wrong with my law, it's a design." There was indeed a moment in time where the returns of economic expansion would go to the workers, but now we've got shareholder capitalism. Many politicians today are over the age of 40. They had the same economic education that I got, which put the market at the centre and growth as the goal, there's a long payoff of old economic thinking.

PUTTING A PRICE ON FOSSIL FUEL CAN BE A GOOD TOOL, BUT IT'S NOT ENOUGH. WE MUST TRANSFORM THE BASICS OF ALL PRODUCTION

But isn't this idea of post-growth or even degrowth very Western-focused? It's quite easy to assume your economy should stop growing after reaching a certain level of welfare.

KATE RAWORTH: Sure. I lived for three years in Zanzibar, Tanzania, where there were many people living without shoes, without a toilet, without enough food to eat every day. Those people deserve and have the right to education and healthcare, access to mobility, and to feel their children will thrive. In the process of leading them to more thriving lives, I fully expect the amount of goods and services sold through the market to increase. A healthy market increases the goods and services sold, as should the commons. There should be an increase of technologies that enable households to thrive, technologies that enable women to need to carry less water and fuel. I absolutely expect their economies to grow and use more material resources. That's precisely why high income countries need to get off the treadmill.

But I don't desire their economies to grow indefinitely. That is simply not possible within the planetary boundaries. Nothing in nature grows forever, unless it is a mortal disease. All the countries of the world are somewhere on this growth curve. Some are ready to take off, others have landed. Countries like Zambia, Nepal or Bangladesh are desperate for growth to meet the people's needs. They look at a country like the Netherlands or Belgium that live on astronomical incomes, and all they want is just to have more? This is evidence of the absurdity of the growth obsession: no matter how rich a country already is, the policymakers believe that the solution for every possible problem is still more growth. It's nothing less than a sign of an addiction – a dangerous addiction. Because the social

and ecological impact of a system that demands endless growth is, well, growing. It degenerates and runs down all the other parts of the system that make it possible to thrive in our personal lives.

What's the reasonable possibility that changing DG Grow into DG Thrive will happen?

KATE RAWORTH: I want to be unreasonable. Reasonable is always rational. "Be reasonable, dear, don't dream." But we have to dream! Otherwise, they'll always put us back into the box. It's time to rise up and be unreasonable. There is every possibility it can be done. It's about shifting mindsets and perspectives. Environmental scientist Donella Meadows, who wrote about system change, said, "Shifting the mindset is the most powerful leverage point." On an individual level, it can happen in a millisecond. In the blink of an eye, the scales fall away from the eyes and we see things differently. Changing a whole society, that is something else. Societies fight like hell to resist a changing paradigm. That's what we experience today.

The International Panel on Climate Change's 2018 report made it clear that we have just 12 years to improve climate policies if we're to reverse climate breakdown. Do we have time for system change?

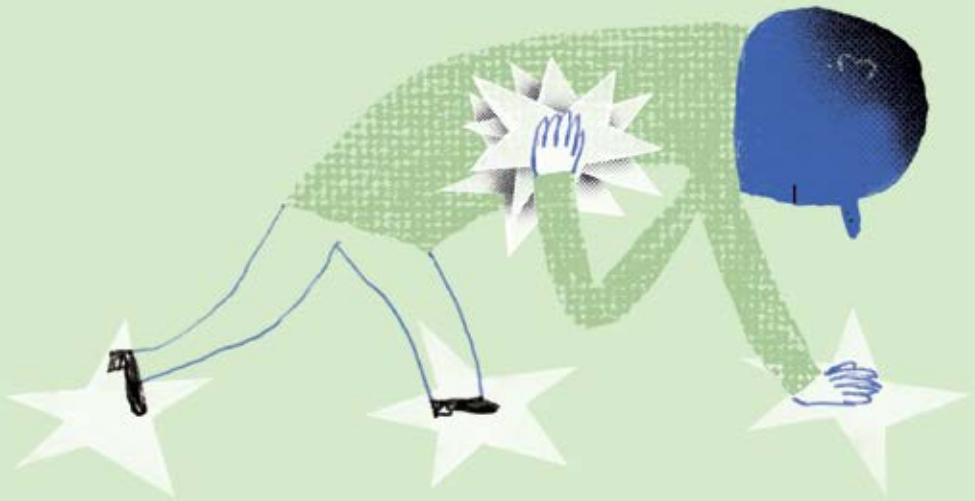
KATE RAWORTH: Since the report came out, a lot people have brought this up with me, responding like rabbits in a headlight and saying, "We're running out of time. We can't aim to transform systems anymore. We have to stop being ambitious and work within the system as it is." I think that's dangerous. It's a thought that can immobilise people with fear and despair. But it is also a tactic of many who resist change, denying the problem or putting it off until it's too late to solve it. We'll never get where we need to be if we suddenly grow pragmatic and don't aim for an economy, institutions, and a financial system that's regenerative and distributive by design. We can't afford to aim for less.

KATE RAWORTH
is an economist at Oxford University's Environmental Change Institute and author of *Doughnut Economics: Seven Ways to Think like a 21st-Century Economist* (2017).

TINE HENS
is a journalist on climate change for MO* and author of *Het kleine verzet* (Epo, 2015).

EUROPE'S TOMORROWS

The debate on the future of Europe goes well beyond institutions and treaties, it is about shared values and a collective vision. Today's dilemmas, from protecting the rule of law and managing migration to redistributing wealth and finding Europe's place in a multipolar world, can be resolved with the right mix of cooperation, ambition, and political will. The structures of the Union will be at the centre of those efforts, which will need to involve social partners and movements as much as governments or politicians. Stories, conversations, and reflections – five contributions take us to 2049, portraying a Europe that, while still far from perfect, has come a long way.



EUROPE: THE NEXT ACT

The last 10 years of political crises in the European Union take the form of a play in Luuk van Middelaar's *De nieuwe politiek van Europa*. Through the dramas of recent years, this interview with the Dutch historian carries us from the EU's postwar foundation to the year 2049, sketching out what the return of European politics could mean for the decades to come.

LAURENT STANDAERT: In contrast to the dominant views of Europe as either a federalist or an intergovernmental project, you distinguish three approaches to the EU's construction. What are these approaches and how do they relate to today's EU institutions?

LUUK VAN MIDDELAAR: Three approaches to how a future Europe should be built have been around ever since 1945 and each is reflected in its favourite institutions. One could be described as a functionalist and technocratic approach which forms to some extent the DNA of the European Commission, the Court of Justice, and even the Council of Ministers. This was the Jean Monnet method and it laid the foundations of what became the European Economic Community. This approach claims that we need to take the political out of politics and transform conflicts into technical problems to be solved. The second, federalist approach has been rather centred around the European Parliament. It bet on a European Parliament to create a European public sphere and saw it as a step towards more supranational competences. The third, more confederal approach is embodied by the European Council – which I clearly distinguish from the Council of Ministers – involving national leaders and governments. This approach Europeanises national spheres and brings a different sort of authority to European affairs. The European Council has taken on a more prominent role in the past 10 years, not because of personalities or any kind of conspiracy, but because Europe had to deal with certain existential shocks and crisis moments. These moments required a different kind of political action.

1 Luuk van Middelaar (2017). *De nieuwe politiek van Europa*. The Netherlands: Historische Uitgeverij.
Also available in French (*Quand l'Europe improvise. Dix ans de crises politiques*. Gallimard 2018) and coming soon in English (*Alarums and Excursions. Improvising Politics on the European Stage*. Agenda Publishing 2019)

In your book you designate the period from 1945 to 1989 as a sort of slumber, if not coma, from which European politics only really reawakens in 2008 to 2018.[1] Why did it take so long?

LUUK VAN MIDDELAAR: I really consider 1989, or the period from the fall of the Berlin Wall in 1989 until the entry into force of the Maastricht Treaty in 1993, as a turning point or even as a second foundation of the European project. Many of the metamorphoses we have seen in the past 10 years were 'being prepared' back then. It was the first time that member states realised they would also have to deal, perhaps not immediately but at some point, with security and questions of sovereignty and that the American Cold War umbrella would not last forever. Some back then, and not only the French, even called for European defence. Today we see this shift with Donald Trump and the US government no longer giving security guarantees to Europe. Of course, it was also when the creation of the euro was decided.

None of this was really acted upon in 1989 because the end of the Cold War was for the European continent a moment of politicisation that was immediately captured by Francis Fukuyama's idea of the "end of history", which became dominant in the West and to some extent paralysed Brussels for years. This idea that the world would follow the path of capitalist liberal democracies to the end stage of world history, with transitions in Eastern Europe, China joining the World Trade Organization, and the US fighting for democracy in the rest of the world, was a political sleeping pill and a delusion.

The last 10 years of crises have brought what you term "events politics" back to the European scene. Why has the European Council been at the heart of these events and which moments stand out?

LUUK VAN MIDDELAAR: What the EU has been faced with required events politics, the political art of improvisation, as a way of taking quick and controversial decisions. For this, the European Council is the locus of power and authority. Its members do not pretend to be experts in everything but they are elected and have a relatively close link with their voters and the press, so with national public opinions.

One such moment was expressed in May 2010, with the famous Angela Merkel line that "When the euro fails, Europe fails." This was when the pressure of the markets was high and when then US President Barack Obama made phone calls saying, "For Christ's sake, save the euro." Another moment would be at the end of 2015 and early 2016, during the refugee crisis, with dramatic images and a sense that member states were losing control with hundreds of thousands of people entering the EU through the Balkan route. Another core European project – Schengen and free movement within the EU – was at stake. My third moment

would be the day after the Brexit referendum, 24 June 2016. There was a moment of panic that other member states would follow the same path and that the UK's departure would be the beginning of the end.

Where do you think the European Union will be in 2049?

LUUK VAN MIDDELAAR: I'm a historian and 30 years is a long time. Looking at 2049 requires looking at which world Europe could find itself in. It will be the centenary of communist China and the current Chinese president, Xi Jinping, has made it China's objective to be the number one country in the world in precisely 2049. An important question for Europe as a continent is where to stand between China and America. It is a key question which should underpin our policies and political decisions. Stakes are high as to whether Europe can become one of the poles in a multipolar world or whether it becomes a battleground for America and China, at least economically and not to mention – dread the thought – militarily. When Chancellor Merkel says, "We, Europeans, have to take our fate into our own hands" and President Emmanuel Macron talks about "European sovereignty", what they are really referring to is exactly that: how Europe is to become capable of defending its own interests within 30 years' time. Whether it's regarding digital economy, climate change, defence, or the euro as a global reserve currency, they are talking about Europe's capacity to act and shape its own future.

What could that mean for the EU's institutions and structure?

LUUK VAN MIDDELAAR: The executive power of the EU should evolve towards an improved and clearer understanding between the European Commission and the European Council. The European Council is the body you need for some of these far-reaching and controversial long-term decisions, and the European Commission brings the thinking power and executive follow up, together with its capacity to think for Europe as a whole.

From the legislative side, the European Parliament is of course an important player. It is more powerful than many national parliaments in the sense that it has a strong say as a co-legislator. But its weak spot is its link with the voters and public opinion, which one would have hoped to have improved over time. The Parliament's problem is that it has not really allowed opposition to emerge. For too long, it has been divided between a very large alliance expressing the Brussels consensus on what Europe and a more federal and supranational approach should be, and a few anti-European MEPs such as Marine Le Pen or Nigel Farage. But that is not a healthy democratic situation because it doesn't reflect the variety of views held across Europe.

Could the 2019 European elections be a turning point, with those who oppose the way things are run but that do not want to destroy Europe getting their say in Parliament?

LUUK VAN MIDDELAAR: Maybe. I think that what political leaders like Matteo Salvini of Italy's Northern League or Jarosław Kaczyński of Poland's Law and Justice party want to do is not to kill or leave Europe, but to change it. As an analyst, I can only say that on Schengen or migration it's good that such parties and politicians bring a different and (also) representative view that nourishes the debates and the public sphere both at the European and national levels. During the refugee crisis, it is clear that the Hungarian Prime Minister Viktor Orbán played an important role by opposing the EU approach driven by Brussels and Berlin. Without excusing his undermining of democracy at home, proposing policy alternatives on migration and identity was important, whether I like it or not. A genuine opposition within the theatre of European politics had never existed in the past.

Values such as democracy, human rights, and the rule of law underpin the foundation of the EU. Could the EU disintegrate or split over such values in the next 30 years?

LUUK VAN MIDDELAAR: Yes, I think it could. What you describe as values are part and parcel of Europe's identity and image of itself. A club of democracies. These days you can see a potential division between the Union as a space of values such as democracy, rule of law, and freedom, and as the political expression of the European continent. Imagine the exit of Hungary or Poland. It would be as disruptive as Brexit and it would go against the post-1989 European vocation to heal the wounds of the Cold War and bring the continent together. I think these kinds of tragic dilemmas will arise in the coming decades and cause many political headaches. Looking 30 years ahead is about talking about these dilemmas and choices frankly in the public debate because the 440 million Europeans remaining in the EU are not crazy or stupid – they're voters. They know the world is changing, they know about climate change, about China, about migration, about welfare state reforms. People are ready for the choices, provided they are set out in this wider geopolitical landscape. That requires a real politicisation of Europe and political courage and energy.

LUUK VAN MIDDELAAR is a political theorist and historian. The author of the prizewinning *The Passage to Europe* (2013), he will next publish *Alarums and Excursions* (2019), a groundbreaking account of the EU crisis politics.

TRANSNATIONAL DEMOCRACY? A PIECE OF CAKE

Thinking back, the foundations were always there. It is just that the missing pieces were crucial. But once the pressures from below were channelled into a truly democratic Europe, everyone was the better for it.

29 high-school students, some of the brightest from right across the European Union, are sitting in the local citizen assembly building in Ebeltoft, a picturesque Danish port town located on the Djursland peninsula just a few kilometres east of Aarhus, the country's second city. Elias Dumoulin Marcelino arrived a few days ago from Lisbon to take part in an Erasmus+ civic education workshop. He will be giving a lecture on the recent history of democracy and rule of law. In just a few weeks' time, voters will be heading to the ballot box for the 2049 elections, and he'll be trying to explain the historical significance of that which now seems obvious. Why did it take Europe so long to get to where it is today? Transnational democracy and the protection of the rule of law at the European level – once so remote – are now part of the political furniture. It was all just a matter of will – as soon as there was some momentum, it happened in just a few years.

In the early 2000s, federalists used to say: "Make the EU at least as democratic as its member states." Back then, this mainly meant that citizens should be able to elect the European Union executive, as Europeans have done for some time now. Today, there are two ballots in the European elections: one to elect the members of the European Parliament and the other to choose a transnational list that determines the composition of the European Commission. Parties now have pan-European programmes and campaigns as well as lead candidates who visit all member states. It might sound petty, but just a few decades ago European elections were all about domestic issues.

EUROPEANS WENT ONE STEP FURTHER

All this sounded quite ambitious in 2019 – almost no one dared to think of a European democracy more democratic than the nation-states were back then. Democracies of the early 2000s were all based on 18th, 19th, and 20th-century rituals, procedures, and frameworks that no longer responded to hyperglobalisation or the new millennium's technological challenges.

The European democracy as it exists today – representativeand deliberative – seemed

almost unimaginable. All difficult decisions are now worked on for months by citizens themselves, not just by unelected experts who think they know better. Europeans come together in citizens' assemblies, fora to deliberate over all kinds of issues: from corruption and climate change, to constitutional questions and infrastructure projects. Not limited to in-person gatherings, thanks to communication and translation software, everyone can participate in real time. These transnational assemblies of European citizens work on all matters of public interest. First, they prepare a list of recommendations for their representative institutions, and then, once there is a satisfactory law on paper, they disband.

THE POWER OF SOCIAL PRACTICES

An important step towards our transnational human rights regime was the step-by-step creation of social practices. The work of NGOs, foundations, and even governments in the EU created the necessary conditions for rights' defenders to be able to litigate in the Court of Justice, the same way as they used to litigate in the European Court of Human Rights. Once civil rights organisations discovered the Charter of Fundamental Rights of the EU and started going to the European Court of Justice to protect the rights therein, member states inevitably changed their attitudes towards their own citizens and afforded more respect to their established rights.

An important milestone in this process was the creation of the European Civil Liberties Union, a pan-European human rights association. Today millions of citizens are card-carrying members and support the organisation through membership fees. This Civil Liberties Union sends complaints to the national courts, which can go all the way up to the Court of Justice of the European Union. One of their landmark cases was Simon vs. Hungary, in which the Civil Liberties Union represented the Hungarian high-school student Kristina Simon, who had criticised her government in a speech at a rally in her hometown of Pécs in south-western Hungary. In retaliation, she was expelled from school, national media outlets published articles about her poor grades and frequent absence from school – even some of her private communications made it into the press. The government went as far as to make a reference to her case in its national consultation. Sent to 8 million people across the country, the survey cited her example to ask whether there was need for more discipline in schools.

The court ruled in favour of Simon. But more importantly, her case highlighted the Hungarian government's disregard for human rights and the story of a teenager under attack from her own government sparked a wave of international solidarity. The Hungarian government found itself isolated and was forced to cooperate with the opposition and civil society on new legislation to prevent such things happening again.

"The Union contributes to the preservation and to the development of these common values while respecting the diversity of the cultures and traditions of the peoples of Europe as well as the national identities of the Member States and the organisation of their public authorities at national, regional and local levels; it seeks to promote balanced and sustainable development and ensures free movement of persons, goods, services and capital, and the freedom of establishment." – Preamble to the Charter of Fundamental Rights of the European Union.[1]

THE WISE PEOPLE OF EUROPE

To monitor the overall situation with the rule of law, European politicians have created a wise persons' committee: the Copenhagen Commission. This new body is tasked with evaluating, assessing, and ensuring the continuity of the Copenhagen criteria after a member state has entered the European Union.[2]

Once the members of the commission find problems in the field of rule of law, human rights or democratic values in an EU country, their task is to hit the alarm button. And when this institution – which works closely together with the Agency for Fundamental Rights but is independent from EU institutions and governments – raises the alarm, their preventive judgments have a high level of credibility. Thus, member states can no longer argue that they are being singled out for political reasons.

30 years ago, it was the European Parliament that carried out this kind of work, as it did in the cases of Hungary and Poland. However, the European Parliament is a political institution: national governing parties belong to pan-European parties, who tended to defend their own people when push came to shove. In those days, gentlemen's agreements between party families in the European Parliament often resulted in inaction, and the Commission and the Council were similarly paralysed.

SUING YOUR GOVERNMENT

To make democracy truly transnational, the people of Europe also had to take ownership of the Charter of Fundamental Rights of the EU throughout all jurisdictions. This document included 50 articles and contained some of the most advanced protections of human rights – from privacy and the environment to labour and property rights. But there was one major problem: the charter's Article 51 limited its application to the European scale, and therefore it could not be used inside a member state's juridical system.

A group of visionaries set about to overturn this situation. Among them was the Greek

1 The Charter of Fundamental Rights of the European Union gained legal effect with the Treaty of Lisbon in December 2009. It was the most developed and comprehensive legally binding human rights instrument in the social field of the European Union, and the first instrument that included both civil and political rights as well as social rights.

2 The Copenhagen criteria, or accession criteria, are the conditions all candidate countries of the EU have to satisfy. In 2019 they only applied to candidates, and therefore lots of member states started to backtrack once they had joined. The criteria include measures concerning the stability of democratic institutions, the protection of minorities, and a functioning market economy.

lawyer and co-founder of the European Civil Liberties Union Yannis Rovithi who started a campaign to abolish Article 51. Peaceful demonstrations in which students, farmers, blue- and white-collar workers expressed their desire for a European human rights framework quickly spread from Thessaloniki and Athens to other European cities (there were even some village communities that staged their own protests instead of joining rallies in the cities). Soon politicians and national governments realised that there was no way around this popular desire. Article 51 was scrapped through a unanimous decision in the Council of the EU. Today, European citizens, and other people covered by the charter – such as refugees and foreign residents – can turn to any court, national or supranational, to enforce their rights, and they can directly sue member states for their offenses and even EU institutions when they fail to act.

A TRANSNATIONAL POLITY

It was not so terribly hard to introduce all these changes. In hindsight, one could even say that it was a piece of cake. But to get to there, Europeans needed to completely change their mindset. Throughout European history (and well into the 20th and early 21st centuries), thinkers have pushed their ideals into the far future. When Immanuel Kant wrote about cosmopolitan democracy, he implied that it might take generations for people to have rights beyond borders.

Fortunately, there were some visionaries who realised that, at the turn of the 2020s, Europe and the world were entering a different stage of history. Tensions in international politics, ecological crisis, as well as the pressures that technology and artificial intelligence put on European polities, all pointed to the need to forcefully build transnational democracy.

It is probably safe to say that, had they not created a transnational polity with fundamental rights and vigorous democratic values, the European Union would have either disintegrated or at least gone through seriously turbulent times. But they made it, and today's transnational European space of democracy and human rights is not just an empty shell; its value and importance are self-evident in the everyday lives of its citizens.

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THE EUROPEAN REPUBLIC ON THE WORLD STAGE

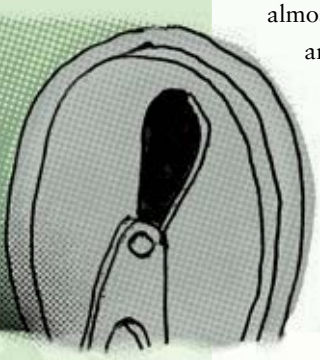
Thinking back to the multilateral world of conferences she had once studied, Sofia knew that the lessons of the 20th century world would only get Europe so far in the hard-nosed global contest that had emerged since. She wasn't prepared to drop all her ideals, however, but was to pursue them with a realist zeal.

Tbilisi, 9 May 2049. *Euvropi Shakli* [House of Europe]

How the city has changed...

Sofia Belver-Tamarashvili leant out of a window in the House of Europe's vast office. How the whole country has changed since it joined the European Union.

Actually, we don't say EU anymore. We just say 'Europe' – ever since the Great Reconstruction of 2033 and the Treaty of Athens, which made amends for the mistakes that followed the 2008 financial crisis. After almost a century of existence, the European project has matured, grown and changed. It overcame the dark days of the 2020s and the trendy fascism of an entire generation of leaders – young, macho, energetic, xenophobic, and authoritarian. The walls of their Fortress Europe eventually fell, but Europe remained standing.



And for 10 years, Sofia has been in charge of its foreign policy.

It was in this capacity, that very morning in her home town, that she had opened proceedings at the conference on 'Middle East Peace and Regeneration' a region devasted by a flash conflict lasting several months in 2047. Millions dead, unimaginable destruction and the use of tactical nuclear weapons, shamelessly and cynically supplied by Washington and Beijing to live-test their military technology in a theatre of operations incidental to their interests since the energy transition of the 2030s had rendered oil obsolete.

A victim of collateral damage, the United Nations – already weakened by the short shrift it received from Trump and his successors and discredited by its own impotence – did not survive. Since 2048, Europe has been on manoeuvres. The only power still driven by a sense of duty to stand up to the egocentric giants, the European Republic is at last more than just an actor on the international stage: it *is* the international stage. Both mediator and leader, its mission is to pull the belligerents out of the spiral of violence and open the way for cooperation, despite the reluctance of certain partners.

"What do you think, Adrian?"

"I think it's in the bag. The Americans know they screwed up big time and must shoulder most of the blame for the march to war. Even indirectly, it's their fault if all that's left of Riyadh, Tel Aviv, and Tehran are gaping craters. The region has been flattened by the nukes with which they complacently supplied their puppets, and now they have 3 million deaths on their conscience to share with Beijing... So at first they'll pretend that they're not thirsty, but eventually they'll end up downing the Europe-made SaveOurSouls potion in one. We're saving their arses. Kagan can strut around like it's Austerlitz, but really it's Waterloo. She's just trying to spin this mess to her advantage by blaming the previous administration so it doesn't compromise her presidential hopes..."

It was a rhetorical question, of course. But the bombastic, slang-peppered language of her young special advisor always made her smile. Adrian Veseli, a Romanian environmentalist, polyglot, and PhD in Gandhian studies, is also a diplomat of sharp intellect... and coarse language, perfectly cut out for the power-plays that still shape international relations.

Just like Emily Kagan, the main adversary in this multiplayer game of chess. The American Secretary of State is a creature of power. Aggressive beauty and manipulative intelligence have rewarded her with political success. Her stint as Secretary of Defense in the brief and only Democratic administration post-Trump in 2036 left the top brass with fond memories. Her strong will and forceful language swept away the prejudices of macho American culture. Between them, Emily Kagan and Jennifer Rodriguez, the ultra-conservative Latino Republican president who held office from 2028 to 2036, certainly changed the face of post-Trump America, if not the tone. They brought less vulgar nonsense, but just as much aggressiveness and defiance towards their partners. Less idiocy, but more cynicism.

Adrian remains cautious, but Sofia has no doubt: Emily Kagan will be the next president of the United States. She will be a formidable adversary, a seductive ghost from the old world. They will try to undermine the brutal power relations and sterile politics that Kagan brings, which have always prevented humanity from viewing the planet as one big interdependent system.

These are the international relations that Sofia strives to change – both in style and substance – making climate, life, and human beings absolute priorities. Whether whales or bees, forests or ice caps, poor people here or indigenous people there, every facet of the diamond that is planet Earth merits public action – and must not be neglected. What with the fourth industrial revolution and sixth mass extinction, Sofia is constantly reminded that it is question of far more than 'corrective' action. It is about profoundly changing our vision of the world – and the economy. "Over three centuries, macho Western men have endangered millennia-old equilibria that women had nurtured. We must urgently restore these balances!" she explains, softly.

Non-violence, inclusion, dialogue, listening, welcoming: steeped in the lessons of transactional justice, well versed in the two-pronged political and spiritual approach of a 'syncretic' feminism, the former academic and historian of "heretical movements and political dissidence throughout the ages", as her bio put it, had, at 52, come to embody the European Republic. Georgian through her father, Spanish through her mother and European through her children, Sofia was today the face of Europe – and its phone number, ready to respond to all the Kissingers of the world.

"You see, Adrian, holding the violent accountable, making them face the consequences of their actions, avoiding the moralising judgements that put their egos on the defensive, using conscience to force them to atone for their excesses... our approach works... and Emily Kagan will have no choice but to come round to it, especially when she's president – despite what she may think."

"Especially under the unblinking eye of the emerging global community," he agreed, pensively.

Finding the balance between carrot and stick, between the collective and the individual, between different levels... Making the planet the national interest: that was the grand ambition of this attempt at a global cultural and ideological reset. But by capturing imaginations tainted by the century of nations, from the very first months of her mandate they pulled off a

masterstroke that would cement her political credibility: they saved the oceans by granting them the legal status of a nation. “In a world divided into nations, what is the only right that can check the voracious hunger for territory and resources that marks the nation-state ideology? Another nation,” she had explained to her team. “A border to abolish borders. A state that trumps all others to destroy imperialism,” she had continued. “We’re going to subvert international law.”

And, in her big speech before the UN General Assembly in 2039: “The oceans are the source of life on Earth. This primordial soup has nurtured us and enabled us to grow. It is mother and father to us all. It is the place we were born – our universal *natio*.”

Then things happened pretty fast. The first regeneration programmes, which helped spur the gradual renaissance of the Aral Sea and halt the advance of the Sahara; the “Semper virens” initiative to protect and revitalise the Amazon, Indonesia, and the Congo; food programmes based on small-scale farming; a policy of converting tax havens to alternative development models based on research centres and networked university libraries – the appropriately named “Sofia” programme, one of Adrian’s ideas – and one which had so moved her that she couldn’t object. Education, culture, nature, women’s liberation, basic rights, migration, soft technologies, the commons... All European programmes rely on the same recipe for systematic change: break the mindset of linear development, empower local communities, and restore the natural equilibriums disrupted by extractivist economic models.

Minister Belver-Tamarashvili’s Europe had become the driving force behind a New Planetary Order, a guiding light for nations looking to escape the darkness of past decades. Some analysts call it a ‘feminist foreign policy’. *Foreign Policy* recently carried a feature on it, which was, unsurprisingly, very critical. But as the academic world seizes upon it, the doctrine asserts itself.

Sofia gazes at the three portraits on the wall, portraits that adorn every official EU office worldwide: Simone Veil, Vandana Shiva, and Michelle Obama flash bright, winning smiles back at her. Three lives, three careers, three inspirations.

Above all, Michelle Obama, who twice failed in her presidential bid. Not because she was black or female. But because her message of balanced, gentle firmness contrasted too sharply with the culture of force so engrained in American politics. Too nuanced, too inclusive, too much Venus, not enough Mars?

Was the emergence of this alternative foreign policy only really ever possible in Europe? She knew that two phenomena in particular had favoured this development.

First, the experience of the 'New Age of Man'. This decade of political and cultural masculinist reactionary hysteria in fact provoked a strong backlash. And by the mid-2030s, the Enough movement had swept away all before it, bringing to power a new generation of feminists who came of age in the shadow of a male domination that was as exaggerated as it was ridiculous. A politically engaged intellectual who had enjoyed a high media profile since the end of the 2020s, Sofia Belver-Tamarashvili was one of the leading figures of this quiet cultural revolution.

But most important of all, Sofia is not naïve. She knows that her words and ways benefit from the EU's accumulation of economic and military power over the decades, as well as from the greater weight the bloc carries on the international stage as a result. She knows that, since 2028, the EU has built up an independent military capability to underpin its diplomacy. She knows that the euro now lies at the centre of the international monetary system after the great dollar crisis at the end of Trump's second term, something that makes it easier to fund expensive programmes – and, at times, to exert subtle pressure to get its way, as it did at the end of 2036 to rein in Beijing's territorial ambitions in the South China Sea.

She knows that brute force hasn't gone anywhere. And she uses it.

"Subvert force to render it unnecessary. Make flexibility and moderation signs of strength." More than a motto: a practical philosophy.

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THREE FUTURES FOR TRADE UNIONS IN 2049

Climate change and digitalisation will shape the 21st century, but society's ability to determine the future should not be downplayed. How social movements such as trade unions, business groups, and political parties adapt to these trends will be pivotal in constructing the social model of the decades to come.

Thinking about the world in 2049 means imagining how society will be shaped by the two long-term trends that worry citizens today in 2019: climate change and the digital transformation of the economy that some refer to as the Fourth Industrial Revolution. At first glance, these trends appear to present separate challenges: the first is external and imposed by nature, while the second is internal and caused by our rewiring of production processes. We might, then, try to find solutions for cutting greenhouse emissions, on the one hand, and mitigating the social impacts of the digitalised economy, on the other. Strangely, these are seen as challenges to be tackled simultaneously but discretely, without any common narrative.[1]

But the roots of these twin challenges lie in the same reality: namely industrialisation, the original cause of climate change and the driver for successive waves of 'revolutions' in production patterns. So, in both cases, there is just one question to which we must find an answer: how do we transform this industrial model so that it creates wealth (Which wealth? How much?) without destroying the environment and social cohesion? Because, over a 200-year period of continuous growth and development, this model has never shown itself capable of functioning without the massive extraction and consumption of natural resources, and without an equally colossal generation of waste. Casting an eye forward to 2049 thus means considering the future of the industrial model, including agricultural production and international trade.

The first scenario is that of path dependence.[2] In other words: 2049 will reflect the sum of decisions made in the past, in this case, low climate ambitions, diplomatic conflicts, the decisive influence of industry lobbies, the continued widening of social inequality, polarisation, and so on. In short, 2049 will see today's industrial model continue to hold sway across the planet due to political weakness (and often complicity) and the enormity of profit at stake, without us ever managing to curb its negative externalities, except perhaps at the margin. The planet will gradually descend into socio-climatic chaos from which only a small minority will be spared.

1 Philippe Pochet (2017). Concilier deux futurs. *Notes de prospectives, #3*. Brussels: ETUI.

Increasingly authoritarian governments will prioritise competitiveness and, above all, maintaining the existing model in the name of vested interests. This scenario may seem completely irrational, but many "sleepwalkers", to recall Christopher Clark's causes of the First World War metaphor,[3] are tirelessly working on it: short-sighted political classes, entrenched lobbies, pro-business governments prepared to pay any price for decimal upticks in growth, investors willing to do anything for obscene returns, multinationals obsessed with maximising shareholder value and executive pay. Sleepwalkers who are reckless at best, criminal at worst.

A second scenario would see the industrial model adapted to meet the challenges of fighting climate change and maintaining social cohesion. It is the scenario of poorly named 'green capitalism', or rather social eco-industrialism: a combination of industrial production that generates profit for shareholders but also respects the environment and strengthens social justice. We will, supposedly, be on the cusp of this scenario by 2020: sustainable production, renewable energy, recycling and a circular economy. But despite there being near consensus, this vision remains improbable given that the industrial model has yet to prove it can reconcile these three imperatives and given that imbalances have almost always been resolved in favour of profit. To date, neither wind nor solar energy, nor the concepts of sustainable development and circular economy have managed to reduce greenhouse gas emissions, which continue to rise as GDP grows.[4] The only periods that have seen a worldwide reduction in greenhouse gas emissions have been those marked by economic recession: there have been just two of these since 2000. That is why this scenario looks unlikely today.

The third scenario envisages the collapse of the industrial model. Several factors could trigger this: an unprecedented global financial crisis and an irreversible economic shift as investment dries up; a world

2 Paul Pierson (2000). Increasing Returns, Path Dependence, and the Study of Politics. *American Political Science Review*, 94(2), pp.251-267.
3 Christopher Clark (2012). *The Sleepwalkers: How Europe Went to War in 1914*. New York: Penguin Books.
4 International Energy Agency (2018). *Global Energy & CO_2 Status Report 2017*. Available at <www.iea.org/geco>

energy crisis and spike in oil prices rendering the operation of machinery and the transport of goods exorbitant; prolonged downturns and social and political crises. The end of a model which, as the 2020s approach, would be accompanied by the rapid development of a series of alternatives that are already in their infancy today: a revival of producer cooperatives, the commons, energy democracy and local currencies, and the spread of open-source and peer-to-peer models, replacing the technology oligopolies that emerged at the turn of the 21st century.

Faced with the scenarios sketched out above, what does the future hold for unions in 2049? To answer this question, we must first look at the industrial model on which unions' foundations lie. Their fate depends on the future of this model. Yet, in the three scenarios we have looked at, unions enjoy a number of different possibilities.

The first – and gloomiest from a union point of view – would be for unions to simply disappear. In an increasingly polarised society, their members and legitimacy as representative stakeholders could be lost in a profoundly changed and insecure world of work. Or, alternatively, unions could become unwilling accomplices in a destructive model dependent on increasingly authoritarian forms of government to maintain growth.

The second would see their role paradoxically strengthened by the need, in the name of maintaining social peace, to tackle preoccupations with both the 'end of the month' and the 'end of the world', as alluded to by the *gilets jaunes* protests in France of 2018 and 2019. This scenario, which requires the building of new alliances, is a tall order as it involves reconciling social imperatives (jobs, working conditions, purchasing power, social and territorial cohesion), climate imperatives (cutting greenhouse gas emissions, adapting to climate changes, protecting against extreme weather) and industrial imperatives (transforming production processes, reducing natural resource use, reducing freight, increasing recycling and moderating consumption). Is this feasible? Can the industrial model adapt to social and environmental constraints on its development? In theory, yes. No structural obstacles stand in the way. But the greatest difficulty with this scenario lies in persuading the world's economic, financial, and political elites. For them, it would represent a paradigm shift. Achieving this goal would require a powerful alliance of socio-economic stakeholders, environmentalists, and citizens able to chart a course and leverage their strength. Losing this battle would mean victory for the previous scenario.

5 Albert O. Hirschmann (1970). *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States*. Cambridge, MA: Harvard University Press.

The third option, the collapse of the industrial model, would either see unions replaced by new, more flexible and ad hoc forms of social organisation (the emergence of citizens' groups, for example), or manage to adapt their structures to a more local, more collective, more participatory world. Creating new alliances could allow unions to play a larger, revitalised role in new areas: collective wellbeing, health, new forms of social security, housing, training. This world is close to the cooperative ideal. Production would be reorganised based on the commons model in a tenable and democratic manner: open systems, resources that are shared and managed by the community, who set the rules of governance. This model would no longer be one of big multinationals and their subsidiaries but one of smaller units that self-organise into networks in the spirit of Basque group Mondragon.

These three options reflect the same set of choices as that suggested by economist Albert Hirschmann: a choice between loyalty, voice or exit.[5] Union loyalty towards a sleepwalking industrial model that may result in defeat, or worse, corruption. Or a wider, reinvigorated, vocal movement (voice) to guide and accelerate the shift towards a new eco-industrial model with a strong social dimension. Exit, lastly, would see the alliance between industrialisation and unionism broken for good and would transform the union movement into – or replace it with – other forms of collective organisations in a yet-to-be-invented post-industrial economic model.

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FROM GLOBAL TAX DODGING TO WORLDWIDE WELLBEING

This week's publication of the European Union's latest 2049 wellbeing reports was met with the usual grumbling from government ministers and conservative commentators. Naysayers, however, ignore the prosperity that the 15-year-old system has brought and the wider changes this technocratic turnaround represents.

As every year, the 2049 wellbeing reports rate EU countries from red to yellow to green on a total of 25 indicators covering material conditions and quality of life. As in 2047 and 2048, the Romanian government was picked up for high levels of household debt, a long-term worry linked to automation and layoffs in the 2030s. Luxembourg was red-flagged on housing conditions, its ongoing population boom forcing more people into cramped accommodation and rent now costing 60 per cent of the average salary. Surprisingly, Scotland received a red flag for a decline in perceived health – the first in 25 years of independence throughout which the green windfall has been reinvested in social spending.

Incumbent governments do not always appreciate being reminded of what is going wrong. Some national representatives have again criticised the reports, leaning on the increasingly dated image of interfering bureaucrats, despite the dismantling of the EU's more disciplinary forms of governance. In the streets, polls continue to demonstrate that people overwhelmingly support the European Wellbeing Pact, which was introduced in 2034, appreciating how it highlights social issues overlooked in everyday debate. What is more, opponents forget that the pact is not punitive or even really finger pointing. In fact, it is enabling.

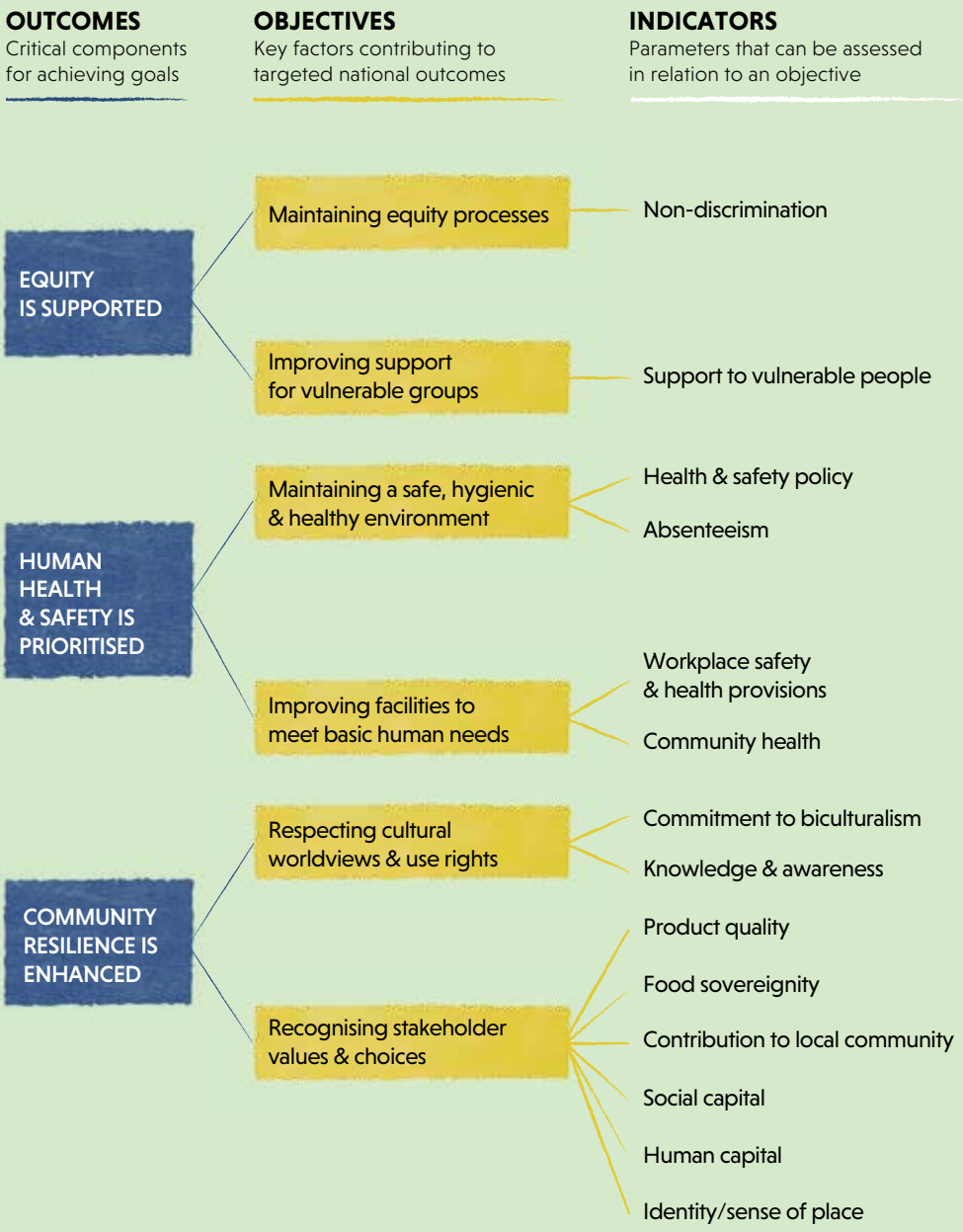
Countries that receive a red flag can anticipate low-interest loans from the European Investment Bank, on top of the standard wellbeing grants that the EU has dispensed in recent years. The EU now manages an on-average 130 billion euro wellbeing pot, raised through the International Fiscal Justice Initiative introduced by 145 countries in 2029.

Spending this money on wellbeing is the real source of ire for the Pact's opponents. Some critics argue that its 0.1 per cent financial transaction tax should go on defence, others that revenues should be passed on to individuals through tax cuts. A further camp resents that a tax on trading exists altogether.

But the fact is that the EU countries chose to pool their portion of the global tax initiative, which has significantly stabilised the global economy, and to channel it into wellbeing. Despite its fuzzy complexity, the concept of

By 2019, research on social wellbeing had made good progress and frameworks like this one from New Zealand were pointing towards more holistic upgrades on the economic headline figures of the past.

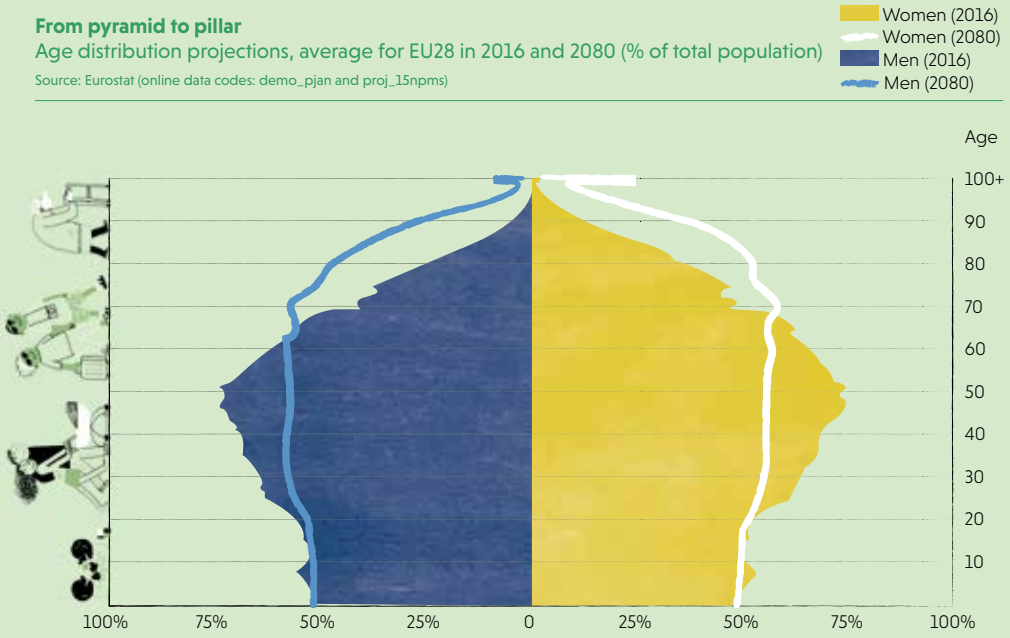
Source: New Zealand Sustainability Dashboard Project <bit.ly/2TqZD1Q>



From pyramid to pillar

Age distribution projections, average for EU28 in 2016 and 2080 (% of total population)

Source: Eurostat (online data codes: demo_pjan and proj_15npms)



wellbeing was picked up on precisely because of the common feeling in the 2010s and 2020s that the way in which politicians talked about the economy bore little relation to reality.

It is funny to remember the weight that certain economic statistics held. In Europe, governance by abstract value was enforced through tools such as the now-defunct Stability and Growth Pact. Overseen by EU institutions, this treaty compelled struggling regions of Europe to cut spending to meet deficit targets on the logic that public cuts today would encourage private investment tomorrow.

Two numbers in particular were considered the keys to economic success: gross domestic product (GDP) and unemployment. But by 2019, GDP was no longer equated with social progress, as it had been for a long time. GDP was well suited to counting output in an earlier industrial era, but it failed on other accounts, excluding as it did environmental costs and unmonetised exchange and interaction. But as the technology and data-driven expansion of the late 2010s and 2020s failed to materialise and productivity continued to plateau, the relevance of growth as a catch-all figure was lost.

Unemployment too came to lack credibility as a measure of prosperity. From the 1970s, governments gave up on the 20th-century post-war goal of full employment and relied on the self-correcting market to create jobs, with insecure work increasingly permitted. Within employment figures, people involuntarily underemployed or juggling multiple jobs were included alongside those fortunate enough to retain stable employment. The tendency of statisticians to massage the numbers further damaged faith in their significance.

Some were ahead of the curve when it came to realising the flaws in reliance on a handful of statistics. In the 1980s, academics began to devise new measures of development. But while international organisations such as the United Nations introduced more comprehensive indices, their influence took decades to permeate the political sphere. In 2009, the EU institutions moved to engage with ‘beyond GDP’ but dropped

the idea during the First Eurozone Crisis. By 2016, even International Monetary Fund researchers were pointing out that neoliberal policies designed to boost growth were driving inequality within and between countries, undermining future prosperity all round. Throughout this period, scholars and activists pushed the debate forward, but only the democratic turn against managerial policymaking in the mid to late 2020s, foreshadowed by the right-wing populism of the 2010s, sparked a real shift.

This decline in the relevance of stand-alone statistics is only the backdrop to today's embrace of wellbeing; rupture was needed, too. In the years after the Second Eurozone Crisis of the early 2020s, two governments that were prepared to break with the status quo entered national office. First, a progressive, liberal coalition in Germany took power and announced wellbeing and carbon neutrality as its twin objectives. Reversing rising precariousness and taking climate action had been at the centre of the campaign. At almost the same time, in Italy newly elected left-green forces announced heavy investment in urban infrastructure and renewable energy and excluded this spending from debt-to-GDP calculations. Markets at first reacted with panic. Public debt levels had been battered from 2022 to 2025, but the open backing of the German chancellor, impressed by the detailed proposals, and widespread support from economists calmed market fears.

This unlikely alliance soon embarked upon treaty renegotiations from which the European Wellbeing Pact eventually emerged. The 2029 global clampdown on tax avoidance that accompanied the International Fiscal Justice Initiative was a necessary condition to displace the EU's emphasis on growth, debt, and competitiveness. While the Global South was a big winner, and began to reclaim missing trillions, and Caribbean tax havens were amply compensated too, the restored revenues also gave Europe room to reform its troubled Eurozone. As for the new global tax, a substantial wellbeing fund proved to be the most consensual way to share it out.

Wellbeing's critics are right to say that the Pact's indicators are more complex than measures used in the past. But not only are they more meaningful, they reflect the wider democratisation of the economy throughout the 2030s. Today in 2049, GDP and debt levels continue to be measured, unemployment still matters, but they are no longer total proxies for the quality of everyday lives. Now the numbers put people first.

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is editorial assistant at the
Green European Journal.

A WALK ON EUROPE'S WILD SIDE

ARTICLE BY
SAMUEL GREGORY-MANNING

For millennia, human development had been built on ever-greater encroachment into the natural world. However, the biodiversity crisis of the early 21st century signalled the limit. Faced with the destruction of vital ecosystems, rewilding opened up a path to restoring the prosperity and productivity of the natural world.

From the year 2049, we can look back on 2019 as a turning point for the continent of Europe. Set to miss its targets to halt and reverse the erosion of biodiversity by 2020, the European Union stood at the precipice of environmental catastrophe. And yet pockets of resurging wildernesses offered hope and foreshadowed the drastic shifts in European societies and political priorities of the last three decades.

In 2019, wildlife in Europe was making a quiet, yet triumphant comeback, in part thanks to rewilding: conservation schemes in which lost species are reintroduced to restore ecosystems.

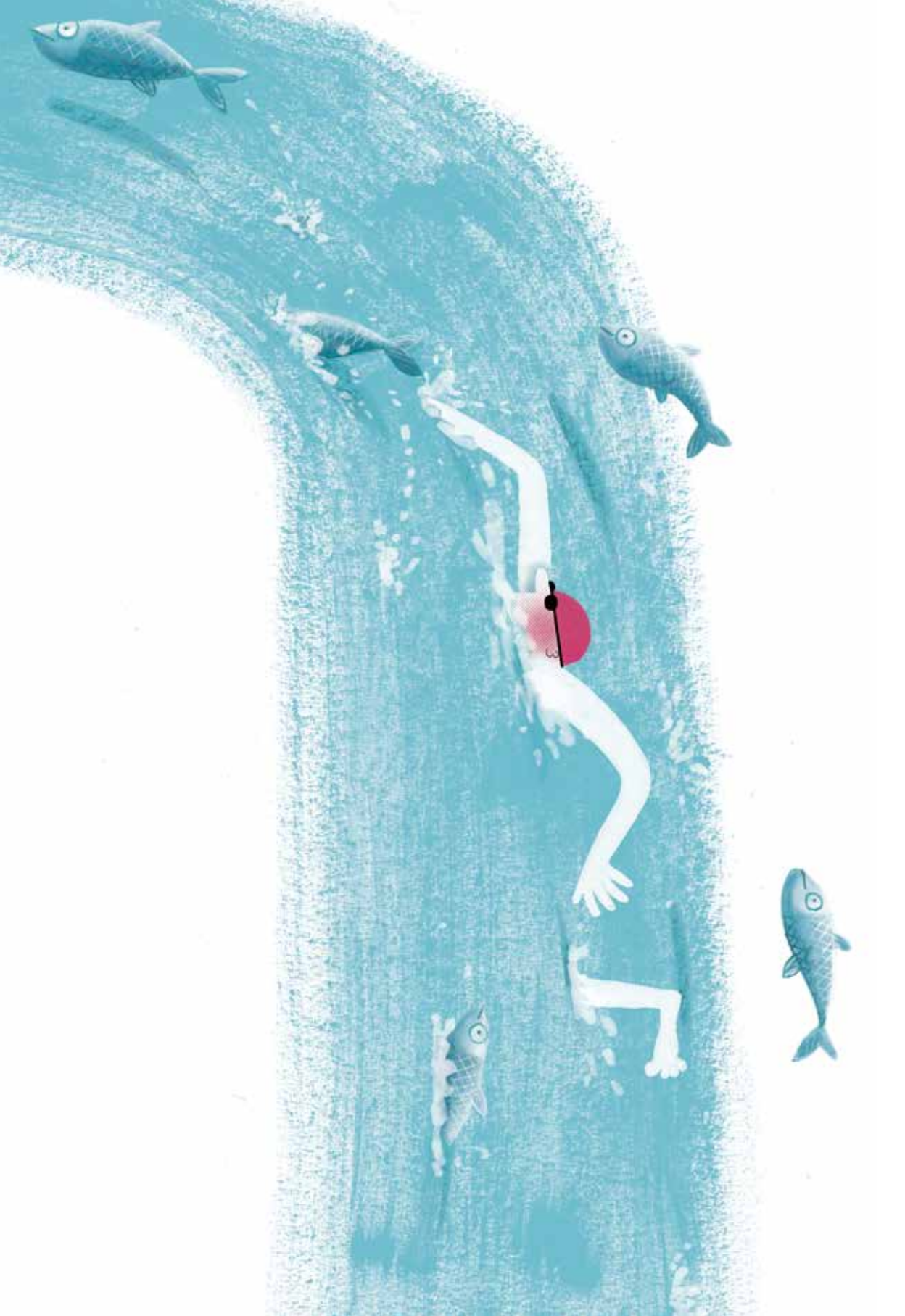
The European bison, Europe's largest land animal whose grazing promotes diverse habitats, was brought back from the brink. It was returned to many areas of its former range, including the Białowieża forest in Poland, the Carpathian Mountains in Romania, and the Kraansvlak dunes of the Netherlands. Eurasian beavers released in the UK breathed new life into their environments, with their dams boosting biodiversity as well as managing flooding. Large carnivores, once rare sights, began reappearing across the continent, including brown bears, golden jackals, and wolves expanding their ranges.

These cases, alongside lynxes, ibexes, and a wealth of birdlife in the Côa Valley, Portugal, the roaming bears and elks of Finland's Kainuu forest, the flourishing wetlands of the Danube river delta, and many others, highlighted the potential for the more natural, wilder Europe we have today.

Dramatic transformations in how we live in the years since 2019, as well as robust legislative action for conservation, built upon these foundations. The transition to renewable energy sources and sustainable agricultural policies, and away from endless growth radically reduced the pollution of air, land, and water and limited the impact of climate change. Large swathes of rural land were abandoned as more people moved to cities and farming became less intensive. Nature reclaimed this land in spectacular fashion, with former farmland converted into deciduous woodlands and sprawling grasslands and incorporated into the EU's protected Natura 2000 network.

Strict controls on pesticides introduced following the near-collapse of insect populations in the early 21st century allowed them to come swarming back, and the food chains they support and invaluable ecosystem services they provide returning with them. From mountain ranges to old-growth forests, habitats flourished under protected statuses and have come to brim with flora and fauna. Rivers flowed freely and without pollution, bursting with aquatic life. Looking to the seas, stringent restrictions on fishing led to the recovery of marine populations, which now sustain the seals, dolphins, and whales that are common sights off European coasts.

The cities and towns in which the vast majority of Europe's peoples live are also wilder than



their 2019 counterparts. Smart development and sustainable management of natural resources and services created urban spaces where citizens and wildlife coexist, to the mutual benefit of both.

With just one year to go, the European Union looks set to realise its vision for 2050, laid out at the beginning of the century to protect and preserve European biodiversity and its ecosystem services. 30 years ago, amid the mounting biodiversity crisis, such a reality seemed a distant prospect.

THE ANTHROPOCENE

Returning to 2019, the alarm is indeed sounding across the globe. The planet is undergoing a major extinction event with a loss of life not seen since the end of the dinosaurs. At current rates, thousands of species are lost each year. A major report produced by the World Wildlife Fund estimated that 60 per cent of animal populations have been wiped out since 1970.[1]

This staggering annihilation of life has been entitled the Anthropocene. Humanity bears unequivocal responsibility for driving the planet's sixth extinction event with ever-increasing consumption and over-exploitation of energy, land, and water. The achievement can be placed alongside the ice ages, volcanic eruptions, and meteorite impacts that were responsible for Earth's previous five mass extinctions. So widespread is our species' influence that only a quarter of land on Earth is free from the impact of human activity, a figure expected to further fall to just one tenth by 2050.[2]

The situation is no less dire in Europe. Reports on the health of European ecosystems use phrases like "biodiversity oblivion" and "ecological Armageddon" to describe the loss of wildlife on the continent. Studies estimating that farmland birds have declined by 56 per cent[3] and flying insects by 76 per cent illustrate but a few of the many losses that are symptomatic of the degradation of ecosystems.[4]

The biodiversity crisis threatens our very way of life. Nature may be removed from the daily lives of many in the modern world, but humanity relies on the natural processes for its food production and water supply and thus its health and prosperity. Insects play a central role in a multitude of these

1 WWF (2018). *Living Planet Report - 2018: Aiming Higher.* M. Grooten and R.E.A. Almond (Eds). Gland, Switzerland: WWF.
2 Ibid.
3 Maaike de Jong (November 2017). Latest update of European wild bird indicators confirms continued decline of farmland birds. *European Birds Census Council*. Available at <bit.ly/2Da55zq>.
4 Caspar A. Hallmann et al. (2017). More than 75 percent decline over 27 years in total flying insect biomass in protected areas. *PLoS ONE*, 12(10). e0185809.

The collapse of bird populations in Europe (1980 baseline)

Source: PanEuropean Common Bird Monitoring Scheme (2015)

processes: in nutrient cycling, as a food source for other animals, and as pollinators. Their importance is immense and without them everything else will collapse. The threat of catastrophe posed by biodiversity loss is as severe as the closely connected climate change crisis, such that United Nations reports urge it to be considered with the same level of gravity.

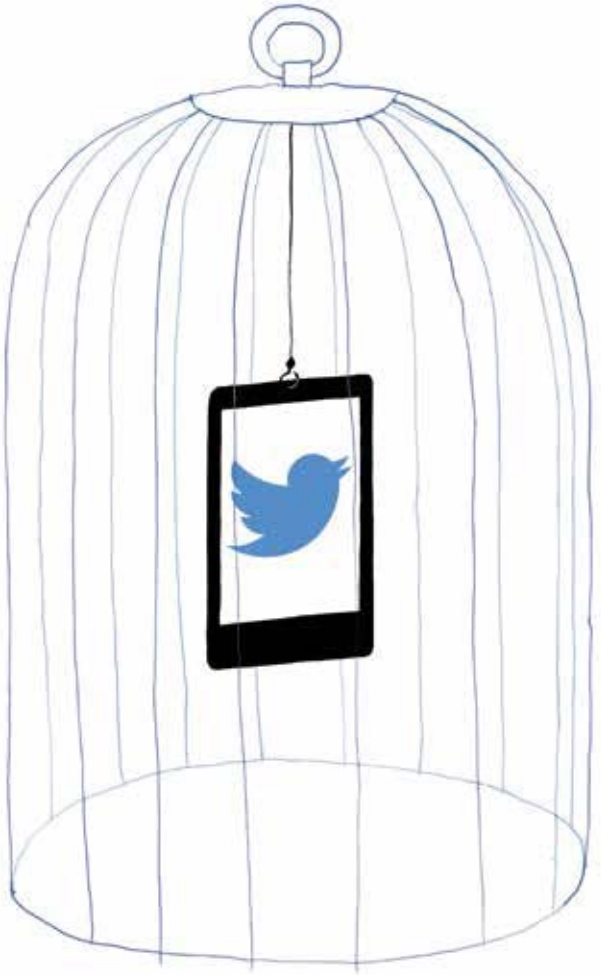
THE CALL OF THE WILD

Rewilding is one proposed solution to not only halt but reverse the unsustainable destruction of nature. As a form of conservation, it has been attracting increasing international attention and, with it, controversy.

A key aspect of rewilding is that the animals reintroduced are keystone species. These species have a disproportionately large effect on their ecosystem and are crucial to the health of the communities of life that inhabit it. In their absence, a delicate balance is lost, and the disruption reverberates throughout the ecosystem.

The classic example of a keystone species in rewilding is the grey wolf in Yellowstone National Park in the United States. Eradicated in the 1930s, the species was reintroduced in the 1970s. Upon their return, the wolves kickstarted an ecological cascade. They promptly devoured the excess of deer, whose unchecked populations had exploded. With deer numbers reduced, and the remaining deer becoming more mobile due to fear of their reinstated predators, overgrazed areas recovered. The returning trees and shrubbery in turn revived beaver populations, whose iconic dams changed the course of rivers and created new habitats for birds, fish, and other wildlife. The wolves curbed rival coyotes, allowing bear and bird of prey populations to also rise again.

The success of the Yellowstone wolves demonstrates the importance of such species to an ecosystem and what is lost without them. Rewilding



schemes are in place across Europe, from small-scale local projects to ambitious transnational initiatives such as Rewilding Europe. The results are promising, and, in some instances, species have been making an almost unaided comeback. Such is the case with wolves: the number of European wolves is estimated to be 12 000, with the apex predator resurging all over Europe and sighted in countries where they had not been seen for centuries, such as Belgium and Denmark.[5]

HEARTS AND MINDS, TEETH AND CLAWS

The progress made with current rewilding schemes highlight the potential for that Europe envisioned in 2049, but as with all complex problems, solutions are never simple. Advocates of the practice are split on what exactly constitutes rewilding: how 'wild' can it be? What level of human intervention and management is acceptable?

These questions are central to the controversy surrounding the Oostvaardersplassen reserve in the Netherlands. The artificial wetland east of Amsterdam was created in 1968 following land reclamation. In an attempt to mimic the grazing habits of long-lost herbivores, deer, horses, and cattle were released into the area. Without natural predators, the populations boomed and then subsequently busted. Following a harsh winter in 2018, thousands of the animals were shot by Dutch authorities before they would perish from starvation, to the outcry of animal rights campaigners.

The resurgence of large carnivores in Europe has also reignited ancestral conflicts with humans. Such conflicts are ages old and entwined in the cultural DNA of humankind, with their modern-day manifestation usually

5 Guillaume Chapron et al. (2014). Recovery of large carnivores in Europe's modern human-dominated landscapes. *Science*. 346(6216), pp. 1517-1519.

IN AN AGE OF DOOMSDAY PREDICTIONS, REWILDING CONSERVATION SCHEMES OFFER A GLIMMER OF HOPE ON AN OTHERWISE BLEAK HORIZON FOR THE FUTURE OF BIODIVERSITY IN EUROPE

the result of livestock loss. Protected under the EU's European Habitat Directive, wolves have been the subject of ire from farmers across Europe. There have been calls to relax legislation to allow culling, and in some cases, vigilante groups have killed wolves illegally. Similar turmoil met the reintroduction of two bears in the Pyrenees in France, with threats made to "reopen the bear hunt". Other species have also fallen in the crosshairs, such as beavers in Scotland targeted by landowners who decry the drastic impact the large rodents have on the local environment.

Despite these conflicts, public enthusiasm for rewilding is generally high, with a variety of schemes led by community groups, landowners, and private organisations. However, there is a disparity of opinion between rural and urban areas, and the concerns of communities closest to such initiatives must not be discounted. Preventative measures like electric fencing and compensation for lost livestock offer potential solutions for conflict. Education can allay fears of attack by predators, while the tangible benefits of ecosystem services and ecotourism can persuade locals to work with instead of against nature.

NAIVE FANTASY OR OPTIMISTIC REALITY?

The keystone species of rewilding attract controversy for the same reasons they appeal. They are large, remarkable, and, unfortunately, exotic. The assumption that just adding a few bears, bison or other beasts will miraculously cure an ecosystem of its ills is an oversimplification and risks turning rewilding into a buzzword.

But these animals are figureheads, bastions of a natural world that we have disconnected from, and their return through rewilding indicates the revival of something greater that has been lost. These species and even the term itself evoke images of grand, rolling wildernesses, but the principles of rewilding can apply on a smaller scale. Ditching pesticides and desterilising towns and cities would make urban

areas more hospitable to nature, not only benefitting wildlife, but also the people living there: multiple studies have demonstrated the positive effects on human mental and physical wellbeing that reconnecting with nature brings.

In an age of doomsday predictions, rewilding conservation schemes offer a glimmer of hope on an otherwise bleak horizon for the future of biodiversity in Europe and across the world. And yet, policy-makers at national, regional, and global levels lag behind civil society and the media in advocating for action, reluctant to sacrifice short-term economic growth to tackle the crisis. Governments around the globe are failing to meet the biodiversity targets for 2020 which were set by the UN in Aichi, Japan, in 2010. Closer to home, EU countries have a rare opportunity to coordinate conservation efforts on a continent-wide scale. Indeed, the Natura 2000 network of protected areas, which covers over 18 per cent of EU land area, is a step in the right direction.[6] But with 45 per cent of EU land dedicated to farming, legislation banning toxic pesticides too slow forthcoming, and the continued overfishing of European waters, there is much more to be done if the EU's own 2020 biodiversity targets are to be achieved, let alone its long-term vision for restoring biodiversity by 2050.[7]

Conservation also often falls to the wayside in national politics too. Nicolas Hulot attributed his surprise, live-on-radio resignation as the French environment minister in 2018 in part to insufficient progress on improving biodiversity, particularly lamenting lack of support to protect wolves and reintroduce bears.

A societal transformation at every level is needed to ensure the survival of all species on this planet, including our own: one in which humanity's mindset on nature shifts from exploitation to coexistence and its value is measured beyond economic wealth. Rewilding has the potential to be an integral part of this shift, with promise of a Europe in 2049 that is healthier, biologically more diverse, and altogether wilder.

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6 European Commission (2019). *Natura 2000*. Available at: <bit.ly/1i2vgXI>.
7 Patrick Barkham (March 2018). Europe faces 'biodiversity oblivion' after collapse in French birds, experts warn. *The Guardian*.

Futures Foretold

Climate Fiction

Climate change will not just be background noise in a busy 21st century. Whether it is managed and stemmed or fuelled unchecked, it will define generations, provide and destroy livelihoods, and sculpt geographies. In this essay, Aude Massiot tells a parallel story of one life with two destinies in a Europe of 2049.

In 2018, representatives from 197 countries met in Katowice, Poland, for COP24 – the 24th Conference of Parties – to discuss ways to fight climate change. "We understand the enormous challenge that we face with climate change," declared the then-UN Secretary General António Guterres, "and we know that we are not on the right path." Even in those fateful years, the future of humanity was in jeopardy and many of the effects of global warming were known, from mental illness to respiratory and cardiovascular problems to the accelerated spread of infectious diseases.

Without fully realising it, humanity would turn the page in 2018 with COP24, a summit that was supposed to build on the 'last chance' Paris Agreement signed three years earlier. Born in France in 2012 and part of the 'climate generation', Souria would face two possible futures. Depending on the action or inaction of countries, institutions, businesses, and citizens, the two possible lives – brown and green – lived by Souria so far in December 2049 contrast starkly and remind us of the climate crisis we face in 2019.

PLANET ON THE BRINK

The voice on the phone is weary: "It's the third time the house flooded this year. The insurance companies are swamped and are not accepting any more claims until 2051. We've no choice but to leave everything to rot and find somewhere else to live. Can your dad and I come and stay for a few days?" "Of course, you're more than welcome," replied Souria. She hung up and the hologram of her mother disappeared into her watch. She remembered her childhood home in the south-west of France that her parents would have to abandon. Ever since the great floods of 2041, she had known this day would come.

The young woman mechanically scrolled through the latest Google alerts on her 3D screen. Among the photos of villages devastated by floods across the south of France, one article caught her eye: "China launches huge geo-engineering experiment without neighbours' agreement." This technology, unknown to the public two decades previously, is the new hope in the battle against climate change. And one of humanity's greatest leaps of faith.

POLLUTION SPIKES

After the heatwaves that killed 65 000 people in China the year before, Beijing has decided to release massive amounts of particles into the stratosphere. They are supposed to reflect solar radiation back into space, thereby lowering the planet's temperature. But an article published by a collective of 41 000 scientists warns of the risks that such an experiment carries. Despite decades of research, it is still not possible to say what effects it will have on the Earth's ecosystems.

Souria sighed. She'd had enough of catastrophic headlines about the future of humanity. That summer's heatwave had lasted three weeks with temperatures hitting 45 degrees Celsius. It had been

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impossible to sleep in her poorly insulated apartment in Nantes, a medium-sized city in the west of the country. She couldn't open the windows because with the heat came spikes in pollution. An asthmatic like many of her friends, she longed for a return to her parents' era, the years 2000 to 2010. A time when mankind was aware of the dangers but still enjoyed the luxury of putting off the societal changes necessary. In 2019, it was strongly believed that the EU member states would manage to overcome their differences. But the results of European and national elections across the continent undermined efforts to collaborate. Nor did citizens manage to show their leaders that the environment was a vote winner.

Souria is all too familiar with the issue. She works for the city of Nantes in the department that manages the reception of refugees. In her caseload, she no longer distinguishes those fleeing war from economic migrants or climate migrants. The UN predicts that there will be 500 million climate refugees by 2060, raising its previous forecasts. Faced with this influx, France was unable to maintain its closed border policy. The previous government had tried but the policy resulted in outbreaks of violence and their defeat in the last presidential election.

In her office, Souria is swamped with asylum applications from people fleeing the Sahel [the area between the Sahara to the north and the Sudanian Savanna to the south]. Extreme heatwaves exceeding 50 degrees have made certain areas there uninhabitable, so people have migrated north. Léo, Souria's partner, saw a documentary on this issue just the week before. He explains: "It appears that the 1.7-degree rise in temperature since the industrial era has caused the oceans to warm, particularly the Atlantic. This has prompted the Gulf Stream to slow, which, in turn, has led monsoon rainfall in West Africa to move south. The result is the desertification of the Sahel."

EXPENSIVE BEER

Of late, the couple have been increasingly discussing how they are suffering the consequences of the actions, or inactions, of their parents and grandparents. "As long as we're alive there's hope," Léo likes to say over a glass of English wine (beer has become too expensive due to the hops shortage). He works in a farming cooperative. They have sprung up all over France, to the point of sending some large, out-of-town supermarkets to the wall.

Souria is less optimistic. She struggles to look past the misery that she sees day in, day out. Four years ago, the couple decided to adopt a Malian child who arrived in the country that same year. Like many of their friends, they had quickly ruled out the idea of having a child of their own. With the overpopulated planet and an uncertain future ahead of them "it would be criminal," as Léo had said one evening. When Souria met six-year-old Biram, they quickly made up their minds to adopt him. The couple do not know what climate lies ahead for him, but at least they know they can give him a better life.

PLANET REPRIEVED

The voice on the phone is calm. "I daren't go out with this snow storm that's been raging for days. It's lucky we redid the house insulation five years back. Snuggling up in the cosy warmth of the living room is lovely. And the heating bills are tiny."

"Glad to hear it, Mum. I'll come and see you once the storm passes. I've seen some cheap tickets to Paris on the Hyperloop [the network of capsules propelled by a magnetic field and travelling at 1200 kilometres per hour was built between Toulouse and Paris in 2035]."

Souria hung up. The hologram of her mother

disappeared into her watch. She reminisced on her childhood home in south-west France, a haven of peace and quiet powered by solar panels. To pay for them, her parents had taken advantage of the affordable loan scheme rolled out by the government in 2023. It was expensive but the resulting energy and water savings more than covered the repayments. Souria and her partner Léo also renovated the insulation in their apartment in Nantes when they bought it, and they connected their home to the local heating network powered by renewable gas generated from processing industrial and agricultural products.

CONUNDRUM

It was a no-brainer. Souria works as a 'renovator' for the city. She offers turnkey and subsidised renovation programmes to residents, finding specialist tradesmen and identifying the most affordable technical solutions. When she was little, this profession hardly existed, but since she went to university in 2030, the sector has thrived.

And for good reason: a few years prior, France saw its ecological transition accelerate rapidly. Encouraged by the vote in 2021 to make European climate goals even more ambitious, the new French government that came to power in 2022 decided to align all public policy with the négaWatt 2050 scenario. Written by experts from the think tank with the same name, it was the first roadmap to France becoming carbon neutral by the middle of the century.

Souria knows the négaWatt scenario inside out: it was the subject of her dissertation. In writing it, she interviewed Thierry Salomon, the vice-president of négaWatt. "A clear and realistic path for ecological transition could be accepted by the French people," he told her. "Renovate 780 000 homes, increase vehicle efficiency by almost 60 per cent, get meat eating back to 1990s levels, and end fossil fuel imports to reach 100 per cent renewable energy by 2050. All by cutting energy consumption by two thirds. This is possible and would be extremely beneficial for the economy." Souria left the interview a different person. And the prophecy came true. Souria marvels at how surplus solar electricity in the summer, or wind electricity when it is breezy, can be transformed into biogas and stored for the winter using electrolysis.

Together with Léo, who manages a booming network of agricultural cooperatives in the Nantes area, Souria travelled across Europe by bike to celebrate her 25th birthday. On their travels, the couple discovered how, since 2017, the Portuguese municipality of Vila Nova de Gaia (population 312 000) produces a third of its electricity by turning waste into biogas. In Norway, on the banks of the Oslofjord, Souria insisted on visiting the world's first energy-positive school. Since completion in 2018, the building alone has produced 30 500 kilowatt hours of electricity a year, equivalent to the average annual electricity consumption of two three-children families.

SILENT STREETS

Sitting on their leafy terrace, the couple reflect on how the situation was turned around. In the 2010s, their parents were pretty much in despair. The week before, Léo had seen a documentary on the very subject. He sums it up: "Things really started to change 20 years ago. Following new European climate policies introduced in 2019, the American presidential election of 2020 brought a young woman to power who immediately re-entered the Paris climate agreement. She closed coal power stations and banned shale gas production. It created a ripple effect."

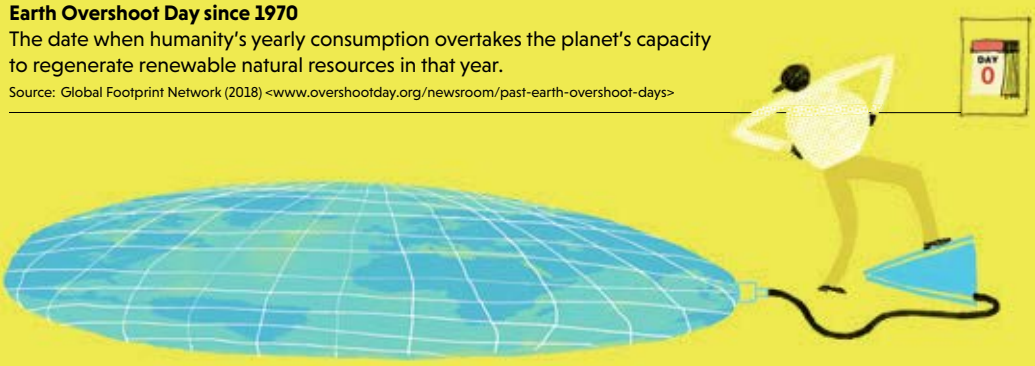
That evening, strolling along the streets of Nantes, which had fallen silent since only electric vehicles were allowed, Souria and Léo remarked on how it was a great time to be alive. They passed tramways now used to transport goods to the city centre at night instead of lorries. Streetlights would switch on as they approached and off again as they passed. Looking up from the city streets, Souria and Léo could finally see the stars again. ■

This essay is an edited version the article Climatique Fiction originally published in December 2018 in *Libération*.
Available at <https://www.liberation.fr/planete/2018/12/05/climatique-fiction_1696235>

Earth Overshoot Day since 1970

The date when humanity's yearly consumption overtakes the planet's capacity to regenerate renewable natural resources in that year.

Source: Global Footprint Network (2018) <www.overshootday.org/newsroom/past-earth-overshoot-days>



1970	1976	1982
29 DECEMBER	16 NOVEMBER	15 NOVEMBER
1988	**1994**	**2000**
15 OCTOBER	11 OCTOBER	23 SEPTEMBER
2004	**2009**	**2018**
01 SEPTEMBER	19 AUGUST	01 AUGUST

CONNECTING EURASIA

EUROPE AND CHINA IN THE 21ST CENTURY

ARTICLE BY
CLÉMENCE LIZÉ

Relations between Europe and China could shape the decades to come if backed by political will and unity. As China looks outwards, EU-Asia expert Clémence Lizé imagines a future relationship built around cooperation on environmental challenges and technological innovation, as well as the delicate navigation of profound political differences.

March 4 2049, Justus Lipsius building, Brussels. The European Council awaits as the Chinese delegation of senior officials arrives to discuss the future of the two governments' partnership, with a view to enhance collaboration and strengthen the world order. On the agenda, the establishment of a guaranteed minimum income shared between the European Union and China, sustainable development policies in mega-urban spaces, and negotiations for a common platform on shared digitalisation and data resources. A century has passed since the Chinese Communist Party established the 'New China'. Over this century, a relationship between China and Europe, built around a joint commitment to a world order, has developed progressively.

A WORLD WITHOUT A HEGEMON

To be fair, few outside the Brussels bubble had expected the world to move in this direction at the beginning of the century. After the 2019 European Parliament elections and the complete failure to resolve the Brexit crisis, the EU had lost much of its soft power across the world. Democracy, and national referendums especially, lost credibility with the Chinese. The EU became absorbed in the restructuring of its own political model as it sought to ensure institutional efficiency and to enhance dialogue between local actors and the political sphere.

This required utmost attention and energy, as populist parties across the continent were advocating for greater independence from the EU, shrewdly manipulating new technologies to disseminate false information and disrupt the smooth functioning of European politics. To make things worse, Russia found great amusement in deploying its cybersecurity expertise against pro-EU political campaigns during the 2020s. China, on the other hand, had taken the lead in new big data technologies and had developed sophisticated tools to curb the spread of false information. This capability enabled China to implement its policies for economic development with greater efficiency.

After an intense trade war between the United States and China throughout the 2020s, the former superpower accepted that it should retreat and accept greater Chinese involvement in world affairs. The US had already been pursuing a sustained isolationist direction since Donald Trump's election. It withdrew from multilateral organisations and openly declared the US's gradual withdrawal from world geopolitics. Removing military troops from Afghanistan was first on the list, and became symbolic of its reluctance to interfere in affairs outside its borders. Meanwhile, China had strongly encouraged its youth to pursue careers in international organisations. By 2030, the percentage of Chinese nationals in international organisations had surpassed that of Americans, as the Chinese became the major donors, and thus the ultimate decision-makers, in the institutions the world had inherited after the Second World War.

China continued to advance on the world scene, offering aid and investments across Eurasia and Africa and promoting its economic development model. Its experience of 19th-century colonialism made it all the easier for China to gain trust in Africa and beyond. China was also massively investing in its traditional philosophical and literary culture. After the ferocious eviction of traditional culture during the Cultural Revolution in the 1960s and 1970s, sustained efforts across at least three generations were necessary to understand and integrate Chinese thinking beyond the Communist framework. Ancient legal norms were re-embraced and integrated in the once purely Western international legal system. Western individualism was no longer promoted, and more space was given to consider new concepts such as 'harmony' and 'economic development as a vector of peace'.

The rise of China over the first quarter of the 21st century had put an end to the hegemony of the Western model. With its sustainable alternative to liberal democracy, China not only challenged the military and diplomatic supremacy of Western powers, but the principles of market economy. China had begun to set standards for the rest of the world and Western norms were no longer necessarily considered

as universal. The global stage was now fully multipolar, leaving its leading actors (the US, China, the EU, Russia, and other emerging powers like India) competing for influence and the preservation of their value systems.

The moment when EU members decided to finally get their act together was not until well into the century's third decade. In the second half of the 2020s and throughout the 2030s, a multi-speed Europe permitted cooperation between those EU countries that wished to do so, circumventing the reservations of members operating on a more nationalist basis. Large-scale projects in the military, energy, telecommunication, industrial, and digital sectors, which required investments too onerous for any one country, finally started seeing the light of day, and super-projects eventually made the EU industry competitive again on international markets, challenging its Chinese and American counterparts.

Meanwhile, the Chinese regime actively sought cooperation with other powers. Its ambition to acquire greater respect across the world and receive attention on the international stage proportionate to its population and economic weight was reached. It did not seek to dominate the world on its own. It was well aware of the complexity implied in sustaining power and stability within its own borders, let alone globally. As such, China actively reached out to the EU for a Renewed Global Balance Policy.

SAMARKAND AS THE NEW HUB

The previous meeting between the two governments' high officials was held in 2048 in Samarkand, capital of the Central Asian Union and at the crossroads of Europe and China. The high-level summit celebrated the 20th anniversary of the EU and China's joint collaboration on the Connectivity and Silk Road projects.

During the 2048 meeting, the EU and China listened to the Central Asian Union's position on the results achieved through this joint collaboration and considered strategies for the future. Although all partners agreed that it was necessary to promote the Universal Charter for the Protection of the Environment, differences remained on how environmental responsibility should be delegated, whether at state, city or citizen level. China was reluctant to have this under the sole responsibility of its citizens, and believed that the State should have the final say on environmental protection criteria. Whereas the EU, supported by some Central Asian Union states, considered that the State should interfere less, and let citizens assume the sole responsibility. As a means of regulation, the EU offered to put forward a strict mechanism of surveillance through new carbon-footprint technologies held in people's mobile devices. Further negotiations would resume at the next summit between the EU, China, and the Central Asian Union.

CHINA ACTIVELY REACHED OUT TO THE EU FOR A RENEWED GLOBAL BALANCE POLICY

BACK TO BRUSSELS

As part of the now traditional rotation between political capitals, in 2049 the EU and Chinese leaders were to meet in Brussels. The next summit would be in Beijing, 2050, a crucial year for China as the Asian Infrastructure Investment Bank (AIIB) would share its African Development Project, putting forward its new Development Action Plan for the African Continent. The EU had considered increasing its shares within the AIIB, but remained reluctant to make a final decision at this stage. Much would depend on the outcome of the 2049 summit. The leaders took their official virtual-reality photo in the Europa Building and the picture was immediately projected in all capital cities, creating a greater sense of inclusion for people in these critical political events. A couple minutes later, all the heads of states and state officials were sitting in the multi-coloured, oval meeting room on the fifth floor. Leaders and their official translators gathered in small groups, sharing friendly greetings to ease the atmosphere before the meeting. Back to the formal topics, one of the most important elements on the agenda was the development of a guaranteed minimum income, to be set at the same, moderately high level in Europe and China.

GUARANTEED MINIMUM INCOME

China had started the implementation of this guaranteed minimum income for its inhabitants within certain provinces, under the format of experimental regions, building on Western Europe's successful experience with high minimum incomes. With the expansion of artificial intelligence and robotics in industrial sectors, millions of jobs were replaced in the 2020s, both in Europe and in China. Because of the mutual problems the governments were facing and the increasing interdependence of the Chinese and European economies, the Chinese Labour Ministry, the EU's Directorate-General for Employment and Social Affairs, along with the International Labour Organization, started cooperating to find solutions for public wellbeing. Economists and social policy-makers

agreed that guaranteeing a minimum income, with no means testing beyond income, was necessary for everyone affected. The new robots introduced into the production chain were still creating value and generating wealth for businesses, but without drawing monthly salaries. Now the value generated by the robots would be heavily taxed, and redistributed to the general population.

By 2049, other economies in the world were considering the development of such a policy in their economies, particularly in Africa and in Latin America. Populist governments in Latin America and their ill-considered policies had distorted economies and provoked social unrest. As Europe and China had showed their ability to develop a guaranteed minimum income that was both high and sustainable, world leaders and their experts were increasingly open to adopting such models. Europe was eager to participate in expanding minimum income too, as it could well be a way to reduce the numbers of people migrating to its continent. China remained more reluctant, hesitant because of the potential costs its enterprises with plants in Africa may incur. The low cost of local labour remained essential to the successful completion of its infrastructure projects. Rumour also had it that certain Chinese enterprises were afraid that the export of its robotic industries to Africa, which would facilitate the financing of a guaranteed minimum income in the region, would lead to it losing its technological edge over its rivals. It was rather ironic that just 50 years ago it was the West that feared that China's investments in strategic technologies in Europe would too lead to its industrial knowhow being copied. Time has a funny way of changing roles, and reversing situations.

URBAN PLANNING AND ITS INFLUENCE ON GEOPOLITICS

Next on the agenda was urban planning. The industrial revolution had led to continuous rural desertification in the last centuries and new technological developments had further strengthened urban migration. The urban reality that emerged required innovative thinking to be made healthy and liveable.

On a more positive note, certain European technologies had been tentatively exported to China, such as wind energy infrastructure and solar panels designed for mass usage. The Shanghai Maglev train, built on German industrial knowledge at the beginning of the century for passengers from Pudong International Airport, was envisaged as the new way of getting around for city-dwellers. One could go from one part of the city to another in 20 minutes instead of two to three hours, saving time and energy for commuters. Although the development of new urban routes had just started in China, policy-makers in the

meeting were negotiating which companies would take the lead in each other's markets to develop these infrastructures on a broader scale. This was a critical step in the EU-China relationship: the outcome would condition the new world transport system and determine the likely monopolists which would control future transport infrastructure across other continents. Africa's population continued to increase at phenomenal speed, a trend which would require more sophisticated urban planning in the next decades based on experiences in China and the EU. While the US had long promoted personal vehicles, to the detriment of public transport, there was now heightening public demand across the Americas for developing infrastructure emulating the EU-China model.

BY DECREASING THE EU AND CHINA'S DEPENDENCE ON FOSSIL FUELS, IT BECAME EASIER TO PUT PRESSURE ON RUSSIA, AS WELL AS OTHER PETROSTATES, IN CONFLICT SITUATIONS

By 2040, the EU and China had managed to cooperate on the integration of renewable energies into new urban designs. Energy infrastructures were modernised at the upstream and downstream levels, so that solar and wind became the main source of energy for households. Both Europe and China had massively invested in renewable energies to ensure that their reliance on fossil fuels would fall close to nil.

As the Silk Roads and the Connectivity projects were developed across the Eurasian land mass, they became all the more vital to peace and stability in the regions that they spanned. The US had retreated a couple decades ago from its war zones. It now contributed only modestly to peace-building ventures and had lost its former weight in global diplomacy. China and the EU stepped in, engaging with local leaders in mediation processes. China promoted investing in sustainable infrastructure to develop regional economies. By decreasing the EU and China's dependence on fossil fuels, a core industry within the Russian economy, it became easier to put pressure on Russia, as well as other petrostates, in conflict situations. This change in the balance of power had resulted in noticeable progress towards lasting peace across Eurasia.

DATA AND DIGITALISATION

One of the most anticipated topics of the talks remained data and digital governance. Public funding had sponsored progress in sophisticated communication technologies and there were also negotiations on the development of virtual reality technology. It was hoped that distance could be transcended by allowing people to

FOR EUROPEANS, SUCH A CONCENTRATION OF INFORMATION WAS AN INVASION OF PRIVACY. FOR CHINESE OFFICIALS, ITS SYSTEM HAD PROVEN ITS MERITS TO ENSURE FAIR REDISTRIBUTION OF WEALTH

communicate in person across space through projecting themselves via screen. The virtual-reality picture taken prior to the official meeting was all the more symbolic in that it conveyed a message of political support for bringing forward these new technologies.

China's 'app for everything', WeChat, had surpassed European competition in terms of functionality in the 2030s, but the EU had been a pioneer in ensuring that all functionalities respected legislation to safeguard sustainable use. In other words, China produced the software, whereas the EU provided the law. For the future, the two governments were still negotiating to establish shared control over computers able to integrate the two continents' data. The EU had proposed an independent mechanism to adjudicate over control of the computers, based on its traditional political theories. This seemed ideal, but was difficult to implement. Chinese leaders were still reluctant to accept the principles behind Montesquieu's theory of the separation of the three powers.[1] This remained the major impediment to the implementation of a control mechanism over the computers. However, China understood the necessity to ensure shared control with the EU over data flows between Europe and China. The crux of the disagreement laid in how it should be achieved.

China had developed a social security platform by collecting data on its population. Bank information, national identification, data on communication with family members, and other information were easily collected through governmental agencies to verify a person's request for social aid. It made social security allocation much easier and effective. For Europeans, such a concentration of information was an invasion of privacy. For Chinese officials dealing with huge amounts of people, its system had proven its merits to ensure fair redistribution of wealth.

1 The term 'the separation of the three powers', coined by 18th-century French philosopher Charles-Louis de Secondat, Baron de La Brède et de Montesquieu, refers to the political authority of the State being divided into legislative, executive, and judicial powers.

The EU and the Chinese government's major political differences made it ever more difficult to find consensus on how to distribute access to data and curb abuses in practice. Further time was required, and perhaps more trust as well, for any effective action to be made. Negotiations would resume at the next summit, jointly with the outcome of the decade's joint report on human rights.

Chairman Mao's speech in Beijing's Tiananmen Square in 1949 declared that, after a century of decadence and tumult, China had finally "stood up" to Western imperialism. A century after this speech, China was now sharing the helm of the global order, working jointly with the European Union for a Renewed Global Balance. There was substance in China's approach, and its true victory lays in its ability to demonstrate the essence and reality of the 'Chinese model'. For the next summit, further considerations would be given not only to digitalisation, but also migration and the usage of big data to control human flows more effectively across the world, along with a collaborative consideration on universal political values. Beijing was already preparing the logistics, and was debating whether the venue should be within the historical Forbidden City to mark a further milestone in the EU-China relationship.

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Trading Places

As firms and governments reorganise production in face of new technological possibilities and geographic realities, international trade and the blocs that governed it are set for major shifts from here to 2049. Isabelle Durant, number two of the UN Conference on Trade and Development, sets out a positive yet honest vision for a reappraisal of the current order, seizing opportunities whilst curbing excesses.

Trade is the oldest human activity. Since antiquity, it has shaped successive civilisations, stimulated innovation, and underpinned modes of production. It has determined the paths and places of development, as much a cause of wars and famines as it is responsible for rapid increases in prosperity and wellbeing. For these reasons as for many others, trade, and thus international trade, will still be around in 2049.

The question is how international trade, today the product of hyper-globalisation and ultra-liberalism, will evolve and affect the world of tomorrow. A world in which technological and economic interconnection, as well as climate change, will be game changers.

"WHEN ELEPHANTS FIGHT, THE GRASS GETS TRAMPLED."

Trade wars, like the one between the USA, China, and the European Union at the start of 2019, are certainly nothing new. However, while the multilateral order absorbed many shocks in the past, the 'Make America Great Again' stance of the United States under President Donald Trump is transforming relations between the major trade powers. China, for its part, attempts to show through its actions that a different model of trade is possible, although it tries to do so without ridding itself of protectionist habits or of its somewhat equivocal status as a developing country at the heart of the World Trade Organization (WTO). At the same time, the EU's attempts, through its common trade policy, to strike the right balance in terms of reciprocity with external partners continue to generate debate, with positions ranging from protectionism to complete laissez-faire.

This trade war, emblematic of a new paradigm in international relations, is about technology too. In the battle for digital supremacy, American giants fight Chinese titans. It is GAFA versus BATX.[1] As the quote

1 US firms Google, Apple, Facebook, and Amazon versus Chinese firms Baidu, Alibaba, Tencent, and Xiaomi.

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goes: "data is the new oil". Faced with fierce competition for technological leadership, the European Union is looking to conquer the regulatory landscape, that of governance and the protection of citizens' rights. Faced with tough odds in the trade war, hope must lie in emulation of the EU's General Data Protection Regulation opening the door to international protocols.

And why not with the EU's African partners sooner rather than later? It is not unrealistic to imagine a fair and effective Africa-EU trade partnership over the coming decade, one that avoids fruitless digital confrontation. With a shared environment favourable to investments and yet based on fair trade and protection of data and citizens, the African continent and the EU could well build a truly regulated digital and trade area by 2049. The trampled grass could then seriously irritate the elephants' feet, and bring them to the negotiating table with a more amenable attitude.

RETHINKING TRADE ROUTES

IT IS NOT UNREALISTIC TO IMAGINE A FAIR AND EFFECTIVE AFRICA-EU TRADE PARTNERSHIP OVER THE COMING DECADE

International trade, regulated in economic and technological terms, must also drastically reduce its carbon footprint. Booming trade currently drives an increase in CO_2 emissions. By 2049, emissions from the transportation of goods, all modes included, are projected to triple. Putting air travel aside, international freight – with maritime shipping generating more than half of its pollution – is set to overtake passenger transport as a source of emissions. Given their impact on the climate, how can we rethink the channels and forms of international trade?

There is an urgent need to identify what impact a global temperature rise of 2 degrees Celsius would have on international trade. What new maritime routes will open up, and what new ports? Which populations will be threatened? Which types of agriculture will be transformed or reconceived? Which jobs? What will the trade map look like in the world of 2049 when temperatures have risen by 2 degrees Celsius? If the fight against climate change is a priority, it is irresponsible not to envisage all options in order to better anticipate and regulate.

The other important task on the international community's to-do list is exploring how to limit, or better to nullify, the impact

of international trade on the climate. For too long it has been taboo to reflect on the interaction between trade and the environment, whereas this reflection must guide the design of future policies. The refashioning of the trade system for the future should also strengthen and empower regional and local trade. Reflection on the consumerism of our own societies has a place here too, one that points to emerging solutions that let people borrow rather than buy and use rather than own.

MADE AT HOME?

Is the solution to be found in local production and short supply chains? That would be putting it a little too simply. The internationalisation of trade has always opened up new opportunities. Between China's catch-up and the struggles of those developing countries excluded – whether voluntarily or by force – from international markets, it would seem that prosperity and sustainable development cannot be achieved outside the international system, providing that certain conditions are in place. For example, new rules to cut protectionism in sectors like agriculture, textiles, and medicines must be proposed and enforced. In 2019, this issue lies at the heart of the next reform of the WTO, which has proved incapable of bridging divisions among its members in recent years. A fairer and more inclusive international trade system cannot do without a truly multilateral alternative to the present options of either selective plurilateralism or normalised trade war. Among other aspects, the new rules must bring with them a new form of dispute resolution through a permanent multilateral court that would handle trade conflicts between companies and states.

THE TIME WHEN WE WERE TRADING EVERYTHING, ALL THE TIME, AND AT WHATEVER COST, MAY BE BEHIND US

A TIME BEYOND JUST-IN-TIME

Technological innovation and climate disruption move quicker than negotiators. Building 2049 will require more than ignoring reality or just denouncing certain actors. Building 2049 means applying the full spectrum of innovation in the interest of regulated trade that does not harm the climate.

To achieve this, unknowns of both today and tomorrow must be explored. Will the spread of 3D printing transform manufacturing as the mobile phone and the internet have revolutionised online shopping? Will international trade in services, a euphemism for increased outsourcing, take over permanently from international trade in goods? Will a more regional approach to trade in goods, one that is more traceable, more accessible to smaller players, better controlled, and more redistributive, take precedence over the globe-spanning value chains along which the lion's share of profits flow up to the head of the chain?

Despite these open questions – or precisely because of them – tomorrow's exchange and trade need to be cannier, gearing trade policy towards a product's true added value. The time when we were trading everything, all the time, and at whatever cost, may be behind us. Too often the price was a race to the bottom for the sustainability of the planet and our societies. The picture of global trade would be very different today if the rules of the game allowed actors of all sizes to be included, and allowed regional circuits to flourish without falling into protectionism. A rebalancing of international and regional trade is one of the key questions for decades to come. Even a snapshot tells us that much. ■

PLANTING THE SEEDS OF TOMORROW'S AGRICULTURE

ARTICLE BY
FRÉDÉRIQUE HUPIN

The food system of the future will not be controlled by farmers or consumers, but built around their cooperation. Getting to know each other better and understanding the other's point of view is a big part of this process. Let's explore the methods of those taking the first steps, in 2019, towards an agriculture that gets farmers the most out of their land whilst letting nature shoulder its share of the work. Who knows, by 2049 agroecology could be the dominant model of farming in Europe.

If any single reform is to be made of our food and environmental systems by 2049, it is that of agriculture. Farming today remains a 20th-century relic, despite the emergence of different ways of farming (and of thinking about farming) striving to gain the upper ground. Professor Olaf Schmidt, an eminent researcher on agricultural systems at University College Dublin (and, like Charles Darwin, an expert on worms), dreams of "a farming system which would provide farmers with profitable and rewarding work that sustains rural communities. Such a system would produce safe, nutritional food for all and would protect the earth, water resources, biodiversity, the air, and landscape." Professor Schmidt is clear that while "scientists have a role to play as they can carry out in-depth analyses into farming methods, all innovations should be passed along to farmers first and foremost." The system the researcher describes is currently referred to as 'agroecology', the application of ecology in agriculture. The principles of agroecology are: take care of the soil, recycle organic materials, reduce waste, make use of services provided by nature, encourage biodiversity, and, last but not least, financial autonomy for farmers.

IS FARMING IN BELGIUM MOVING TOWARDS AGROECOLOGY?

There are around 35 000 agricultural holdings in Belgium. In Flanders, farming tends to use industrial methods for high-value production on smaller plots of land. Wallonia has a more intermediate model whereby crops are grown on larger fields and animals are reared less intensively. Although the average size of a farm in Wallonia is 57 hectares (according to 2017 figures), farmers growing field crops will typically raise them on plots of land of around 100 hectares.

No figures are currently available on the number of farmers using agroecological methods in Wallonia. Maxime Merchier, coordinator of Belgian association Greenotec which promotes soil-friendly farming, puts the number for Belgium at around 10 per cent. Most of these practise agroecology out of conviction and because they wish to put their knowledge of the soil back to work and return to common sense. This estimate would include most of Belgium's organic farmers, as well as farmers focused on soil conservation, self-sufficient livestock farmers, and permaculture farmers. Why are the numbers so low? At the heart of the problem is the system of globalised agriculture put in place at the European level. Farmers produce at a loss and survive only thanks to aid from the EU's Common Agricultural Policy. Farmers are stuck in a vicious circle, forced to produce at low cost.

Merchier sums up the situation: "For decades,farmers were pushed towards a productivist agricultural system built entirely around yields. This system depletes soils, pollutes water resources, and consumes high amounts of fossil fuels. In contrast, agroecology looks to the future. It is not only farmers that benefit in the medium to long term; agroecology is also beneficial for the surrounding areas and for society in general. It is an agriculture of the living – its objective is to guide ecosystem services to make the most of nature to support agricultural production. Such a profound change in our farming model will take time. The transition is harder because the benefits are not immediate. Investments in training and equipment are necessary, as is a change in mentality, and it does represent a certain risk for the farmer. In our globalised world sales prices are volatile, making it even more difficult for farmers to take the plunge."

When Bernard Mehauden, a middle-aged Belgian farmer, began to apply a mixture of agricultural knowledge and intuition to the industrial farming model that he had inherited, it did not occur to him that he was becoming a practitioner of agroecology. But no longer sticking to received formulas, Bernard now farms following his own ideas and those that he shares with his fellow farmers. These experiments are leading him down an increasingly ecological path. Bernard calls his farming "eco-logical", but it is not certified organic. He avoids niche markets and distributes via traditional sales channels to avoid worrying about marketing.

IT ALL STARTS WITH THE SOIL

Bernard Mehauden grows cereals on a larger-than-average Belgian farm. Situated on the loamy plateaus around Hesbaye in the Liège region, his is some of the best farmland in the country. Not far from Europe's biggest centres for beetroot and field vegetable processing, Bernard's operation would not seem to be a typical candidate for adopting agroecology. But his beautiful plots, soil well refined just waiting for the seeds to be sown, fell victim to a harmful phenomenon: crusting. Crusting occurs when particles in the soil stick together after the sowing of the seeds and prevent seedlings from breaking through. Desperate to find a solution, Bernard's first step was to stop ploughing his fields. He is now convinced

that he took the right decision: "15 years ago, when I understood that leaving organic matter on the surface would protect the soil, I completely stopped ploughing. Nowadays, just looking at a plough is enough to break my heart".

Professor Schmidt agrees with this conclusion. "Switching to practices that reduce the need to work the soil [Editor's note: industrial agriculture turns the soil at a depth of up to 30 centimetres; agroecology looks to avoid turning it altogether] is a win-win for farmers. It saves farmers money and more worms return to the soil, helping to maintain the soil structure, recycle nutrients, and dig tunnels for air, water, and nutrients to circulate. Worms are also an important source of food for species such as badgers, hedgehogs, and birds."

Crop rotation is ensured through alternating wheat, a winter crop, with spring crops such as sugar beet, flax for textiles, peas for canning, and chicory for producing inulin. Bernard rotates his crops once every two years. He also farms grain corn at times, a back-up solution during periods of bad weather. If it rains in the autumn when the wheat must be sown then it is best to avoid heavy machinery, which would pack the soil down, and to wait for spring and plant corn. "It's not as profitable but it's better for the soil. Either you wait for the right weather to go into the fields or you find another solution," says our farmer, demonstrating his main principle: adaption.

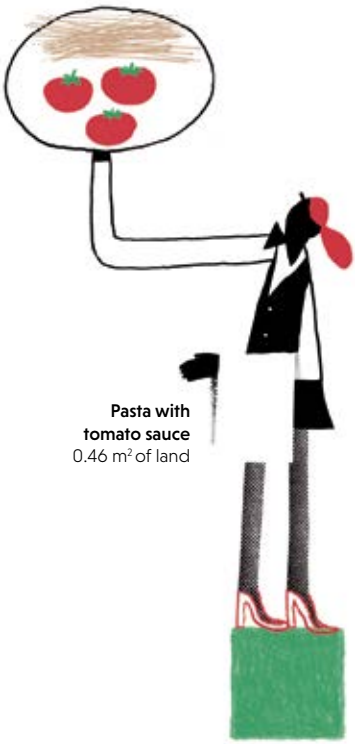
FEEDING THE SOIL

During the winter months, all of Bernard's farmland is covered, either with a winter crop or with a cover crop not to be harvested but to feed the soil. Organic cover crops are one of agroecology's main pillars. A soil full of life effectively provides services that help farmers and permit them to reduce their reliance on fertiliser and pesticides. Covers are made up of multiple plant species and contain at least one legume. A diversity of cover species means a diversity of services for the soil too.

Hamburger with fries and salad (100g beef)
3.61 m² of land

Chicken curry with rice & vegetables (75g chicken)
1.36 m² of land

Roast pork with red cabbage & potato dumplings (200g pork)
3.12 m² of land



Pasta with tomato sauce
0.46 m² of land

Area of agricultural land needed for the production of meat and vegetarian dishes

Source: Source: WWF (2011). *Meat Eats Land.*

- Area of land out of total needed for meat ingredients
- Area of land out of total needed for vegetarian ingredients

Having stopped ploughing to protect his soil and let the microscopic biodiversity build up year on year, Bernard cannot count on the plough to destroy his cover crops either. But to make space for the next crop, the cover must be removed somehow. Bernard looks to the frost to do this work for him. Before and after raising crops for sale, Bernard plants crops that are sensitive to frost and that will die off in the winter, which should mean that he will not have to use weed killer in the spring. Things, of course, do not always go as planned. Recent winters have been warmer than usual and species meant to die during the winter are, rather annoyingly, making it through to spring. He thus helps nature to destroy his cover by breaking it up with a mounted disc harrow.

Once winter comes, Bernard waits for the soil to become 'load-bearing' before working it. Load-bearing soil is one on which equipment can be used without it sinking into the earth, packing down the soil and making ruts. For roots to grow well, air, water, and life must be able to move around inside the soil. For a soil that is full of life, farmers must adapt to the weather and wait for the right moment to work the fields. So during the overnight frost, Bernard sometimes has to wake at 3 a.m. to use his mounted disc harrow. The tool damages stems, making plants more vulnerable to the cold. Bernard avoids using glyphosate herbicide whenever he can. However, if a new growth of weeds appear at the end of the winter in cover that was meant to be destroyed by frost, he uses a small amount (one litre per hectare) before sowing any seeds.

LESS IS MORE

Since he started to plant sugar beets, Bernard has reduced the amount of mineral nitrogen he spreads on his fields by half whilst maintaining the same yields. This is partly down to an improvement in sugar beet varieties, which now produce more sugar and consume less nitrogen. But the main part of this reduction in nitrogen is down to Bernard's plan for a more fertile soil, pursued on the basis of a soil analysis carried out by expert organisations.

I'M IMPROVING THE BIOLOGICAL WORTH OF MY SOIL AND THAT'S IMPORTANT FOR FUTURE GENERATIONS. I'LL BE PROUD TO PASS ON A SOIL THAT IS BOTH FERTILE AND ALIVE

Bernard has also reduced his use of phytosanitary products, or pesticides. He frowns ever so slightly as he tells us, "I use the absolute minimum amount of phytos, basically because I just don't like using them." He chooses the best possible time of year for spraying pesticides in his fields to ensure optimal impact and to minimise the necessary dose. "I don't need to use any products to protect from slugs as I don't have any here, but I don't have rapeseed. I don't need anything for field mice either, as there are not many in my fields. I've put perches up for birds of prey: a 2-metre long stick with a slat across it. There's one perch for every second hectare and I've seen birds of prey perched on them." Birds of prey help control the rodent population. A family of harriers eat between 700 and 900 rodents per year, at least during the months when they are in the area. Putting a perch up to help such birds survey the fields costs farmers much less than the damage rodents can cause.

This situation is even more complex due to European legislation banning the use of fertilisers and pesticide within 6 metres of bodies of running water. To make the most out of what could be seen as a restriction, Bernard is taking part in an environmental initiative called *bande de parcelle aménagée* [strips of converted land] for which he receives 1500 euros per hectare to convert the edges of his land that lie alongside a stream. This initiative aims to support wildlife, conserve meadow flora, improve the landscape, and fight erosion. Thanks to his strip, which is 12 metres wide and 385 metres long, Bernard helps to protect the partridge and the corn bunting, birds dependent on plant species at risk of disappearance. The strip offers these birds tall grasses for cover, grains that fall naturally, and plants full of insects in summer and grains in winter.

Ever-curious, Bernard has started to use certain plant-based products: "I've been testing them on wheat for about 10 years now. I'm not 100 per cent convinced but I'm interested in the idea. These products have allowed me to reduce the amount of fungicide I use on my wheat by 75 per cent."

The cost of the plant-based products is counterbalanced by the reduced need for fungicide. Bernard explains, "The idea is not about saving money but about using less fungicide and protecting the soil."

Last summer, after the pea harvest, Bernard planted a multi-species cover made up of phacelia, mustard, sunflowers, Egyptian clover, fava beans, and nyger seeds. In the autumn, for the first time he planted wheat straight into the cover, without destroying it first. To do this he used a direct seeder provided by Regenacterre, an association that promotes regenerative agriculture. "The neighbours looked at me like I was crazy when I was sowing the seeds, but it was a great experience and I'd love to do it again," recounts Bernard. "Direct seeding was something I had been dreaming of doing for a while but I didn't have the right seeder. One of the challenges is that you need very clean soil before sowing the cover and the cover also has to be dense enough to prevent weeds from growing because you cannot clear them before winter. The weeds protected by the cover destroyed during seeding can come back in force in the spring. After sowing the wheat, mustard plants sprouted up and I had to use two litres of Round Up (a glyphosate-based herbicide) per hectare to stop them growing and flowering. Ideally, I would have used a chopper in front of the seeder to properly remove the cover, but I don't have one."

LISTENING, LEARNING AND TRYING NEW THINGS

"We have to make this transition slowly but surely. In the future, I would like my soil to be even more full of life. To make that happen, I'll have to keep on reducing the use of phytos, increasing quantities of organic matter, and avoid deep working of the soil. I would like to try intercropping, there are many possibilities to explore there. It would be great for researchers to look into intercropping with sugar beet, chicory, corn, and grains." When we asked Bernard to tell us what he was proud of on his farm he answered, "I'm improving the biological worth of my soil and that's important for future generations. I'll be proud to pass on a soil that is both fertile and alive."

FRÉDÉRIQUE HUPIN
is a trained agronomist with over 15 years of hands-on experience of sustainable farming practices. She is an independent agricultural consultant and journalist and writes for the Belgian daily *L'Avenir* and for the French magazine *Techniques Culturales Simplifiées.*

UNCONDITIONAL FREEDOM 2049

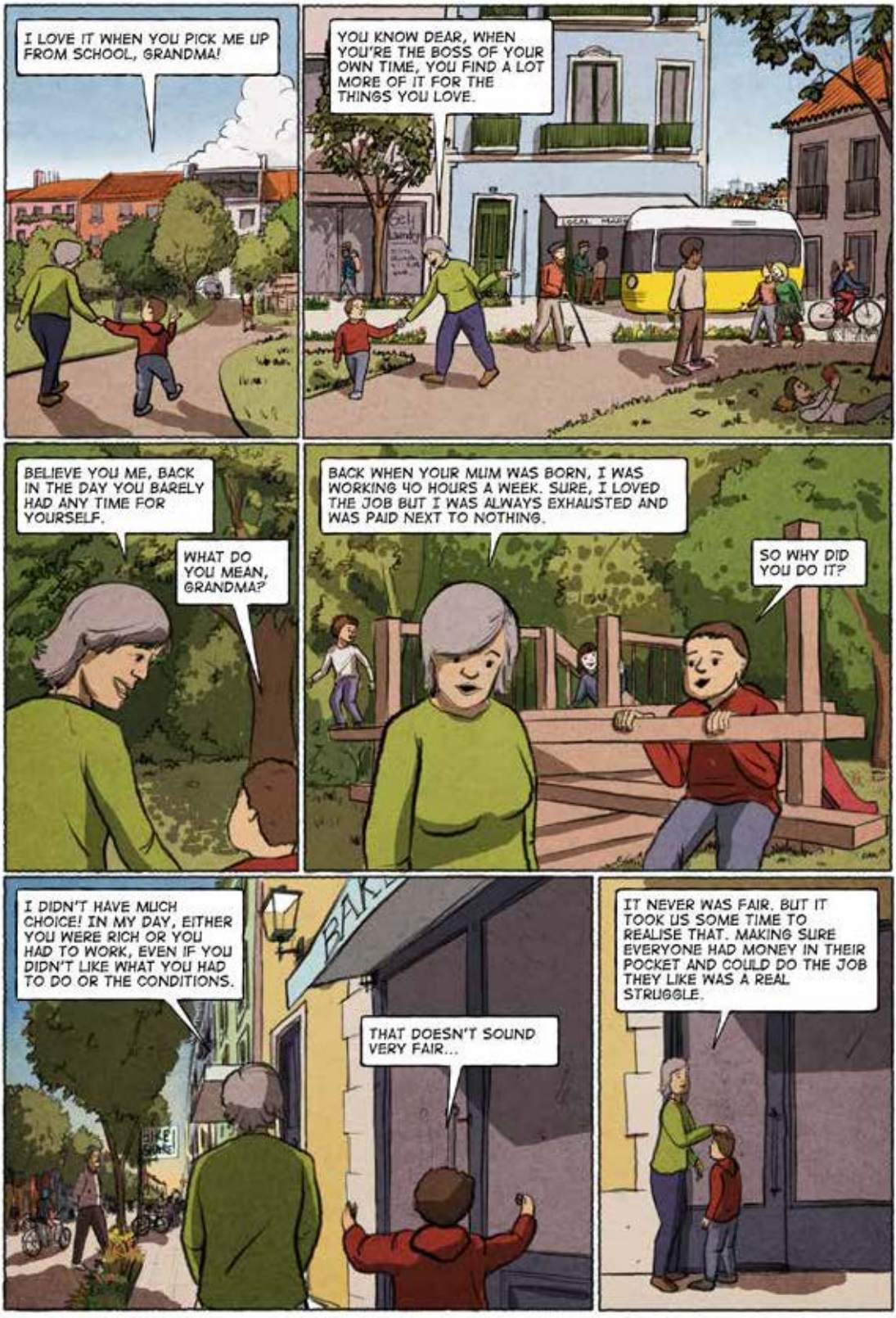
EUROPE, YEAR 2049. NOT SO LONG AGO THE CONTINENT WAS MARKED BY UNEMPLOYMENT AND PRECARIOUS WORK. JOBS ESSENTIAL TO SOCIETY WERE POORLY PAID BECAUSE THE NUMBER OF PEOPLE DESPERATE TO BRING IN SOME INCOME ALLOWED EMPLOYERS TO GET AWAY WITH ALL KINDS OF ARBITRARY ABUSES. AT THE SAME TIME, THE ECOLOGICAL CRISIS BECAME A REALITY. IT AFFECTED EVERYONE, BUT ESPECIALLY THOSE ALREADY SUFFERING DISCRIMINATION. THIS EUROPEAN MALAISE LED MORE AND MORE PEOPLE TO DEMAND GREATER JUSTICE AND FAIRNESS. THE IDEA OF A PROGRESSIVE, FEMINIST AND REPUBLICAN UNCONDITIONAL BASIC INCOME MADE ITS WAY FROM A FRINGE IDEA TO A TRUE EUROPEAN DEMAND. THE FOLLOWING PAGES TELL ONE OF THE STORIES OF HOW WE GOT HERE. THE PATH WAS LONG AND FILLED WITH OBSTACLES. BUT IT WAS WORTH IT.

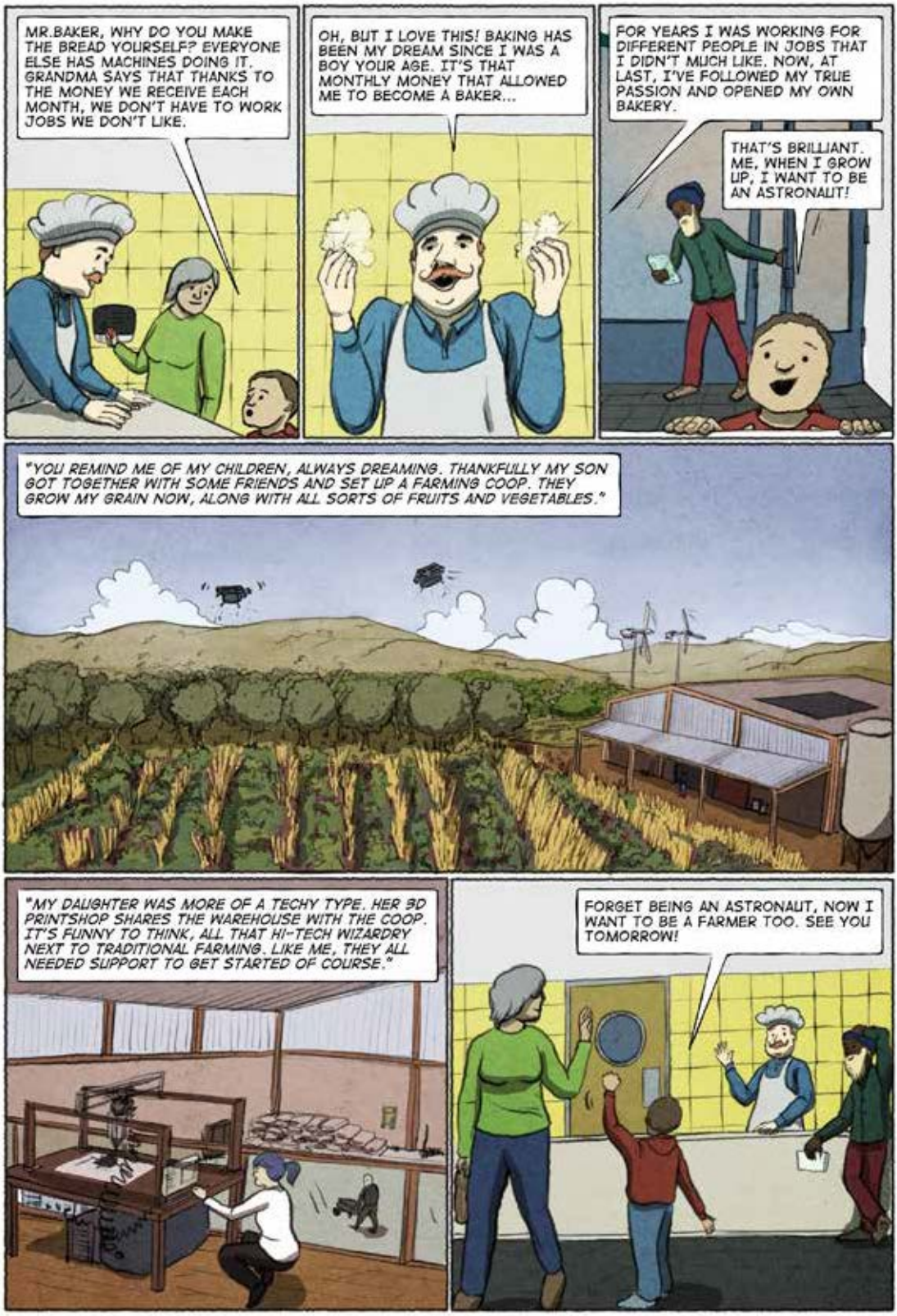
JORGE PINTO

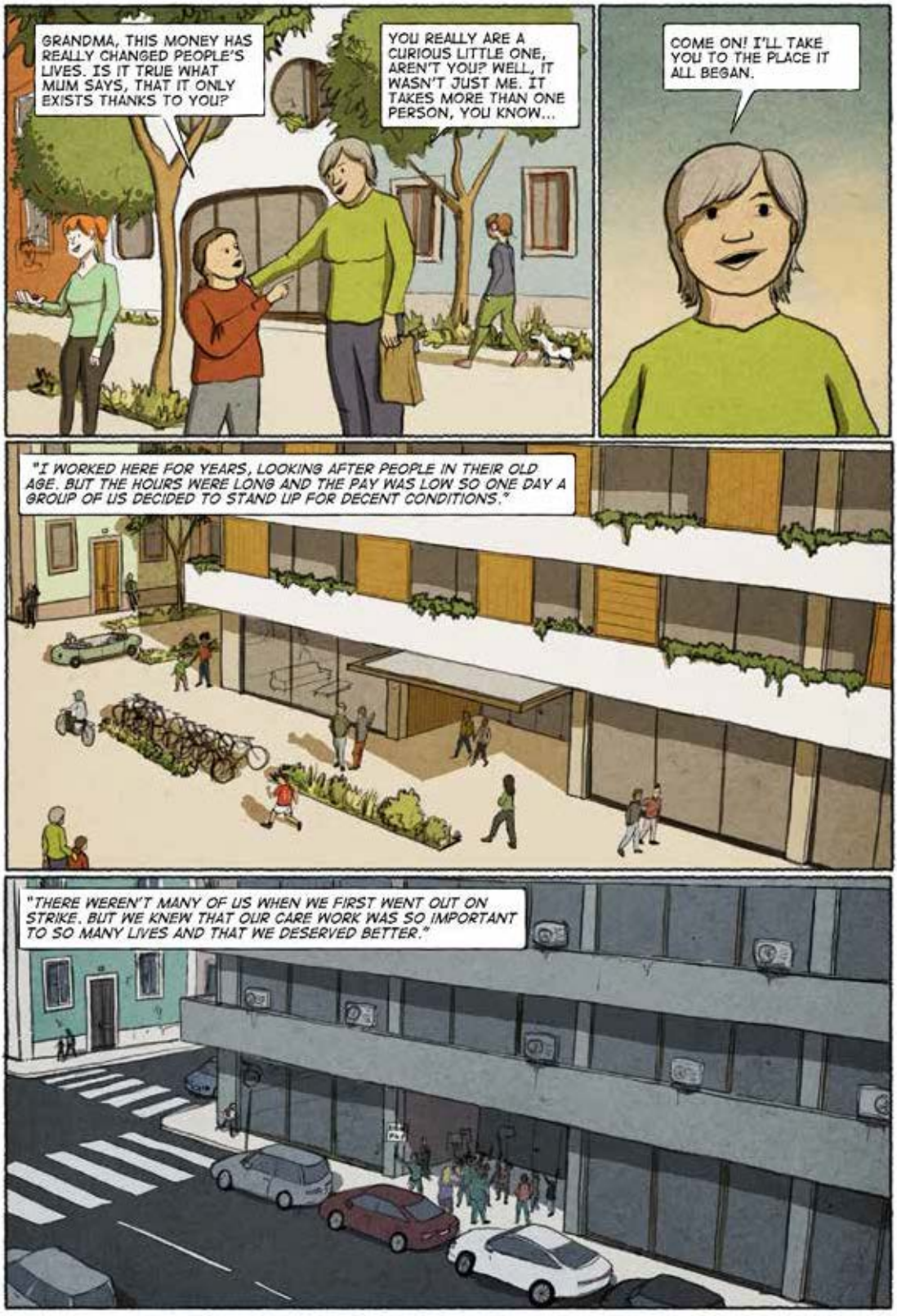
IS A RESEARCH ASSOCIATE AT THE CENTRE FOR ETHICS, POLITICS, AND SOCIETY (UNIVERSITY OF MINHO, PORTUGAL) AND CO-FOUNDER OF THE PORTUGUESE PARTY LIVRE

EDUARDO VIANA

IS AN ARCHITECT, URBAN PLANNER AND ILLUSTRATOR, AND CO-FOUNDER OF THE PORTUGUESE PARTY LIVRE

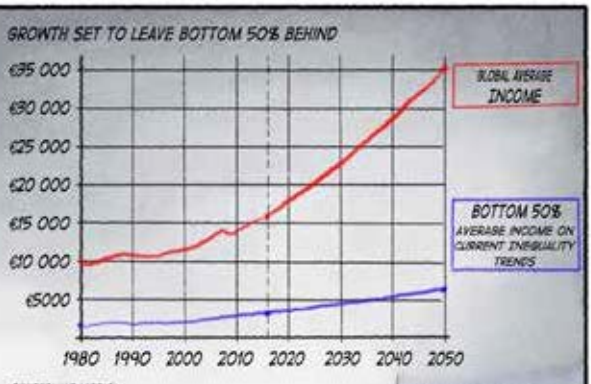

I LOVE IT WHEN YOU PICK ME UP FROM SCHOOL, GRANDMA!
YOU KNOW DEAR, WHEN YOU'RE THE BOSS OF YOUR OWN TIME, YOU FIND A LOT MORE OF IT FOR THE THINGS YOU LOVE.
BELIEVE YOU ME, BACK IN THE DAY YOU BARELY HAD ANY TIME FOR YOURSELF.
WHAT DO YOU MEAN, GRANDMA?
BACK WHEN YOUR MUM WAS BORN, I WAS WORKING 40 HOURS A WEEK. SURE, I LOVED THE JOB BUT I WAS ALWAYS EXHAUSTED AND WAS PAID NEXT TO NOTHING.
SO WHY DID YOU DO IT?
I DIDN'T HAVE MUCH CHOICE! IN MY DAY, EITHER YOU WERE RICH OR YOU HAD TO WORK, EVEN IF YOU DIDN'T LIKE WHAT YOU HAD TO DO OR THE CONDITIONS.
THAT DOESN'T SOUND VERY FAIR...
IT NEVER WAS FAIR. BUT IT TOOK US SOME TIME TO REALISE THAT. MAKING SURE EVERYONE HAD MONEY IN THEIR POCKET AND COULD DO THE JOB THEY LIKE WAS A REAL STRUGGLE.


MR.BAKER, WHY DO YOU MAKE THE BREAD YOURSELF? EVERYONE ELSE HAS MACHINES DOING IT. GRANDMA SAYS THAT THANKS TO THE MONEY WE RECEIVE EACH MONTH, WE DON'T HAVE TO WORK JOBS WE DON'T LIKE.
OH, BUT I LOVE THIS! BAKING HAS BEEN MY DREAM SINCE I WAS A BOY YOUR AGE. IT'S THAT MONTHLY MONEY THAT ALLOWED ME TO BECOME A BAKER...
FOR YEARS I WAS WORKING FOR DIFFERENT PEOPLE IN JOBS THAT I DIDN'T MUCH LIKE. NOW, AT LAST, I'VE FOLLOWED MY TRUE PASSION AND OPENED MY OWN BAKERY.
THAT'S BRILLIANT. ME, WHEN I GROW UP, I WANT TO BE AN ASTRONAUT!
"YOU REMIND ME OF MY CHILDREN, ALWAYS DREAMING. THANKFULLY MY SON GOT TOGETHER WITH SOME FRIENDS AND SET UP A FARMING COOP. THEY GROW MY GRAIN NOW, ALONG WITH ALL SORTS OF FRUITS AND VEGETABLES."
"MY DAUGHTER WAS MORE OF A TECHY TYPE. HER 3D PRINTSHOP SHARES THE WAREHOUSE WITH THE COOP. IT'S FUNNY TO THINK, ALL THAT HI-TECH WIZARDRY NEXT TO TRADITIONAL FARMING. LIKE ME, THEY ALL NEEDED SUPPORT TO GET STARTED OF COURSE."
FORGET BEING AN ASTRONAUT, NOW I WANT TO BE A FARMER TOO. SEE YOU TOMORROW!


GRANDMA, THIS MONEY HAS REALLY CHANGED PEOPLE'S LIVES. IS IT TRUE WHAT MUM SAYS, THAT IT ONLY EXISTS THANKS TO YOU?
YOU REALLY ARE A CURIOUS LITTLE ONE, AREN'T YOU? WELL, IT WASN'T JUST ME. IT TAKES MORE THAN ONE PERSON, YOU KNOW...
COME ON! I'LL TAKE YOU TO THE PLACE IT ALL BEGAN.
"I WORKED HERE FOR YEARS, LOOKING AFTER PEOPLE IN THEIR OLD AGE. BUT THE HOURS WERE LONG AND THE PAY WAS LOW SO ONE DAY A GROUP OF US DECIDED TO STAND UP FOR DECENT CONDITIONS."
"THERE WEREN'T MANY OF US WHEN WE FIRST WENT OUT ON STRIKE. BUT WE KNEW THAT OUR CARE WORK WAS SO IMPORTANT TO SO MANY LIVES AND THAT WE DESERVED BETTER."


"MORE AND MORE WOMEN CAME OUT TO JOIN US. PLENTY WORKING IN EVEN WORSE CONDITIONS THAN WE WERE. WE WERE OUT EVERY DAY IN BIGGER NUMBERS AND LOUDER VOICE."
DAY CARE CENTER
"NEXT THING WE KNEW, PEOPLE FROM ALL OVER WERE JOINING US. SECURITY GUARDS, TAXI DRIVERS, ALL UNDERPAID, UNCERTAIN OR OUT OF WORK ALTOGETHER. I DON'T KNOW IF YOU CAN IMAGINE BUT BACK THEN, A LOT OF YOUNG PEOPLE COULDN'T FIND WORK FULL STOP!"
"FROM SIMPLY CLAIMING BETTER CONDITIONS FOR US CARE WORKERS, WE THEN DEMANDED A BASIC INCOME FOR ALL."
BASIC INCOME BASIC RIGHT!
I AM A CITIZ I DESERVE IT!
THE RIGHT TO EXIST!
NO EXISTENCE WITHOUT SUBSISTENCE
AN INCOME FOR ALL!
"SOME WANTED BASIC INCOME TO CHANGE JOBS AND FIND SOMETHING NEW, OTHERS TO BE ABLE TO KEEP DOING THE WORK THEY LOVED. OTHERS SAW IT AS A RIGHT FOR ALL IN A FAIR SOCIETY..."

"IT KEPT ON GROWING AS MORE AND MORE PEOPLE JOINED. SOON OTHER CITIES AROUND EUROPE WERE FOLLOWING OUR EXAMPLE TOO."

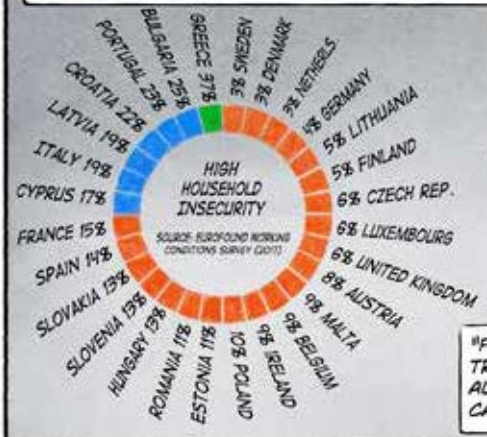


"WE WERE SPEAKING TO PEOPLE FROM ALL OVER AND THE CAMPAIGN SPREAD ACROSS EUROPE. WE DIDN'T AGREE ON EVERYTHING, BUT EVERYONE SHARED A DESIRE FOR MORE CONTROL OVER THEIR OWN LIVES."

THE FUTURE IS EUROPE

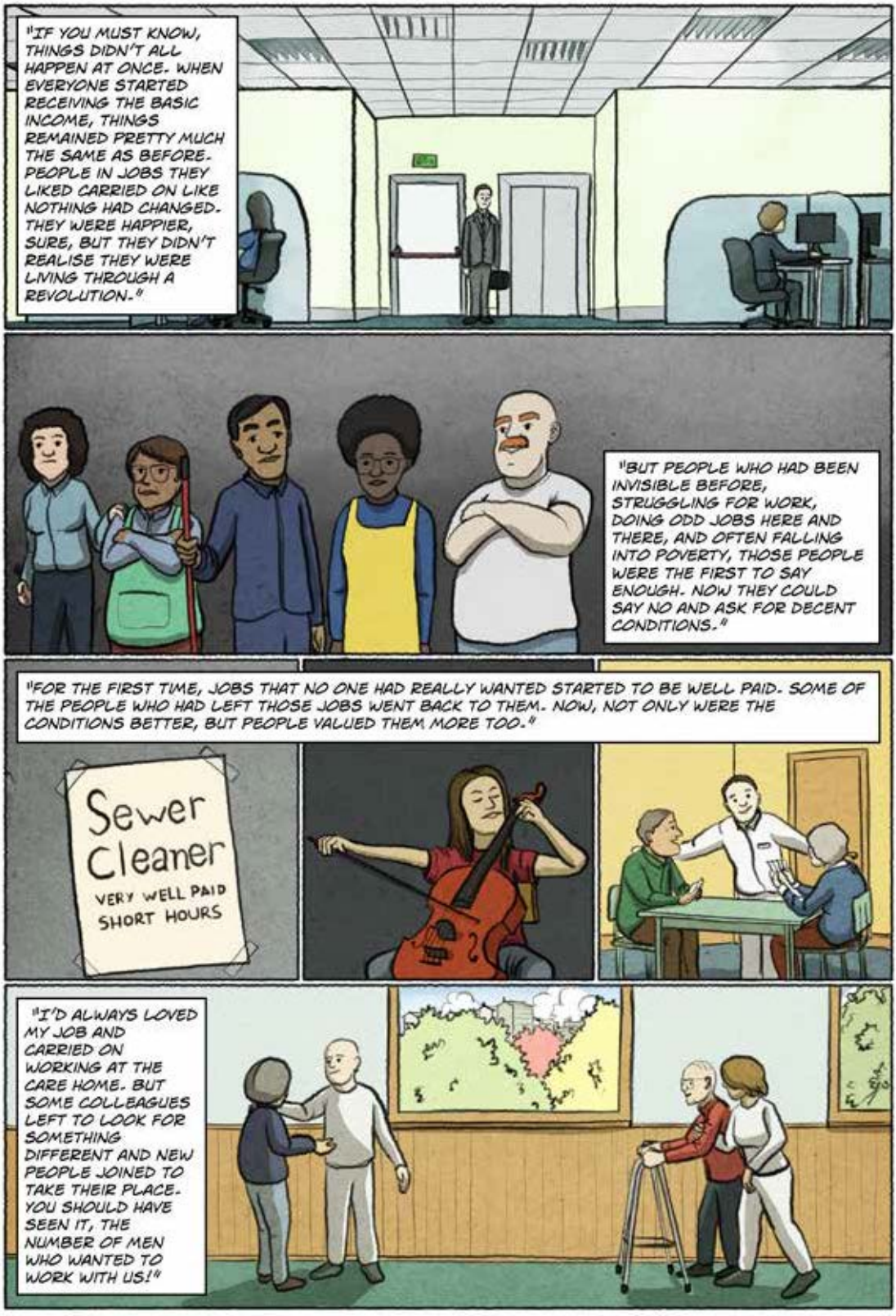
BASIC INCOME, BASIC RIGHT

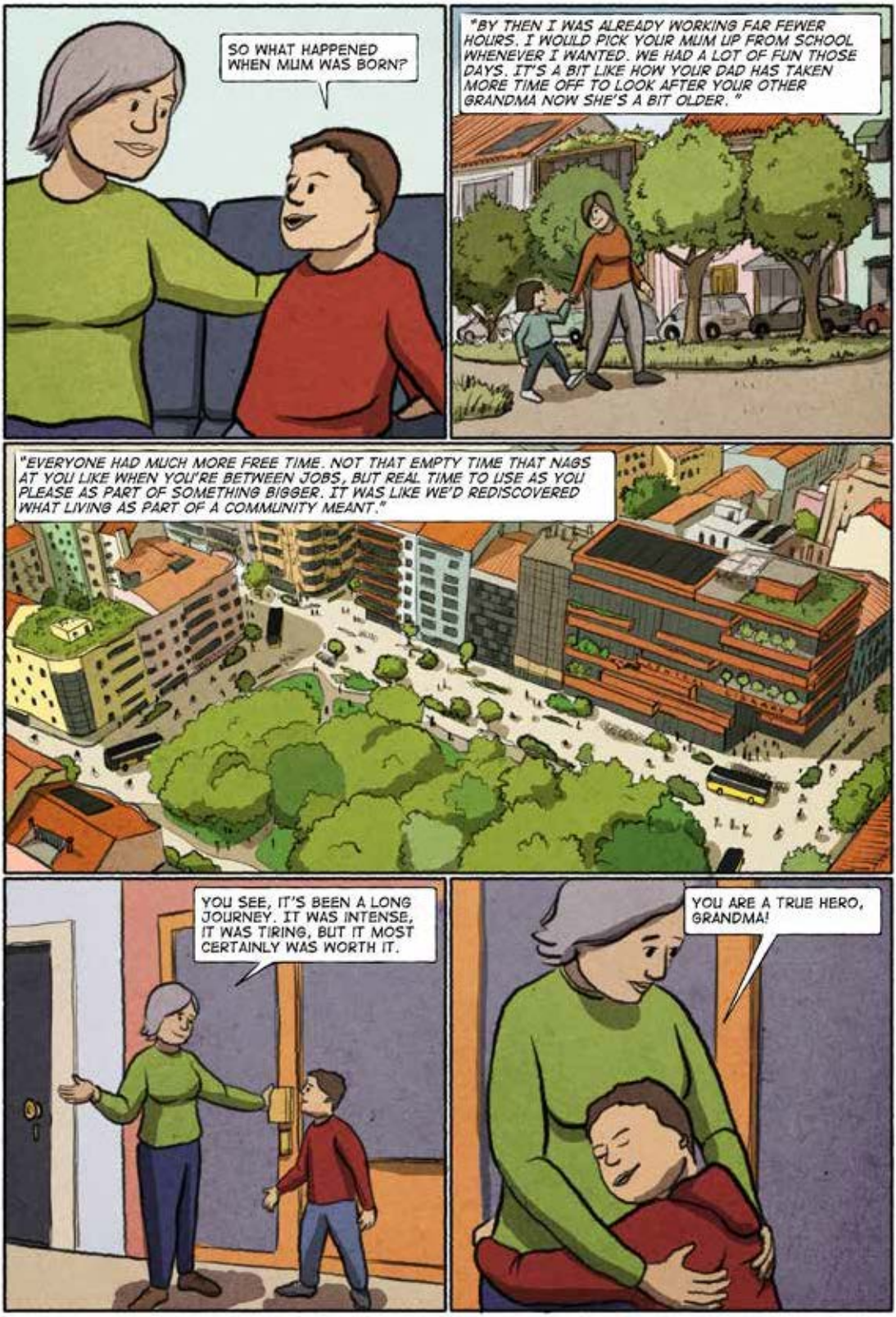
"WE WERE STANDING UP AGAINST POVERTY AND FOR JUSTICE AND EQUALITY. INEQUALITY ACROSS EUROPE WAS BAD AND ONLY GETTING WORSE, WITH THE RICH GETTING RICHER AND THE POOR LOSING WHAT LITTLE THEY HAD."



"FACED WITH HARD TIMES AND GROWING ENVIRONMENTAL TROUBLES, CALLING FOR THE SAME BASIC INCOME FOR ALL ACROSS EUROPE BECAME THE MOVEMENT'S COMMON CAUSE."


THAT IS AMAZING, GRANDMA. I WANT TO CAMPAIGN LIKE YOU DID WHEN I GROW UP!
A DREAM
COMICS ON JOB
PLEASE CONTINUE THE STORY. WHAT HAPPENED NEXT? HOW DID THINGS CHANGE?
A DREAM
COME HERE, I'LL TELL YOU WHAT HAPPENED NEXT...


"IF YOU MUST KNOW, THINGS DIDN'T ALL HAPPEN AT ONCE. WHEN EVERYONE STARTED RECEIVING THE BASIC INCOME, THINGS REMAINED PRETTY MUCH THE SAME AS BEFORE. PEOPLE IN JOBS THEY LIKED CARRIED ON LIKE NOTHING HAD CHANGED. THEY WERE HAPPIER, SURE, BUT THEY DIDN'T REALISE THEY WERE LIVING THROUGH A REVOLUTION."
"BUT PEOPLE WHO HAD BEEN INVISIBLE BEFORE, STRUGGLING FOR WORK, DOING ODD JOBS HERE AND THERE, AND OFTEN FALLING INTO POVERTY, THOSE PEOPLE WERE THE FIRST TO SAY ENOUGH. NOW THEY COULD SAY NO AND ASK FOR DECENT CONDITIONS."
"FOR THE FIRST TIME, JOBS THAT NO ONE HAD REALLY WANTED STARTED TO BE WELL PAID. SOME OF THE PEOPLE WHO HAD LEFT THOSE JOBS WENT BACK TO THEM. NOW, NOT ONLY WERE THE CONDITIONS BETTER, BUT PEOPLE VALUED THEM MORE TOO."
Sewer Cleaner
VERY WELL PAID
SHORT HOURS
"I'D ALWAYS LOVED MY JOB AND CARRIED ON WORKING AT THE CARE HOME. BUT SOME COLLEAGUES LEFT TO LOOK FOR SOMETHING DIFFERENT AND NEW PEOPLE JOINED TO TAKE THEIR PLACE. YOU SHOULD HAVE SEEN IT, THE NUMBER OF MEN WHO WANTED TO WORK WITH US!"


SO WHAT HAPPENED WHEN MUM WAS BORN?
"BY THEN I WAS ALREADY WORKING FAR FEWER HOURS. I WOULD PICK YOUR MUM UP FROM SCHOOL WHENEVER I WANTED. WE HAD A LOT OF FUN THOSE DAYS. IT'S A BIT LIKE HOW YOUR DAD HAS TAKEN MORE TIME OFF TO LOOK AFTER YOUR OTHER GRANDMA NOW SHE'S A BIT OLDER."
"EVERYONE HAD MUCH MORE FREE TIME. NOT THAT EMPTY TIME THAT NAGS AT YOU LIKE WHEN YOU'RE BETWEEN JOBS, BUT REAL TIME TO USE AS YOU PLEASE AS PART OF SOMETHING BIGGER. IT WAS LIKE WE'D REDISCOVERED WHAT LIVING AS PART OF A COMMUNITY MEANT."
YOU SEE, IT'S BEEN A LONG JOURNEY. IT WAS INTENSE, IT WAS TIRING, BUT IT MOST CERTAINLY WAS WORTH IT.
YOU ARE A TRUE HERO, GRANDMA!


EVERYONE IS A HERO IN THIS STORY, LITTLE ONE. EVERYONE DID THEIR BIT, I WAS JUST AS IMPORTANT AS ANYONE ELSE.
I'VE DECIDED WHAT I WANT TO BE WHEN I GROW UP.
I WANT TO BE LIKE YOU.

WHAT TO WEAR?

WHY FAST FASHION IS COSTING THE EARTH

ARTICLE BY
SILJA KUDEL

The glamorous world of fashion has ugly skeletons in its closet. Textile production is one of the world's dirtiest polluters. Huge volumes of low-cost garments are being churned out at high environmental and ethical cost, and at a pace that has doubled in only 15 years. The 'take-make-dispose' model of production is ripe for deep systemic change, but are we ready for a circular textile economy by 2049?

Anna K. is a typical 16-year-old European fashion consumer. Like many teens, she likes to refresh her wardrobe frequently with trendy streetwear and stylish new accessories. Being a high-school student on a strict budget, she favours low-cost brands and binges on January sales, treating herself to impulse purchases she may never wear more than once.

Anna admittedly looks cute in her glitter t-shirt, form-fitting jeans, and chunky-heeled gladiator sandals. But cute comes with a price tag that the planet can no longer afford.

Let's start with her thirsty cotton t-shirt, which guzzled nearly three thousand litres of water before it ever saw a washing machine. The fashion industry is estimated to consume around 79 billion cubic metres of water per year in cotton crop irrigation and industrial processing: that is enough drinking water for 110 million people for an entire year.[1]

1 Global Fashion Agenda and The Boston Consulting Group (2017). *Pulse of the Fashion Industry Report.* Available at <bit.ly/2GhsD8w>

Anna's t-shirt also leaves a toxic trail. Roughly 3 per cent of the world's farmland is planted with cotton, yet cotton accounts for an estimated 16 per cent of global insecticide usage and 7 per cent of all herbicides.[2] Organic cotton – though water-intensive – is a more sustainable alternative, but it currently represents less than 1 per cent of the world's annual cotton crop.

ALL THAT GLITTERS IS NOT GOLD

The metallic print on Anna's t-shirt is eye-catching for two reasons: it adds bling to her look, yet it also signals the presence of toxic phthalates. The indigo dye, too, is a cocktail of poisons. The bright colours and appealing prints of many garments are achieved with heavy metals such as copper, arsenic, and lead, together with hazardous chemicals such as nonylphenol ethoxylates.

The textile industry is among the world's top polluters of clean water, with the dyeing and treatment of textiles accounting for 20 per cent of all industrial water pollution.[3] Despite initiatives such as Greenpeace's recent Detox campaign pressuring fashion giants to commit to zero discharge of hazardous chemicals, the use of toxic substances continues in the absence of strict global regulation.

This brings us to the 'Made in Bangladesh' label on Anna's budget-priced skinny jeans. Many fashion companies outsource production to factories in developing countries, where environmental regulations are observed laxly. Dangerous chemicals are often discharged, untreated, into sensitive waterways, where they contaminate groundwater with bioaccumulative, hormone-disruptive, and carcinogenic pollutants.

Besides cutting environmental corners, low-wage countries are notorious for labour rights abuses. It is estimated that 40 million people sew more than 1.5 billion garments in 250 000 factories and sweatshops each year, where countless workers are denied basic rights, fair wages, and ethical working conditions. Unsafe conditions remain rife in the industry despite headline-grabbing incidents such as the 2013 Rana Plaza disaster in Dhaka, Bangladesh, in which over 1000 workers were killed when the building collapsed. And, whilst a 'Made in Europe' label might suggest better conditions, many textile workers in Eastern and South-Eastern Europe similarly face poverty, dangerous conditions, and forms of exploitation such as forced overtime.[4]

As textile factories are typically located far away from affluent consumer markets,

2 Ibid.
3 Ellen MacArthur Foundation (2017). *A new textiles economy: Redesigning fashion's future*. Available at <bit.ly/2S37q9t>.
4 Clean Clothes Campaign. *Made in Europe: the ugly truth*. Available at <http://bit.ly/2HHso95>.

many garments travel vast distances on oil-guzzling, carbon-spewing ships, aeroplanes, and trucks. Anna's skinny jeans have travelled halfway across the world from Bangladesh to Finland: that is over 6000 kilometres, yet the cost of this journey is ridiculously cheap – roughly 20 cents. Many garments are designed in one country, spun in another, sewn and finished in yet another, and then finally shipped to the retailer, leaving a dirty trail of transport emissions. And, at the end of its journey, an item that has travelled thousands of kilometres might never be sold, ending up shredded or incinerated as 'deadstock' clothing waste.

OCEANS OF DIRTY LAUNDRY

Anna's skinny jeans present a further problem: they are made of polyester, a petroleum product. Synthetic fabrics such as polyester require more frequent washing than natural fibres – odour-spreading bacteria love nothing more than a sweaty polyester garment. But when polyester is washed in a domestic washing machine, it exacerbates another grave global problem: ocean plastic pollution.

Polyester, nylon, and acrylic fabrics are all forms of plastic. Every time they are washed, they leach into the environment: a single load of laundry is estimated to release hundreds of thousands of fibres. These fibres pass through sewage and wastewater treatment plants into waterways and eventually the ocean, where they are ingested by marine life and make their way up the food chain. Microscopic particles of Anna's oil-based jeans might end up on your plate as a 'secret ingredient' in your next seafood dinner.

Last of all, Anna's strappy sandals show off her pretty ankles, but leave an ugly footprint. On average, the production of one shoe generates 14 kilogrammes of carbon dioxide.[5] With 15 billion shoes produced each year, the industry contributes significantly to one of the greatest challenges facing humanity today: climate change. Textiles production releases greenhouse gas emissions to the tune of 1.2 billion tonnes annually – more than those of international flights and maritime shipping combined.

What is more, the adhesives and tanning agents used in shoe manufacturing contain hazardous chemicals such as chlorinated phenols, tribromphenol, and hexavalent chromium. Old shoes are typically discarded rather than recycled, usually ending up at landfills, where they contaminate both soil and water.

And the mountains of cast-offs keep growing year after year. After Anna has washed her cheap t-shirt five times, it has already lost its shape and colour. She tosses her faded top in the bin and heads off to hunt for a new bargain: up to 75 per cent of fashion apparel is sold at discount prices. Because consumers have less time and more disposable income than previous generations, it is cheaper and easier to buy a new item than mend old ones.

SYSTEM ERROR: LESS IS MORE

In total, Anna's entire outfit cost her less than 40 euros, yet the ethical and environmental price tag is immeasurably greater. But how big a share of the blame for all this pollution and wastage do Anna and the millions of consumers like her deserve?

"The biggest obstacle to sustainable fashion is the ruling fast-fashion business model. Fashion companies only know one way to make a profit: to focus on speed, producing high volumes at low cost, and selling cheap. This automatically fosters a throwaway culture," says Kirsi Niinimäki, Associate Professor of Fashion Research and leader of the Textiles Futures research group at Helsinki's Aalto University.

5 Jennifer Chu (2013). Footwear's (carbon) footprint. *MIT News*. Available at <http://bit.ly/2WwxzfA>.

The take-make-dispose model leads to extreme wastefulness, because more people are buying more clothes and discarding them faster and faster. "The market is oversaturated. It's estimated that 30 per cent of all garments are never even sold. In order to sell more, retailers convince consumers that the items they own are no longer fashionable," explains Niinimäki.

"It's time for a strategic, system-level change. We need to slow down the process and creatively transform the way clothing is produced, sold, and used. The future textile industry must be based on the principles of circular economy," she states emphatically.

The circular economy is a new economic model that proposes novel ways of designing products to generate less waste, prevent pollution, and minimise energy usage. Instead of instantly becoming waste after use, products are reused and recycled to extract maximum value before being safely returned to the biosphere.

Major textile brands are already experimenting with circular innovations. Adidas is transforming ocean plastic waste into high-performance footwear, while Speedo is making swimwear sourced from remnants and offcuts. At present the key challenge is not production technology, but psychology – it appears to be easier to turn plastic scrap into a shoe than to update consumer attitudes.

CONSUMERS SHOULD BE RE-EDUCATED TO EMBRACE CIRCULAR, 'SLOW FASHION' ALTERNATIVES

As a specialist in re-directive design, Niinimäki believes consumers should be re-educated to embrace circular, 'slow fashion' alternatives. "Most consumers don't even know exactly what they're buying and how it's produced. When I tell people that two thirds of what they're wearing is made of oil, they're always shocked," she reveals.

"Back in the 1950s, 30 per cent of household income was spent on garments. Today the figure is less than 10 per cent, yet we own 20 times more clothing. Clothes are simply too cheap. It's time to root out the attitude that fashion should be inexpensive – we can afford to invest in better quality."

There is rising interest in a transition towards a circular model of textile production, but recycling rates for textiles remain low. Professor Niinimäki believes that regulatory instruments, taxes, and financial sanctions would be the fastest way to make a difference.

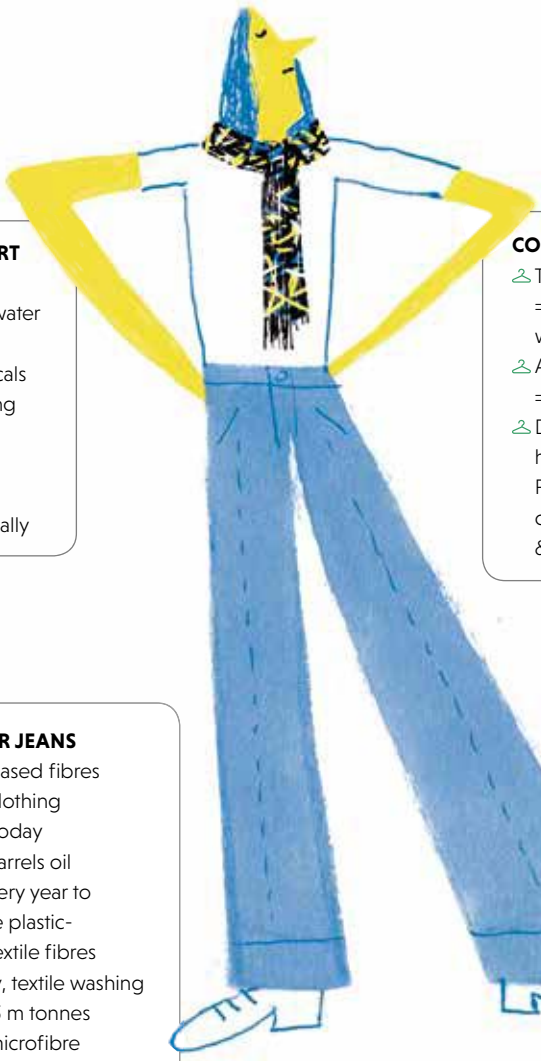
"There are many good laws in place in the European Union, but even the best legislation is useless if it's not applied or monitored in the countries where textiles are actually produced. We need strict regulation that is observed universally. Societal and environmental impacts must be measured systematically," she affirms.

The European Union restricts a great number of chemicals used in textile products marketed in Europe. Most of these restrictions are listed in the EU's REACH regulation, and REACH Annex XVII has newly been amended to ban dangerous levels of substances classified as carcinogenic, mutagenic or toxic for reproduction.

The European Commission is currently working on mandatory origin labelling for textiles. At present, 'made-in' labelling is voluntary. There is also no EU-wide legislation on the use of symbols for washing instructions and other care of textile items.

ANNA K.

2019



COTTON T-SHIRT

- 227 g t-shirt = 2700 litres water
- 1 kg cotton ≈ 3 kg chemicals
- Cotton farming = 16% global pesticides + 8 m tonnes fertiliser annually

COLOURFUL SCARF

- Textile dyeing & treatment = 20% global industrial water pollution
- Annual textile production = 43 m tonnes chemicals
- Dyes & treatments contain heavy metals e.g. Cu, As, Pb, Cd, Hg, Ni & Co + toxic chemicals e.g. phthalates & formaldehyde

POLYESTER JEANS

- Plastic-based fibres = 60% clothing market today
- 342 m barrels oil used every year to produce plastic-based textile fibres
- Annually, textile washing leaks 0.5 m tonnes plastic microfibre into oceans ≥ 50 bn plastic bottles

SHOES

- 1 shoe = 14 kg CO_2
- 15 bn shoes produced each year
- Toxic substances e.g. hexavalent chrome, a recognised carcinogen, used for tanning leather

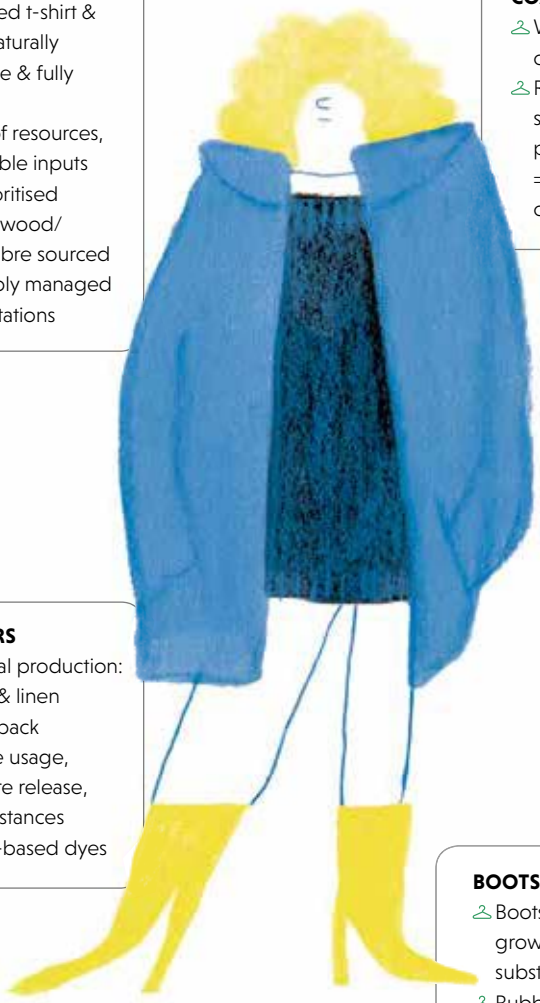
- **Textile production = 93 bn m^3 water annually = 4% global freshwater withdrawal**
- **97% materials from virgin feedstock**
- **73% garments landfilled/incinerated at end of life**
- **< 1% closed-loop recycling**
- **Textile production = 1.2 bn tonnes CO_2 emissions annually**

MARIA K.

2049

T-SHIRT
- Cellulose-based t-shirt & underwear: naturally biodegradable & fully compostable
- Efficient use of resources, 100% renewable inputs
- Recycling prioritised
- Regenerative wood/ plant-based fibre sourced from sustainably managed forests & plantations

COAT
- Weatherproof coat made of recycled fishing nets
- Radically improved systems of yarn, fibre & polymer recycling = a business opportunity of nearly €100 bn annually



CASHMERE JUMPER
- Online flea markets & fashion leasing services: access without ownership
- Large-scale adoption of repair services = significant increase in clothing utilisation

HEMP TROUSERS
- Rebirth of local production: hemp, nettle & linen make a comeback
- Zero pesticide usage, zero microfibre release, zero toxic substances
- Natural, plant-based dyes

BOOTS
- Boots made of Zoa™, a lab-grown, animal-free leather substitute based on collagen
- Rubber outsoles made of recycled tyres = virgin rubber saved & less landfill waste

- **Increased rate of clothing utilisation & recycling = reduced water consumption, landfill & incineration = significant pollution reduction**
- **Safe, healthy material inputs = fewer health risks, no hazards for workers**
- **Low-carbon materials, renewable energy + circular textile industry = estimated 44% reduction in GHG emissions**

THE FUTURE FASHION INDUSTRY IS ONE IN WHICH THERE IS NO WASTE, ONLY RAW MATERIAL: ONE INDUSTRY'S TRASH IS ANOTHER'S TREASURE.

Another welcome regulatory instrument would be a carbon tax to encourage energy efficiency in factories and to boost the usage of recycled polyester, which has a much lower carbon footprint than virgin polyester. For now, however, recycled polyester is prohibitively expensive.

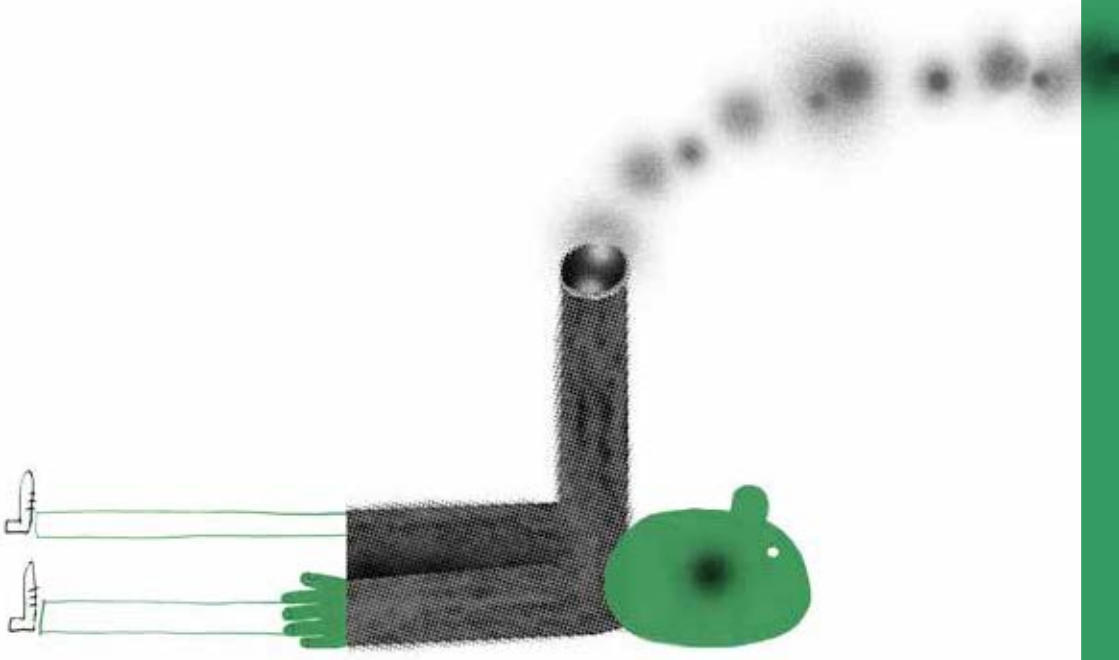
"There are many challenges in moving towards a more circular economy. There is no single policy measure that could solve all of them," notes Professor Riina Antikainen, Director of the Programme for Sustainable Circular Economy at the Finnish Environment Institute (SYKE).

Alongside regulation, Antikainen proposes that monetary instruments, such as public investment, should be targeted to support more circular business models. "The textiles question should be considered from a holistic perspective, considering lifetime environmental and social impacts, and a broad roadmap for action and measures should be created."

MORAL FIBRE: SOMETHING OLD, SOMETHING NEW

If the future of fashion is circular, where exactly are we headed? It is 2049, Anna K. is 46 and she has a 16-year-old daughter, Maria. Due to unchecked global warming, the Earth's temperature has risen over 2 degrees Celsius, and increasing areas of land are plagued by severe drought. Most remaining arable land is reserved for food, and stringent regulations are in place to protect the planet's dwindling water resources from further pollution. The suicide of fast fashion is a widely accepted reality.

Maria's outfit generates zero waste. Most items are made of renewable raw materials such as wood, plants or algae. Some are produced from upcycled industrial side-streams and chemically or mechanically recycled materials. Traditional materials such as hemp, nettle, and linen have



made a big comeback, spurring the rebirth of local production. Following in the wake of the local food boom, local textiles are a hot trend in 2049. Fashion consumers insist on knowing the precise origin of every item they purchase. Many of Maria's friends are on a 'no-polyester diet'.

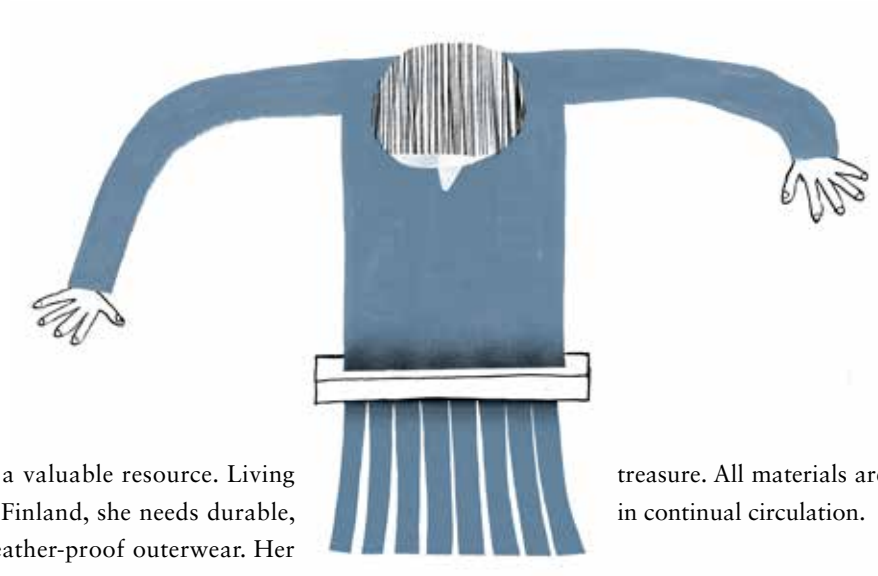
Today she is wearing trousers made out of sustainably farmed local nettle, which thrives at northern latitudes without requiring the use of pesticides. Many small-scale hemp farms in Europe do their own harvesting, spinning, designing, and manufacturing onsite. These micro-labels produce small batches of durable, quality-focused fashion in collaboration with local designers.

Because toxic chemicals have been outlawed globally in textile processing and finishing, the earthy colours of Maria's apparel are achieved with plant-derived dyes and wood extractives.

As a lover of vintage fashion, Maria acquires luxury garments through peer-to-peer sharing and pay-per-use leasing services similar to Uber and Airbnb. The sharing economy provides both convenience and value for fashion buffs, as it is cheaper to rent expensive items than buy them outright. 'Access without ownership' is the credo of the 2049 fashion consumer.

Maria's vintage cashmere jumper is from an online flea market. The lifespan of high-quality, self-cleaning natural materials such as cashmere can be extended by many years with careful upkeep. Maria pays a monthly fee to have a fixed number of garments mended to increase the longevity of her valued fashion treasures.

Many items in Maria's wardrobe are sourced from agricultural and industrial side-streams, directing waste back into the circular economy



as a valuable resource. Living in Finland, she needs durable, weather-proof outerwear. Her winter coat is made of re-purposed nylon sourced from discarded fishing nets. The outsoles of her animal-free leather boots are made from recycled automotive tyres. In 2049, virgin rubber is no longer used in footwear, and tyres no longer end up at landfills.

Her underwear is made of new wood-based fabrics similar to lyocell, a fully biodegradable form of rayon made from dissolved wood pulp. Lyocell fibre can be produced in a closed-looped system incorporating recycled cotton scraps, resulting in a silk-like, ecofriendly alternative to synthetic fibres.

CIRCULAR: THE NEW BLACK

The future fashion industry is one in which there is no waste, only raw material: one industry's trash is another's treasure. All materials are kept in continual circulation.

While Maria's wardrobe may sound utopian, this vision is neither fanciful nor unrealistic. "We are already seeing exciting innovations in textile production technology. Wholly new materials are being developed out of waste and side streams. Some are produced using microbes or fungi, or with the help of biotechnology," describes Professor Pirjo Kääriäinen, a specialist in design-driven fibre innovation at Aalto University.

"There are many promising fashion innovators doing interesting work with recycled content and enzyme technology to minimise usage of virgin resources," adds Kääriäinen. She offers the example of Modern Meadow, a New Jersey startup that has invented a lab-grown, animal-free leather substitute called Zoa™, the first biofabricated material based on collagen.

"Another pioneer is Pure Waste, a Finnish company that has made significant investments in cutting-edge mechanical systems to produce 100 per cent recycled fabrics and yarns," she notes.

She also commends the efforts of Patagonia, an American outdoor clothing brand that began making recycled polyester from plastic soda bottles in 1993. Patagonia have recently launched a new fabric blend of recycled cotton and recycled polyester, and CEO Rick Ridgeway has hinted at a future in which a cotton t-shirt could actually take carbon out of the atmosphere.

"But for recycling innovations to be harnessed effectively, we need more cross-value chain collaboration. For instance when a chicken is slaughtered for human consumption, the feathers are plucked and discarded. Those feathers could be utilised creatively in the fashion industry," suggests Kääriäinen.

She believes that a fully circular, sustainable fashion industry is an achievable goal, not just a pipe dream: "We might not have a choice! When raw materials grow scarce enough, we will need all available land for food production. I believe the solution is reverting to small-scale local crops such as nettle, combined with recycling innovations and biotechnology – a combination of ancient tradition and 21st-century science," she predicts.

Professor Niinimäki agrees: "Today we consume four times more textiles than back in the 1970s. 50 years ago, we took better care of our garments. I believe the change can now go the other way. It's simply a question of reversing scale."

Niinimäki sees the challenges of the textile industry not only as a threat, but also as a powerful spur for innovation. "There is a huge untapped value creation opportunity. Of course the fashion of tomorrow will be more expensive, but we simply have to accept that we should be paying more for the clothes we own. Perhaps then we would also be motivated to look after them better."

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Global Means

It is the year 2049. Humanity has managed prevent a fateful 2-degree rise in temperature that would have unleashed a chain reaction of irreversible consequences. But to do so, we had to pull out all the stops.

IT IS THE YEAR 2049

First, we had to free ourselves from the tyranny of GDP and the absurd efforts pursued for a few tenths of a percentage point of growth, the proceeds of which generally went to the richest in society. Humans finally understood that rising growth rates are intimately linked with the degradation of our natural heritage and the quality of air and water. In short, the quest for growth risked the basic conditions for living an authentically human life. It was in 2020 that the United Nations Development Programme abandoned GDP per capita as the international standard measure for development and replaced it with carbon footprint and the social health index. Only then were we able to see the immense damage caused to our environment and social cohesion by the centuries-old obsession with growth. Businesses had to adopt new types of accounting that obliged them to consider the consequences of their actions on the environment and workers.

But that alone was not enough: in 2025, the International Labour Organization (ILO) made its labour standards mandatory. The European Union had already signed up to all the ILO's conventions several years previously. But the Paradise Papers scandal, which shocked the world at the end of 2017 and start of 2018, led to a remarkable intervention by Director-General Guy Ryder of the ILO. In a landmark speech, Ryder stressed that the practices revealed by months of investigations could no longer be tolerated and should henceforth be outlawed. The call woke people up. The ILO chief's proposal for binding international labour standards was enthusiastically welcomed by all countries, who saw it as the ideal way to respond to the global tax scandal. From this point on, the ILO ran teams of international inspectors to monitor and sanction illegal labour practices among multinationals and states. At the same time, another well-known international organisation, the International Monetary Fund (IMF), underwent

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something of a minor revolution. The managing director was dismissed and replaced by the Indian economist Prakash Loungani, hitherto head of the IMF's Research Department and co-author of the famous article 'Neoliberalism: Oversold?' He was mandated with implementing a new regulatory framework for the international monetary system, including the return to a form of capital controls. Lastly, a World Environment Organization was created and given sweeping powers, on the initiative of the first woman elected UN Secretary-General, including to enforce the greenhouse gas emissions quotas allocated to countries.

There was, of course, immense resistance, not only from industry but citizens too, fearful that a new global bureaucracy was being created. It took 10 or so years for France to lead the way by promoting a new type of company, one that was a radical departure from the tired and half-baked theories of Milton Friedman (who claimed that the sole purpose of a company is profit): a cooperative company, owned by its employees and customers, championing the theories of Pierre-Joseph Proudhon and reviving the ideal of workers' self-management. Of course, some non-cooperative businesses remained, but the system of economic bicameralism, sharing rights between workers and capital holders, which was introduced from 2020 onwards in Europe and advocated by Belgian philosopher Isabelle Ferreras, democratised every workplace. At the same time, France and Belgium passed laws capping salaries at 10 times the minimum wage, with similar legislation subsequently adopted across Europe. Europe's massive investment in building insulation, green initiatives, alternatives to pesticides and other toxic chemicals, and the development of organic farming created 6 million jobs.

THE QUEST FOR GROWTH RISKED THE BASIC CONDITIONS FOR LIVING AN AUTHENTICALLY HUMAN LIFE

In 2049, the world's population continues to grow, but the transfers between countries organised through the World Bank mean that every country can feed its citizens. ■

This essay was originally published in January 2018 in *Le Nouveau Magazine Littéraire*, pp. 48-49.

A FUTURE OF FAIR AND DEMOCRATIC EUROPEAN CENTRAL BANKING

ARTICLE BY
ROMARIC GODIN

The Eurozone as structured in 2019 may well not withstand its next serious challenge. From here to 2049, fundamental reforms to how the financial sector, public finances, and central banking work will all have to be made. Among the possible futures, ambitious monetary reform could put money creation at the service of society's most pressing social and environmental needs.

It is of course conceivable that the Eurozone continues with business as usual, with an incomplete structure made up of a persistently weak political arm and a monetary arm that does what it can within a narrow and counter-productive framework. But is it really credible for this structure to face up to the great challenges of the next 30 years: the fight against poverty, inequality, and climate change? A complete breakdown of the Eurozone would only trigger competition between states and undermine their capacity for coordinated action. Yet nor will allowing the Eurozone to remain as is, unsteady and incomplete, resolve existing competition between member countries, with its damaging effects on wages and government budgets. As the current situation shows, when challenged, so far the Eurozone has come up short.

Between an unsatisfactory present and the grim prospect of collapse, an alternative, a different future, must then be imagined. Any alternative demands a large-scale monetary reform and would necessarily involve treaty change. The objective of monetary reform should be to meet society's most pressing needs, as defined by democratic choices and any emergencies that may arise. These priorities should never go unmet because of a 'lack of money'. Whether it is a question of social spending or environmental investment, this rule which is based around society's needs should take precedence. The tricky bit

is clearly how to do this while maintaining financial stability, which is why monetary reform also entails reforming the banking sector and retaining an orthodox monetary policy for the private sector.

A FLAWED STATUS QUO

Today, money creation is left to the financial sector, within a general framework laid down by the European Central Bank (ECB). The ECB uses interest rates to set the price of money, thus influencing the total amount of loans granted by private banks. These loans are how money enters the economy. However, nothing is done to influence how money created by private banks is used. Instead, the ECB has just one ultimate aim: to limit inflation in the Eurozone. This goal is set out in its mandate and is why the central bank is only concerned with the overall quantity of money.

Under the logic of its design, the ECB could achieve its mandated objective successfully using measures with disastrous social and environmental consequences, for inflation is ultimately all that matters for it. Zooming out from that particular institution, the wider economic and financial structures of the Eurozone are in bad shape. Financialisation and increased debt levels in the European economy have driven chronic instability, competition between states, a regulatory race to the bottom, and a constant need to cut social transfers.

In this context, any prospect for reform of the Eurozone appears blocked. Keynesian options are determinedly opposed by the adherents of ordoliberalism and the interests of exporters from countries where these ideas prevail. These actors defend a fragile status quo that in turn is often imposed on their suppliers in the south and east of Europe. The effort to ensure competitiveness vis-à-vis the rest of the world creates high surpluses in exporting countries, which destabilise the currency union and the global economy. The result is chronically weak, low-quality growth, which generates inequality and lacks the means to address urgent ecological and social issues. In addition to these defects, the export-led strategy has been further weakened by the rise of China and increased protectionism.

The Eurozone will inevitably face another existential crisis in the medium term. When this crisis arrives, neoclassical economics-inspired solutions should be off the table. The economic consensus is likely to fracture in the 2020s; it is already happening. Teams within the International Monetary Fund (IMF) and the World Bank have criticised the dominant economic paradigm harshly, as shown in the work of Olivier Blanchard and Paul Romer. With this break coming, proposing radical changes to the Eurozone offers the European political class the opportunity to counter the Eurosceptics by responding to current economic, ecological, and social emergencies.

Between now and 2049, a genuine reform of the European monetary system, one way or another, will happen.

A SOCIAL AND ENVIRONMENTAL MANDATE

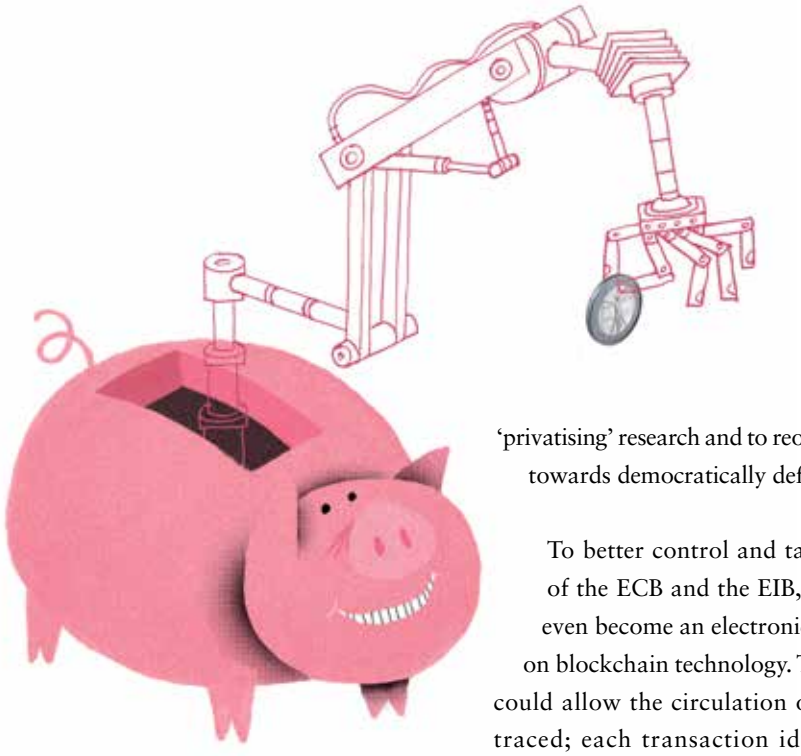
To correct the current system's flaws, monetary reform should be based on three pillars: defining priority objectives (for which money should never 'lack'); 'signposting' money creation towards these objectives; and financial regulation to ensure stability. These three pillars are complementary. The central bank's objectives should correspond to the interests of society and be determined democratically. For these objectives, the ECB should assume, as part of its 'contract', the responsibility for achieving them. For the rest of the economy, the ECB and financial regulators should ensure that the provision of loans to sectors outside of these priorities remains compatible with financial stability. If there is to be massive investment in priority domains, the ECB should also have the right to restrict access to credit elsewhere to ensure said stability. However, without it endangering society's key objectives, the private sector should retain its ability to adjust.

The overarching principles of this new policy should be constitutionalised in renewed European treaties, as is currently the case for monetary policy. Looking to the future, three equally important principles should be committed to these treaties: overcoming poverty by satisfying basic needs (food, health, housing, etc.); reducing inequality, including income inequality and geographical inequality; and the fight against global warming. These three principles should come before all others when defining European economic policy, and they should bind all the institutions involved in its implementation. The European Commission would propose multiannual objectives for taking action in accordance with these principles and based on current needs. They would be debated, deliberated on, and adopted in the European Parliament before the Commission and the ECB would sign a contract committing the bank to them.

FROM MARKET FAILURE TO PUBLIC INVESTMENT

With the democratic groundwork in place, the ECB's task would be to provide the means to fulfil the policy objectives. It could do so in various ways.

The first would be direct financing. In cases where the private sector cannot be depended upon to achieve a given objective, the public authorities step in. To be precise, there should be two aspects to direct central bank intervention. For pan-European projects, the ECB provides financing to the European Investment Bank (EIB), which operates under a new remit, expanded compared to that



of 2019. The EIB then makes investments, monitored by the Parliament and the ECB, in European public enterprises or research centres active on the ground.

The private sector only invests where it can expect a return and in its own interest, so today, in 2019, the ecological transition chronically lacks investment. Investment in the future is largely left to digital giants from the United States and their Chinese competitors. However, these investments are not made in the public interest. A new monetary system should correct this bias: rather than developing artificial intelligence to sell more products, its potential should be harnessed for waste management or the heating and cooling of buildings, for example. Thanks to the work of Mariana Mazzucato, it has been demonstrated that private sector innovation is almost always based on the fruits of public research.[1] It is vital to stop 'privatising' research and to reorient its findings towards democratically defined needs.

To better control and target the action of the ECB and the EIB, the euro could even become an electronic currency built on blockchain technology. This technology could allow the circulation of money to be traced; each transaction identifiable in a data chain confirmed by economic agents. Seeing where money actually goes, and the technological possibility of modifying that path, could help guarantee that money created actually goes towards the objectives and projects it was democratically decided to fund. Tax avoidance and tax evasion strategies would be far easier to follow and prevent. Nonetheless, electronic euros should not mean the complete replacement of paper money, which is vital for the symbolic acceptance of money's value. However, use of cash should be limited to low-value transactions.

GETTING THROUGH TO THE REAL ECONOMY

For projects with a national or regional focus, the EIB would act through intermediary 'special purpose' national public banks, which could support environmental projects, housing provision or social programmes, for example.

1 Mariana Mazzucato (2013). *The Entrepreneurial State: Debunking Public vs. Private Sector Myths*. Anthem Press: London.

These banks oversee the parts of national budgets that address the EU's objectives. For structural investment, such as developing new clean industries or research centres, the funding is long term and interest free, or with an interest rate that reflects the project's profitability. Partnerships with the private sector are explored, agreed upon, and monitored on a case-by-case basis.

THE EUROZONE WILL INEVITABLY FACE ANOTHER EXISTENTIAL CRISIS IN THE MEDIUM TERM. WHEN THIS CRISIS ARRIVES, NEOCLASSICAL ECONOMICS-INSPIRED SOLUTIONS SHOULD BE OFF THE TABLE

To best serve local economic prosperity, the euro could sometimes exist alongside local electronic currencies, which would make it possible to target priority regions. The ECB could decide to issue funds in a local currency for a specific region at a fixed rate of one euro per unit. This currency would only be convertible to euros for the purchase of goods and services unavailable in the area it circulates. Thus, where possible money stays within the targeted region, stimulating local production.

For social expenditure such as employment schemes or anti-poverty initiatives supported as part of meeting European objectives, national governments would be able to seek financing from financial markets through loans guaranteed by the ECB. When necessary, the central bank buys back these securities as per the current method of quantitative easing.[2] Following the rule that a lack of money should not prevent the realisation of democratically determined objectives, a state unable to finance its social expenditure is advanced funds by the ECB. For all other expenses, states issue unsecured loans that can be restructured. No further deficit objectives are set: investors now estimate and fully assume the risks involved in the securities they buy.

It is worth noting that as direct aid from the EIB to firms outside the priority sectors would no longer be permitted, its budget would be relieved from the burden of supporting businesses. The EIB thus gains significant room for manoeuvre and reduces its need for external financing. A structure of this type would certainly require a transition period and some form of a public debt relief window before its implementation. For example, this might involve cancellation of a debt bought by the ECB in the course of its quantitative easing programme or as part of ESM or EFSF

2 Quantitative easing is an unconventional but, since the 2008 financial crisis, common monetary policy whereby the central bank buys private or public debt directly on financial markets to lower the cost of money and thus, in theory, revive inflation.

loans.[3] This type of debt jubilee has historical precedents. It is the classic model of the IMF and also that assumed by the Allies in 1953 to allow economic recovery in Germany.

A NEW MONETARY POLICY

The ECB would have different rates, or targeted financing policies. Thus it offers preferential rates to retail banks that then provide a specified proportion of their loans to priority sectors. These preferential rate are tailored to support development in specific regions or sectors. For example, a very low rate can be offered for loans for retrofitting buildings, and a further premium rate agreed to target a region lagging behind on this objective. This approach is inspired by Keynesian theory that holds that the ECB should generate supply and demand for money.

This system still allows private money creation, but strongly gears it towards the realisation of set objectives. In effect, this system improves upon and refines the ECB's Targeted Longer-Term Refinancing Operations, a programme for small and medium-sized enterprises launched in 2014.[4]

The ECB would also directly buy back loans issued on the market by firms to finance projects fulfilling objectives defined by the Parliament. These securities are then certified and monitored by the ECB to ensure that they are in line with set objectives. As this debt has an implicit ECB guarantee and can therefore be bought back by the markets, it is more secure and cheaper. Indeed, the ECB is now prohibited from buying back unsecured debt, as was the case in the Eurozone from 2015 to 2018. In this way, firms that so wish can finance projects in the public interest at a lower cost. Quantitative easing thus gains an environmental and social focus.

RE-INTRODUCING RISK

As we have seen, the money created by the ECB and commercial banks would now be directed towards priority sectors. However, it is vital that growth in these sectors does not drive excessive inflation, and that financial sector instability does not trigger a complete destabilisation of the economy, which would make meeting objectives impossible.

To achieve this result, the ECB would still use its traditional lever: 'refinancing rates' or the rates at which private banks borrow from the central bank. These standard, non-preferential rates are offered for financing non-priority sectors. Through these rates, the central bank

3 The European Stability Mechanism is a Eurozone bailout fund established in 2012. It incorporates the operations of the European Financial Stability Facility, a special-purpose bailout fund created in 2010 to support Ireland and Portugal, and later Greece.

4 TLTRO offers banks long-term loans with very advantageous conditions. To benefit from this programme, banks have to show that they are providing small businesses with a minimum quantity of loans set by the central bank.

maintains financial stability in the broad sense, though subject to the higher objectives defined above. Whereas today's ECB statutes establish a rigid inflation objective, allowing the ECB to evaluate the optimal level of inflation for the economy would be more appropriate.[5]

Beyond central banking, defining an overarching macroprudential and regulatory policy is crucial. The starting point for this reform is a genuine and complete separation of investment and retail banking.

Investment banks would have access to the stock and bond markets, and offer savings products linked to these markets. They pay a single financial tax across the entire Union, which goes to state budgets. Those taking risks would cover any losses. There are no state bailouts for investment banks, nor would securities be bought back by the ECB, apart from the targeted lending defined above. These activities are strictly regulated to reduce the leverage effect and thus investment banks' capacity to create money autonomously.[6]

Retail banking would receive deposits from savers, and use them to make loans to the economy. Their capacity to create money is checked in various ways: standard monetary policy and solvency ratios are now calculated using a unified model defined by the ECB. Bailing out this type of bank is still justifiable – retail banking finances the economy – but the possibility of penalising directors and requiring creditors and shareholders to shoulder costs ('bail-in') is open too.

These measures could be implemented without major changes to treaties, as was the case for the banking union.[7] During the next financial crisis, the inevitable failure of this incomplete banking union, the financial bubble, and the current fragility of major European banks could be the perfect storm that opens the path to the construction of this new financial architecture.

INDEPENDENT BUT ACCOUNTABLE

The ECB would remain independent, but its task would change. Its mission is no longer just financial stability, but above all to enable observance of the objectives democratically determined in the framework of European treaties. The Parliament, through the preparatory work of the Commission, sets precise objectives to be respected during the term of legislature (growth in certain sectors, targets for financial poverty, health outcomes,

5 This is what is happening in 2019. For a long time, the ECB was happy with very weak inflation even at the cost of growth, whereas today it seems prepared to accept slightly higher inflation.

6 The leverage effect means the ability to generate increased profits through taking on debt. If a company takes on a debt of 100 hoping to earn 150, it is using a leverage effect of 50 per cent.

7 Banking union refers to the integration of banking regulations and procedures for insolvency within the EU. In 2019, banking union remains an incomplete process.

and regional development). If these objectives are missed, the ECB has to correct its policies. In case of repeated and constant failure, a procedure to remove the ECB's governing board can be activated. This procedure is sufficiently restricted to make it an exceptional occurrence and it is only applicable in cases where the objectives have not been met. Independence without responsibility poses a threat to the fulfilment of objectives.

Nevertheless, the ECB remains free to act as it sees fit within this framework. The ECB sets interest rates, be they preferential or not, and the appropriate level of 'socially useful' debt purchases. It can refuse advances to the EIB if it believes that the investment bank does not need these funds, but this refusal always needs to be justified. In all areas of its activity, the ECB needs to get results.

TRANSITION TO 2049

How could this type of reform be achieved by 2049? Business as usual is untenable and inevitably new treaties will be necessary. The reform described requires that EU rules be changed in three respects: to define the key principles of European economic policy; to set the new role for the ECB; and to profoundly reform how states raise and manage their finances. Since the debt crisis, the idea of treaty change has enjoyed broad acceptance on the Left and among many environmentalists. Some in the centre, particularly those concerned with ecological questions, could be tempted to join the movement. While the proposed structure maintains a significant private sector and removes many moral hazards created through implicit subsidies, it does represent a break from purely neoliberal approaches. A programme of this type might just be enough to persuade those who have given up on Europe, believing it to be ineffective or overly centred on elites. Politically, to make sure that states are well represented, the Council could be replaced by a second chamber of the Parliament modelled on the German Bundesrat, which would vote by 'country'.

The 2030s could be the decade when these new institutions are put in place. They would permit common challenges to be confronted progressively and based on a pan-European vision, which would be in turn reinforced by the positive effects of a much-needed change in direction.

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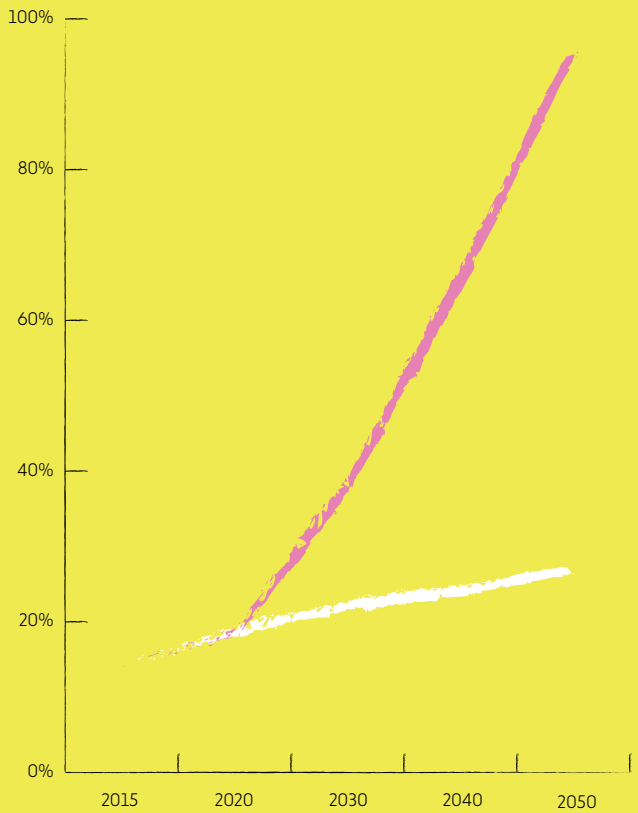
Earth, Wind and Solar Energy

Renewable energy is the energy of the future – plentiful and ubiquitous. Technological advances and economies of scale are bringing down prices, whereas fossil and nuclear are increasingly uncompetitive. Here, the *Green European Journal* presents in numbers how energy systems will evolve over the decades to come, while Daniel Scholten traces the new geopolitical faultlines set to supersede those of the fossil age.

THE SHIFTING GEOPOLITICS OF RENEWABLE ENERGY

By 2049, Europe will be roughly halfway through its energy transition. Renewable energy will no longer merely polish the rough edges of global competition for oil and gas, it will shape the new energy game. While the transformation is generally set to be positive, energy geopolitics are here to stay.

On the upside, renewable energy will cure many of the ills related to fossil fuels. Renewables diversify the energy mix, strengthen security of supply for today's importers, lower energy prices, reduce CO_2 emissions and air pollution, decentralise and democratise energy generation, and create new industrial possibilities. Most importantly, renewables take the sting out of the energy trade. As countries source more of their needs domestically due to renewables' abundant nature, they will turn into 'prosumer' countries. Trade will occur increasingly because countries want it to (when imports are cheaper), not because they depend on it.



Vision for renewable energy consumption
Projections based on recent EU policies show that as little as 24% of energy consumed could come from renewables by 2050. A scenario built around the Paris Agreement 2 °C target would mean hitting 97%.

Source: Oko-Onstitut eV. (2018) *The Vision Scenario for the European Union 2017 Update for the EU-28*

On the downside, distribution will become more complex. As most renewables are turned directly into electricity, long-distance losses and stringent managerial conditions challenge reliable service provision. The transport of fossil fuels across the globe in a straight line from production to consumption will be replaced by a combination of local microgrids, national networks, and continental supergrids, involving bidirectional flows and new actors besides power companies and utilities. Adding fuel to the fire is renewables' variability, which requires storage, flexible markets, and short-term operations rather than long-term security of supply. Countries will swap pipeline politics for 'grid politics', a battle for control over key infrastructure such as interconnectors, hubs, and storage facilities to ensure availability of cheap energy at the right time.

For Europe, the transition is good news. It will overcome energy dependencies on foreign suppliers in the Gulf region and Russia and the EU's institutional and legal framework will help manage European grid politics. Success is, however, not guaranteed. Energy is still very much a matter of national sovereignty, which is why EU member states are shifting to renewables at varying speeds. Such divergences among member states' energy priorities could well sour future grid politics and the EU will be needed to handle conflicts. How far Europe can position itself as an exporter of renewable technologies and services, seizing industrial opportunities in the face of Asian and US competition, remains to be seen. If it fails to do so, it will simply become a clean tech importer. If it succeeds, it will nevertheless have to compete over the rare minerals and metals that constrain leadership in certain generation technologies. ■

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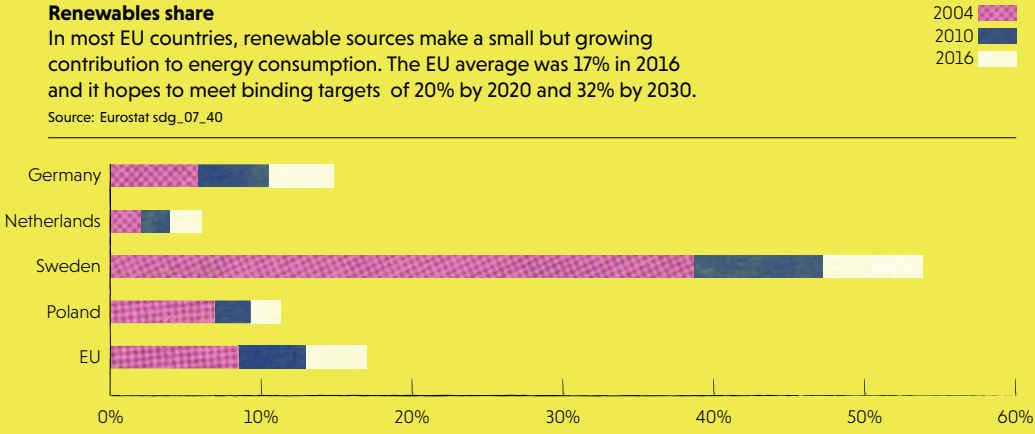
Renewables share

In most EU countries, renewable sources make a small but growing contribution to energy consumption. The EU average was 17% in 2016 and it hopes to meet binding targets of 20% by 2020 and 32% by 2030.

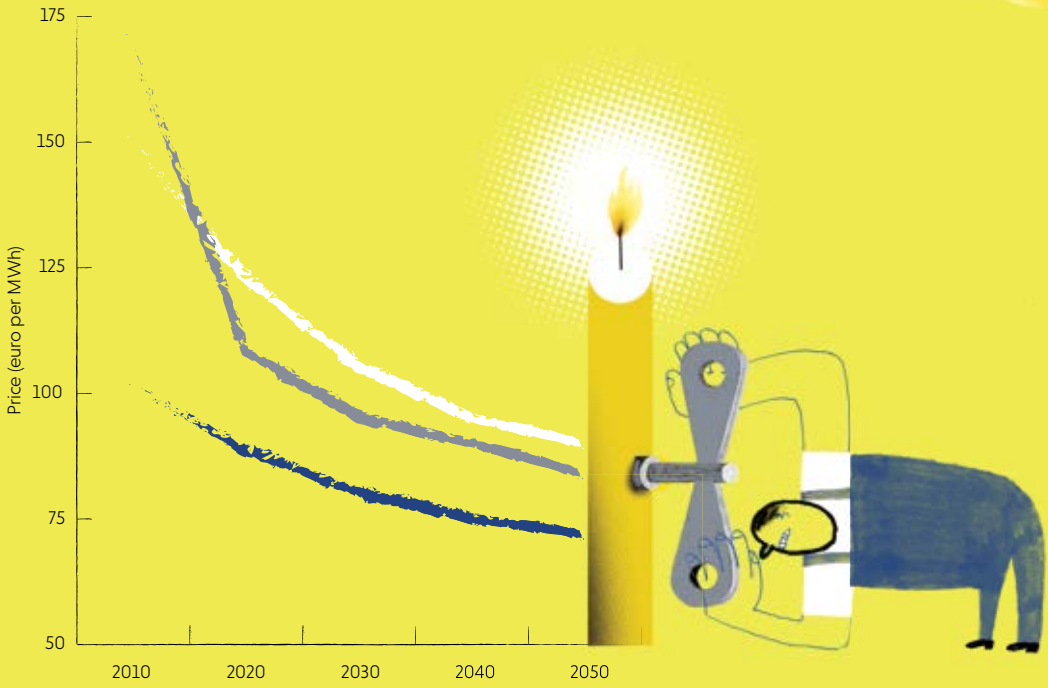
Source: Eurostat sdg_07_40



Renewables pricing

As more renewable technologies are deployed, the price of the energy produced continues to drop. By 2050, the costs of solar and onshore wind will have almost halved.

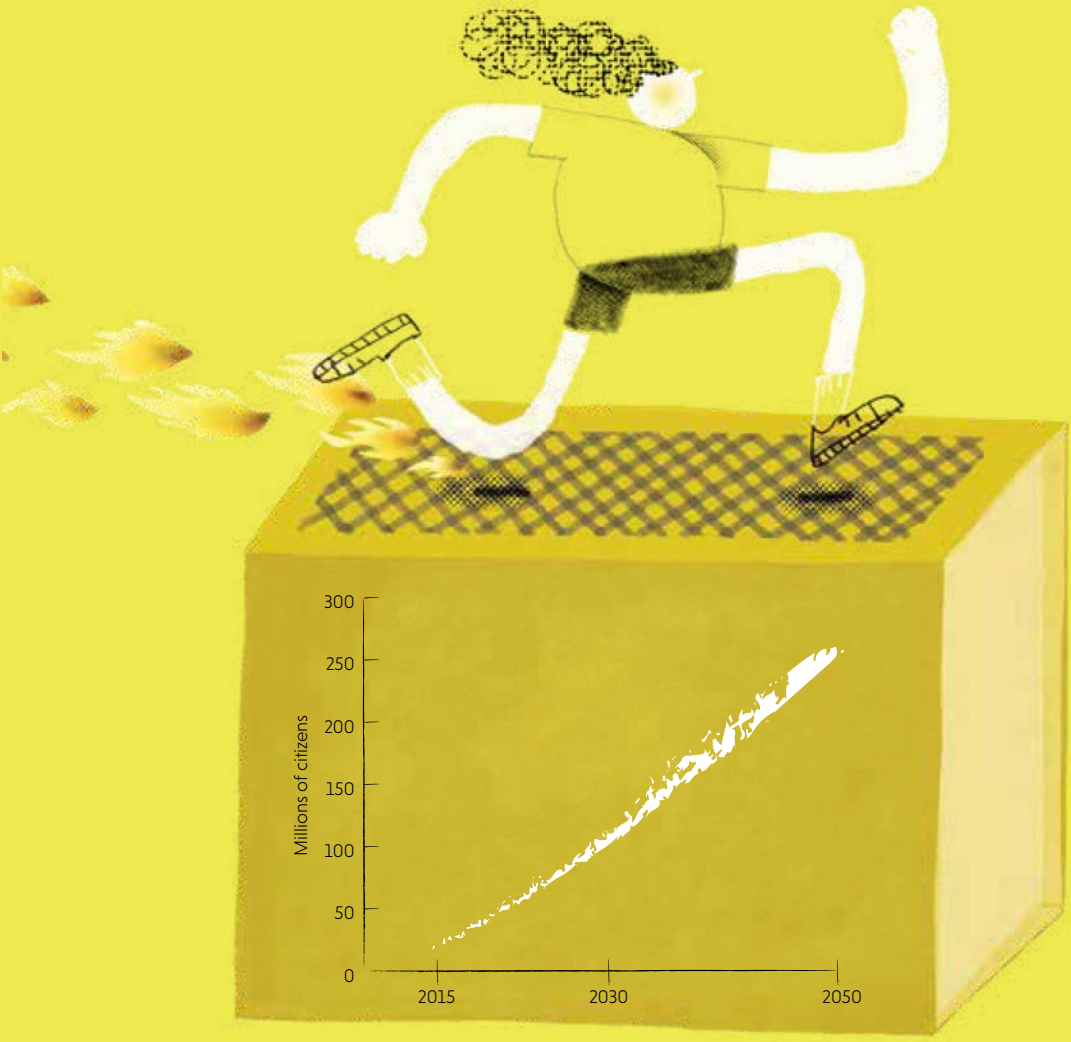
Source: Manjola Banja and Martin Jégard (2017). *Renewable technologies in the EU electricity sector: trends and projections: Analysis in the framework of the EU 2030 climate and energy strategy*. JRC Science for Policy Report.



Citizens' energy

From community-owned wind farms to solar panels on your roof, renewable technologies have the potential to distribute production away from the big players. With permissive policies in place, the number of 'energy citizens' in the EU could leap from 12 million in 2015 to 264 million by 2050.

Source: CE Delft (2016). *The potential of energy citizens in the European Union*



EUROPE'S MOBILITY IS ABOUT TO BE REWRITTEN

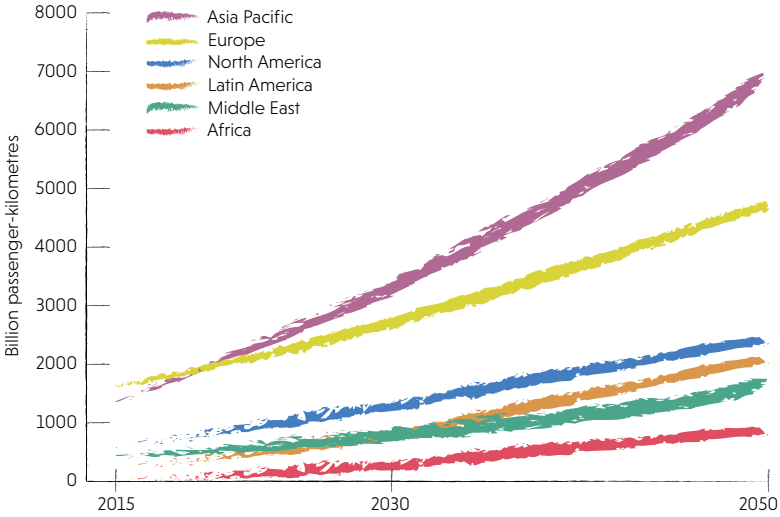
ARTICLE BY
YOANN LE PETIT
& **JENS MÜLLER**

In Europe as across the world, transport systems are changing with huge implications for our daily lives and urban spaces. While new technologies help drive this shift, transport's future remains open and multiple. From here to 2049, current possibilities, argue transport experts Yoann Le Petit and Jens Müller, offer the opportunity to rethink not only how we move, but why.

Predicting the future is a difficult exercise. When the first railway lines were built on the European continent in the 1830s, many believed that passengers would be unable to breathe if trains were to run faster than the speed of a horse. German Emperor Wilhelm II famously said in the early 20th century that cars were a temporary phenomenon, but horses would be there to stay. Today, these predictions make us smile.

Nevertheless, most of today's transport policies are based on similar thinking. National and European transport strategies take for granted the assumption that people will continue to drive and fly forever, and that the number of containers transported can only increase. They conclude that the best we can do is adapt to this future by improving technologies and infrastructure.

It is time to leave behind this narrow viewpoint and take the future for what it really is: the result of our choices of today and tomorrow, something to be written and not predicted. Both the challenges and possibilities of our era should stimulate our imagination and help us develop an appealing vision for how we will move in 2049.



International air transport demand (baseline scenario)
Billion passenger-kilometres by region of origin (a passenger-kilometre is the unit of measurement for the transport of one passenger by a defined mode of transport over one kilometre).

Source: ITF Transport Outlook 2017 - © OECD 2017

A FRESH LOOK AT MOBILITY

Now is an opportune moment to step back and rethink our mobility because, for the first time in decades, we can rewrite fundamental principles and policies. The decisions that we are about to make on shared mobility, autonomous delivery systems or electric cars, bikes, and pedal scooters will have a profound effect on our century.

New technologies are the most visible facet of the ongoing transformation. Drones can now deliver medicine to remote islands or victims of natural disasters. Truly self-driving trains, trucks or cars suddenly appear within reach. And Hyperloop projects, such as the one recently unveiled in Spain, are being tested to shoot people through tubes at more than 1000 kilometres per hour. This would cut travel time between Madrid and Barcelona to just 25 minutes and may eventually bring European capitals closer to one another.

Some of these developments seem like science fiction becoming true. But even more fascinating than the technological changes are the more fundamental, truly 'futuristic' questions that they force us to address. At the end of the day, transport flows are rarely about the physical movement

itself but about deeper needs and desires in our lives – about seeing our loved ones, going to work, purchasing a product or travelling to foreign countries. Those needs and desires may be affected in ways we can hardly imagine now.

Just think about a few of the questions that we may be confronted with: will people still want to move as much once this is no longer necessary? Why travel, if hologram meetings become so good they are indistinguishable from a meeting in person? Will we want to transport goods around the globe if a 3D printer in our neighbourhood can produce them within minutes?

DIFFERENT BUT BETTER

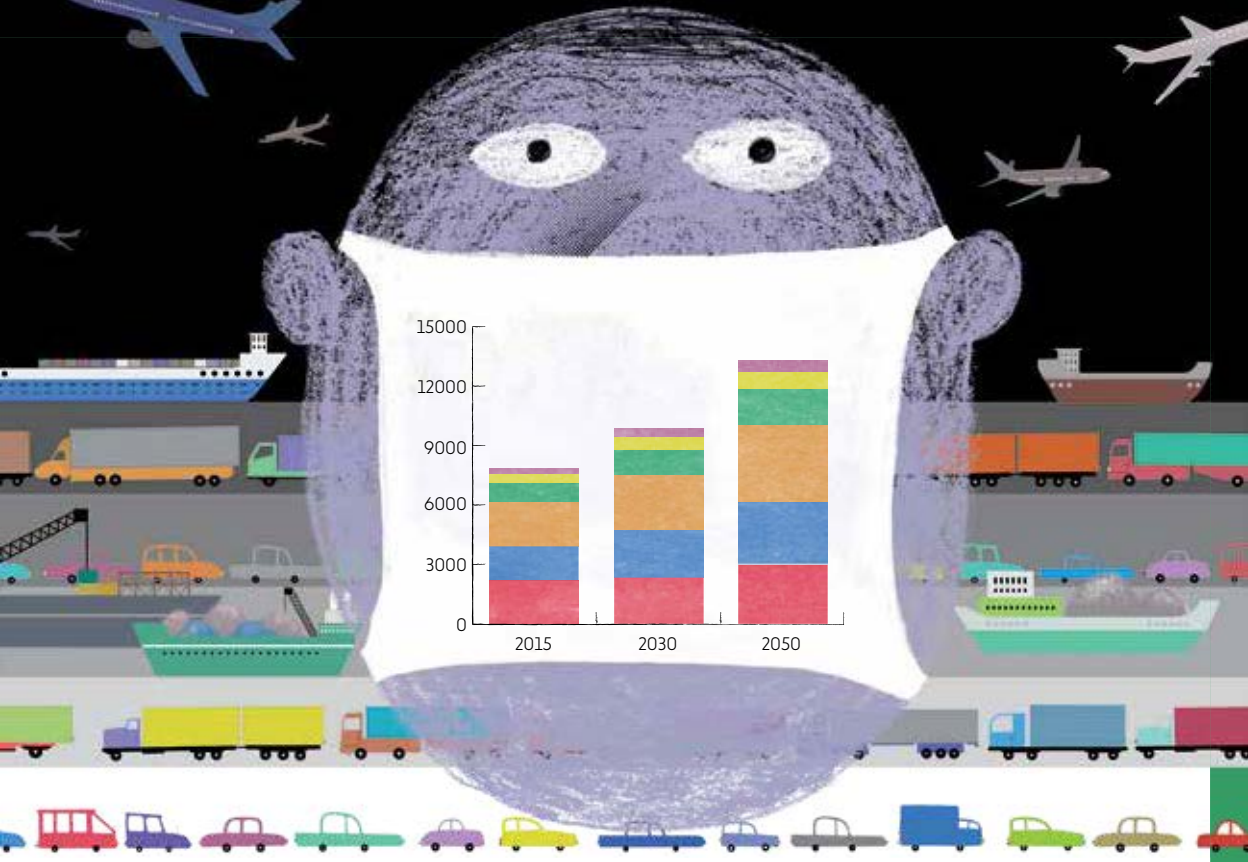
Our mobility could see a radical change, and change often scares us. But when looking at transport today, the prospect of something different becomes rather appealing. Just look at the faces of today's commuters: for many, the daily drive to work has become a time-consuming and stressful obligation that depends on costly subsidies for company cars. On average, Europeans spend between 17 (in Finland) and 45 hours per year (in the UK) in traffic jams. This not only dictates the rhythm of their lives, but also puts a serious strain on everyone's health. In most European cities, road transport is one of the main sources of air pollution which still causes almost 400 000 premature deaths every year in the EU. Not to mention that transport is now Europe's biggest climate problem, as the sector has achieved no reduction in greenhouse-gas emissions over the past decades.

More of the same is just not an option. But what should come instead, and why is it desirable? An important part of the answer is new technologies like those mentioned above. However, a closer look at some of current crazes also exemplifies the ambiguity of technological breakthroughs. Take vehicle automation and car sharing, for example. Both probably have the potential to revolutionise our transport systems. The OECD's International Transport Forum modelled the impact of autonomous, shared vehicles that users could hail in the Portuguese capital of Lisbon. They found that, under certain circumstances, the number of cars could be reduced by far more than half compared to today – surely a desirable future.[1]

A CHOICE BETWEEN HEAVEN AND HELL?

At the same time, this study, as well as similar research, holds another lesson: new technologies by no means guarantee positive results. Depending on the rules we define, the combination of new technologies may take us either to some sort of 'transport heaven' or 'transport hell'.

1 International Transport Forum (2015). *Urban Mobility System Upgrade*. Available at <bit.ly/2WIwAJi>.



Global CO_2 emissions per sector (in million tonnes)

Source: ITF Transport Outlook 2017 - © OECD 2017

In a desirable scenario, self-driving cars run on renewable electricity and are available on demand as part of shared fleets that you can subscribe to book rides. Prices are lower if you share journeys with others. As these vehicles are shared and pooled, vehicle use becomes much more efficient. There are hence much fewer vehicles on the road, meaning less road space is needed, and sidewalks and bike lanes can grow. The need for parking spaces diminishes, freeing up (expensive) city space for housing, terraces, playgrounds, and greenery. Congestion and road transport pollution could be mostly eliminated.

On the other hand, the problems of cities today may also be amplified. In this undesirable scenario, self-driving cars remain privately owned and still run on internal combustion engines. Because of the convenience of autonomous cars, vehicle kilometres increase (there

is no need to find a parking spot if a car can drive around empty, always available), as do congestion, noise levels, and emissions. There is less space available for other modes of transport, or for people to sit on a terrace, play outside with their kids or do sports.

MOBILITY, NOT TRANSPORT

The ambiguous potential of technologies illustrates the need to make choices and define rules. If steered wisely, technology and innovation can help us advance down the road to truly better transport. But this requires clear rules and a priority for sharing, along with a deep integration of traditional public transport and new mobility services for people and goods such as the sharing of cars, rides, delivery capacity, and (cargo) bikes.

These decisions will not be easy. The months-long protests of the *gilet jaunes*, which sparked in France late 2018, or the failure to tackle the toxic legacy of the Dieselgate scandal on our roads show the social and industrial policy challenges that we will have to face.[2] For decades, European governments have encouraged and subsidised unsustainable mobility patterns and industries, making it now very difficult to gradually turn towards future-proof choices. Entire industries which are amongst the largest and most influential in Europe will have to change. The car of the future may not look entirely different from the outside, but will have to be powered, managed, and used differently.

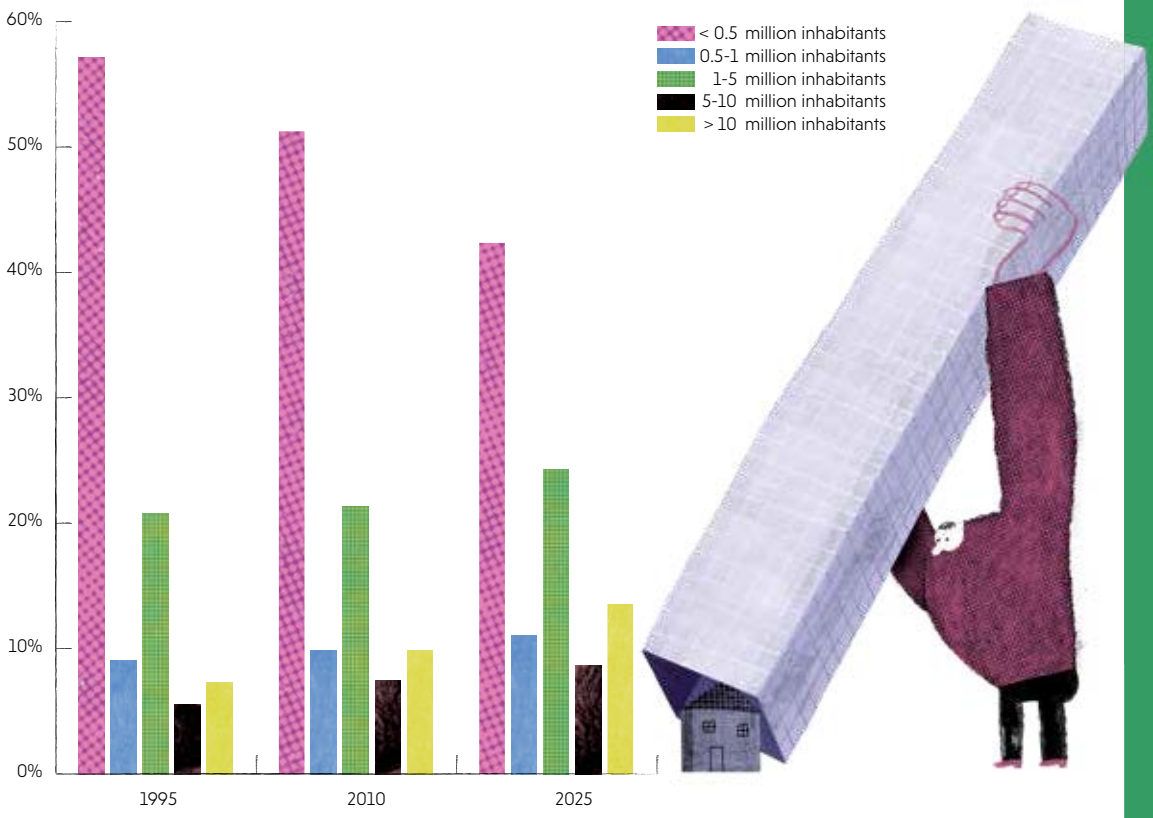
Even if the emerging technological changes are particularly profound, the key challenge will be the transition to a new mindset. So far, our thinking and policies are mainly geared towards an increase of transport flows and care too little about an increase in mobility. The mobility of the future – and in many cases even of the present – is much less about moving heavy vehicles or a container from Madrid to Helsinki and much more about considering whether every movement is really needed.

Our smartphone or laptop already saves us a lot of going back and forth when we can work or study from home instead of spending two hours commuting by car or train. And what if 3D printers can replace a lot of today's logistics, or if your local supermarket turns into a service centre for delivery, repair, and specialist advice within walking distance? Then transport could be replaced by mobility – the possibility to satisfy our needs and desires without necessarily changing our location.

2 The Dieselgate scandal began in 2015 when the US Environmental Protection Agency accused German automaker VW of violating the Clean Air Act by fraudulently manipulating emissions test results.

Percentage of population living in cities by city size in 1995, 2010 & 2025 (estimated)

Source: Brian Roberts (2014). *Managing Systems of Secondary Cities.* Brussels: Cities Alliance/UNOPS. p. 42.



CITIES AS LABORATORIES

In almost every European city, people are already experimenting with these changes. Our cities have in many regards always been the creative laboratories and forerunners of the emerging mobility revolutions. So much sometimes that they do not even notice any more how revolutionary they are. Many Dutch citizens, for instance, believe that the Netherlands have always been a paradise for cyclists and active mobility, with safe public spaces and a high quality of life, and where not only the prime minister but also young children cycle every day.

In reality, the country was just as car-centred as most industrialised countries until the 1970s. Then, a true revolution started: people no longer accepted that more and more children would die on the roads and took to the streets. The ensuing social movement radically transformed the way people move and the way the cities, streets, and squares are designed. What started with a few bike lanes became a whole network across cities, providing a lot of space for humans rather than cars.

Today, Dutch cities can feel like a window to the future of cities in general. And cities in many other countries have long since started their own experiments, from Copenhagen's cycling paradise to France's revival of city centres built around new tramways and pedestrian zones.

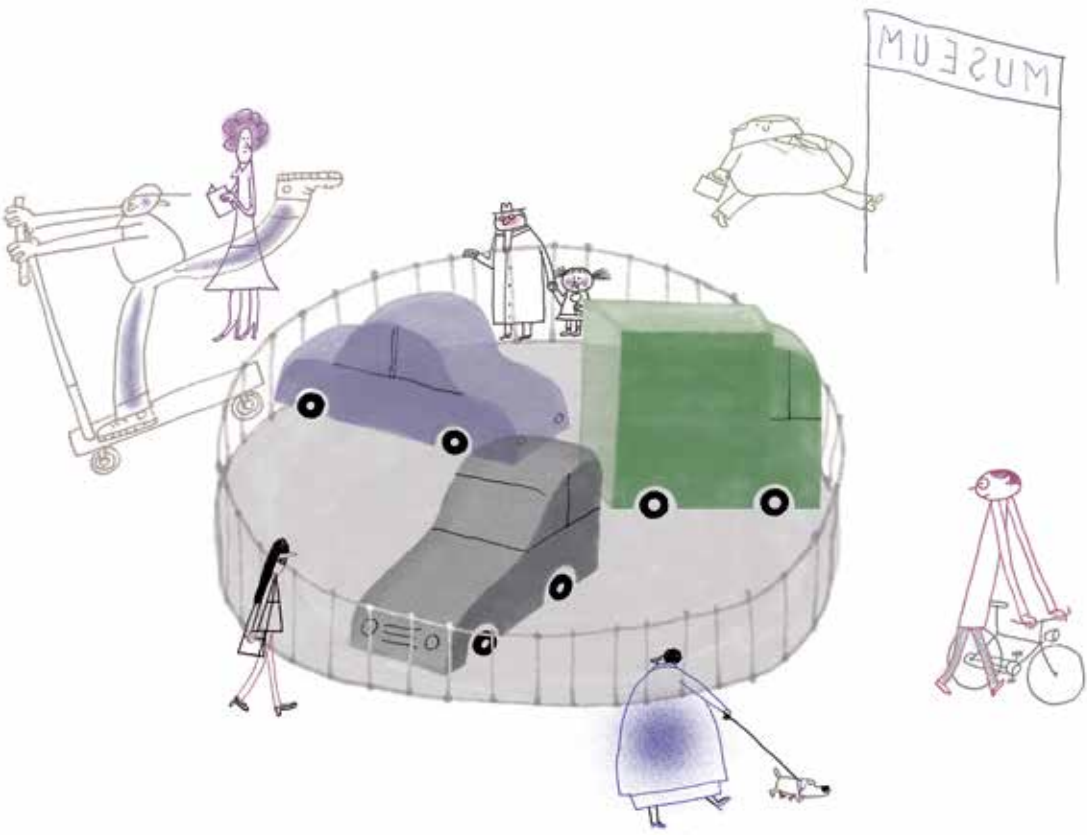
LESS, DIFFERENT, HAPPIER?

All these models embrace new technologies, from shared e-bike systems in Copenhagen to the trolley-wire-free tram lines in the centre of Bordeaux – but they do not stop there. We should adopt a similar approach for the European mobility strategy, which is still to be written to a large extent. The rules for electrification, autonomous vehicles, and sharing services cannot be defined for only one city or region. We must enshrine principles, interfaces, and rules in laws that apply from Stockholm to Bratislava, starting not with technologies but with the desired outcome.

A person booking a trip from Sofia to Rome in 2049 should be able to use one service across all national borders and transport modes, with strong incentives to share vehicles on the way and opt for a route with a minimum environmental footprint. And why not remind them of alternatives to going to Rome in person, like a 3D virtual meeting?

When ordering goods in 2049, an algorithm should be able to compare different options, ranging from alternative products and local 3D printing that recycles material, to zero-emission delivery from other parts of the world.

Most probably, the future will not look exactly like this. Just as trains are now running at more than 350 kilometres per hour and cars are still around – despite Wilhelm II's prediction – today's ideas about the future will doubtless fail to foresee some very important elements. Our thoughts will make future generations smile. But only if we dare to dream and create is there any chance we will at least move in the direction we hope for. It is time to rewrite Europe's mobility.



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The views expressed are the authors' own and do not necessarily reflect those of the organisations to which they are affiliated.

Fast Forward

An die Nachgeborenen (2049)

In order to grasp the future, sometimes it is necessary to speak from the future itself. Not from a future as something given or destined, but from a future understood as a possibility, a potentiality, which could or could not happen, depending on what we do in the present.

Back in the late 2010s, only 30 years ago, when walls and borders were already becoming the prevailing backdrop to Europe's decline, a report published by the World Bank projected that 55 per cent of the developing world's population was at risk from climate change.[1] Over 140 million people were forecasted to migrate by 2050.

The World Bank estimated that climate change would lead to crop failures, freshwater scarcity, and sea-level rises. Millions from three of the world's major regions – Sub-Saharan Africa (from Sudan and West Africa to the Cape of Good Hope), Central and South America (from Mexico to the Strait of Magellan), and South Asia (Afghanistan, Pakistan, India, Nepal, Bhutan, and Bangladesh) – were to be forced into 'in and out' migration.

According to the report, the year 2050 was a tipping point beyond which climate change migration would accelerate in the absence of significant cuts to greenhouse gas emissions and green investment. "Without the right planning and support, people migrating from rural areas into cities could be facing new and even more dangerous risks," said the report's lead author, Kanta Kumari Rigaud. "We could see increased tensions and conflict as a result of pressure on scarce resources. But that doesn't have to be the future. While internal climate migration is becoming a reality, it won't be a crisis if we plan for it now."

Back in the past, scientists were warning not only of unprecedented migration due to climate change, but also of mass extinction. As early as 2006, when the world was already facing major geopolitical re-alignment, natural disasters, heatwaves, ice melting, militarisation, migration crises, and rising populist and authoritarian regimes, a new study by an international team of ecologists and economists

1 Kanta Kumari Rigaud et al. (2018). *Groundswell: Preparing for Internal Climate Migration*. Washington, DC: World Bank. Available at <http://bit.ly/2MNwYRe>.

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is a philosopher and author. His recent works include *Poetry from the Future* (Penguin, 2019) and *Subversion!* (Zero Books, 2017). He is one of the co-founders of the Democracy in Europe Movement 2025 (DiEM25).

predicted the new date of the Apocalypse: 2048.[2] The date when the world's oceans would be empty of fish. The cause: the disappearance of species due to overfishing, pollution, habitat loss, and climate change.

And here we are, it is 2049. While the sea-level rises devastated and emptied vast territories of the world, forcing hundreds of millions to flee to Europe, we who are the *Nachgeborenen* (the 'born-after', German poet and playwright Bertolt Brecht's beautiful term from his *Svendborger Gedichte* collection, written in his Danish exile in 1939, about those who will follow after the disaster of the Second World War) sit and have dinner, although there are no fish at the table any more. The food we eat is already polluted by microplastics, found everywhere from the high Swiss mountains to the Antarctic. As a result of tremendous climate change, with devastating consequences not only for humans but the whole ecosystem, the response of governments – which in 2019 were convincing their populations that the only solution to the world's crisis was to build walls from Mexico to Hungary, from Brazil to Morocco – was a desperate and inhuman response from the past.

Instead of opening itself to planetary thinking, instead of seizing the future by using the latest technological advances and the historical opportunity of humanity to transform itself into a truly global community, the political and business elites of 2019 were leading the world straight towards its worst dystopian predictions. We were not sleepwalking into this abyss, we were walking into it with all the facts in front of us. Mass extinction. Rising sea levels. Migration. Wars and planetary devastation.

While most of Europe was on the brink of occupation and stuck in a totalitarian nightmare, Brecht asked in *Die Nachgeborenen* back in 1939 whether, in such circumstances, we can have "conversations about trees", and how we can eat and drink when others starve and those who are thirsty do not have our glass of water? And yet we eat and drink. "He who laughs," writes Brecht, "has not yet received the terrible news."

In 2019, we were drinking and eating, while having a conversation about trees was once again becoming a crime because so many were being cut down and so many desperate refugees were hiding in the woods. We the *Nachgeborenen*, the ones born after the atrocities of the First and Second World Wars, were, again, eating and drinking while historical and planetary events were leading humanity – and this time, the planet itself – into an abyss, a point of no return.

To escape the current of "the slow cancellation of the future",[3] we need what the French engineer and philosopher Jean-Pierre Dupuy, best known for his work on catastrophism, calls "enlightened doomsaying".[4] Dupuy argues that what might seem impossible – a global-scale ecological catastrophe, for instance, or an Armageddon-inducing nuclear war – is nonetheless, based on our present knowledge, inevitable. Assuming that one of these catastrophes is our destiny (the dystopian Year 2049), there is something we can do. We can retroactively change the conditions of possibility out of which this destiny will come. ■

2 Daniel DeNoon (3 November 2006). Salt-Water Fish Extinction Seen By 2048. *CBS News*. Available at <http://cbsn.ws/2FMZT4D>
3 Franco Berardi (2011). *After the Future*. Chicago: AK Press.
4 Jean-Pierre Dupuy (2004). *Pour un catastrophisme éclairé: quand l'impossible est certain*. Paris: Seuil.

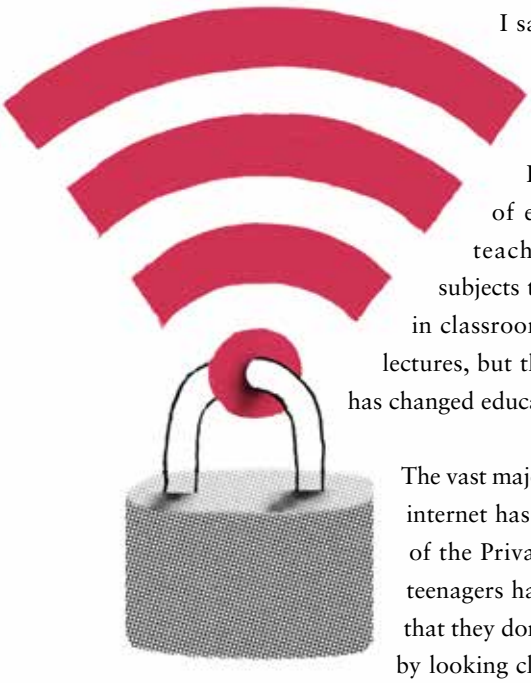
TO 2049 AND BEYOND

A FUTURE HISTORY OF THE INTERNET

ARTICLE BY
JENNIFER BAKER

Just as the advent of the internet has reshaped the world over the last 30 years, its evolution over the next will also define the society of the future. Digital geek Jennifer Baker tells the story of a Europe in 2049 that has harnessed and democratised the best of the internet, but that to get there had to experience the worst.

"2019 was the year people switched off Facebook." That's how I'm going to begin my lecture on the history of the Privacy Wars and the New Internet to my year threes.



I say my year threes, but in fact I've only met a dozen of the many thousands of 14-year-olds I teach every year. First rolled out four years ago, the European Remote Teaching Programme has been a huge success. Hundreds of experts and highly qualified professionals teaching students over the internet about the subjects that really matter. Trained facilitators are still in classrooms to help the kids get the best out of these lectures, but the general consensus is that remote teaching has changed education for the better.

The vast majority of my students take it for granted that the internet has always been a force for good, so the history of the Privacy Wars may come as a shock to them. But teenagers have not changed so much in the last 20 years that they don't understand the need for privacy. We'll start by looking closely at the Facebook shutdown that started in 2019, before covering the years leading up the Privacy Wars and then seeing how EU policy helped shape what was to come.

FIRST STEPS AND THE FACEBOOK SHUTDOWN: 2019-2028

To my 14-year-olds in 2049, the very idea of Facebook is baffling – the only online space where you could hang out and chat to people for free was owned by a company? Now, thanks to the InternetSpace4EU programme set up in 2028, a free, open space to meet and discuss online is maintained and moderated by independent authorities and supported through EU funds. When the space was first established 21 years ago now, its designers drew heavily on the work of digital rights campaigners, inspired by their embrace of the creative and democratic potential of online communication and their dual mistrust of private monopolies and unchecked state censorship.

More than 5 billion people were using the internet by 2020. It took nearly 10 years – from 2019 to 2028 – but eventually the voices speaking out for the internet's structure to be managed and regulated as part of our global public sphere were heard. In 2016, the United Nations Human Rights Council passed a resolution for the "promotion, protection, and enjoyment of human rights on the internet" which condemned any country that intentionally disrupted the internet access of its citizens.[1] The right to online access (the European Commission clarified in 2027 that this was an intrinsic part of the European Convention on Human Rights Article 10 on freedom of expression and Article 11 on the freedom of assembly and association) now goes even further, granting citizens the right to access the internet regardless of cost. Establishing unrestricted internet access set the EU apart from the rest of the world; it became a beacon for nations to follow. Without these two landmark movements, the online world would not now be as open as it is.

But back to the Facebook shutdown of 2019-2020. I will have to explain to my incredulous 14-year-olds how people back then were allowing companies to control their data. It's not that people were stupid, it's more that they didn't realise what was being done. No one knew how much data was actually worth and most people had never even heard of the enormous data brokers such as Acxiom and Oracle operating behind the scenes. The Cambridge Analytica scandal that broke in 2018 began to change all that. People started to switch off.

The General Data Protection Regulation (GDPR), introduced by the EU in 2018 to protect citizens' privacy, was to fundamentally alter the internet forever. Since the inception of the internet in the early 1990s, data had been gaining importance. By 2019, it was the

1 United Nations Human Rights Council (27 June 2016). *The promotion, protection and enjoyment of human rights on the Internet*, A/HRC/32/L.20. Available at <bit.ly/29jpSS4>.

main currency of the World Wide Web, used in advertising that kept many free sites alive. But the GDPR, and even more so the ePrivacy Regulation signed in 2021, began to restore the users' expectation of privacy. When it finally came into force in 2022, the regulation included a ban on 'cookie walls'. The whole notion seems outdated now, but at the time it massively changed the balance of power between users and companies.

THE HEAT OF THE PRIVACY WARS: 2025-2030

But as is often the way, things got worse before they got better. Throughout the late 2020s, privacy became a bargaining chip. Increasingly wealthy Europeans, Americans, and East Asians purchased services that were previously free of charge to avoid tracking and profiling. In Europe, business models shifted in line with the ePrivacy regulation, which favoured sites offering genuine services over those dependent on advertising.

In other parts of the world, tracking remained the norm. People could not afford to pay for services, and globally a two-tier society of the privacy 'haves' and 'have nots' emerged. Particularly in the US, those who had money paid for privacy while others went without. In large parts of the world, especially in the Global South, weak net neutrality led to the internet being nothing more than walled gardens run by tech corporations. People's understanding of the internet was limited to the four or five apps that came with their mobile phone package. Alarmed, the EU further strengthened its own net neutrality laws in 2029.

By the mid-2030s, the World Wide Web was effectively balkanised. Different world regions and countries sealed off their internet universes from others through a mix of blocking, decreasing interoperability, regulation, and physical infrastructure. Totalitarian regimes favoured the restricted Chinese model – heavily monitored with very little free flow of information. There was the two-tier American model driven by corporate avarice, and of course, there was the Dark Web.

The Chinese model and the Dark Web still exist to some degree. I don't like to encourage my year threes to think of the Dark Web as cool, so I tone it down. The Dark Web describes a section of websites that are on an internet-connected network, but that are encrypted so they cannot be found by traditional search engines or browsers. Essentially, they are non-indexed websites – like buildings that are not marked on a map. "So you can't find them unless someone tells you how to get there?" I can already hear them wonder. "That's kind of the point," I explain. But what of the American corporate model? "What happened to it?" my students ask.

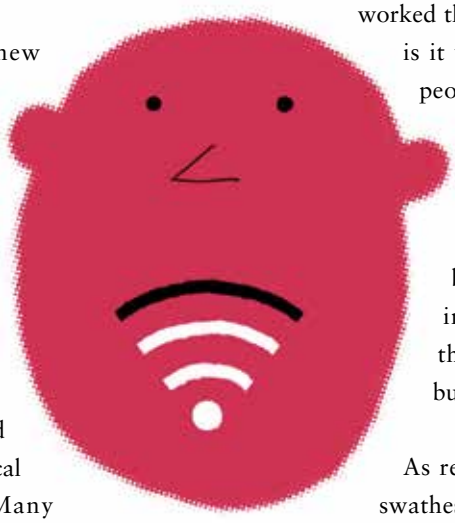
Throughout the 2020s there were calls by the European Parliament and various national authorities to break up Google and Facebook. It was feared that their mass of aggregated data allowed these corporates not just to track but also to manipulate people. The first outcry was over the 2018 Cambridge Analytica scandal, but it was felt all the more intensely following state-sponsored interference in the 2024 European Parliamentary elections. In parts of the world, the rule of law wavered between 2021 and 2026 as deep fakes and sophisticated disinformation undermined trust in legitimate governments. Elsewhere, technology was, as it still is in places, used to keep autocratic governments in power through surveillance. Internet shutdowns were particularly pervasive in central Africa.

As early as 2018, the EU had promised to tackle the question of data as an asset in mergers and competition cases. With the growth of machine learning, artificial intelligence, and what was back then called the Internet of Things (the increased interconnection of everyday objects via the internet), data was power. Businesses developed new models and found efficiencies through analysing massive data sets. As these were concentrated in the hands of a few corporations, policy-makers became worried. Companies had previously 'promised' not to merge datasets (as Facebook had done when it bought WhatsApp in 2014… before merging the datasets). Instead, laws were amended so that competition authorities could examine datasets when considering mergers.

That effort was stepped up in 2020 and data became one of the most important assets to assess in any merger, much to the chagrin of big American and Chinese corporates trying to snap up smaller firms. Some went even so far as to lay the blame for the recession in the mid-2030s at the door of these well-meaning "do-gooder" regulators who had undermined

dominant business models. Putting people before power made everyone poorer, critics claimed.

On the political front, new electoral laws spread throughout EU member states and overt political advertising became subject to strict conditions in almost all states by 2024. Even former EU countries that crashed out of the bloc over failure to respect the rule of law had adopted new rules on political campaigning by 2033. Many argue that in several countries those rules only serve to bolster the status quo, but we'll come back to that another day.



THE LONG RECESSION: 2030-2035

Although the internet changed substantially in the decade leading up to 2030, even in Europe old business models persisted. Many multinationals continued to try to skim as much data as possible from (increasingly savvy) users to sell on. But with the emergence of the two-tier privacy system and the ongoing Privacy Wars, those giving away their data were predominantly those who could not afford to do otherwise. And this is where we get to the real crux of the matter: advertising is only as valuable as the goods, products, and services being sold. Even my 14-year-olds worked this out pretty quickly: is it worth advertising to people who cannot even afford basic services? With no one spending, even the most manipulative of behavioural advertising firms discovered that their houses were built on sand.

As recession struck, large swathes of America fell into poverty, driving political upheaval and an even greater widening of the gap between rich and poor. China all but shut its doors. The Chinese money that had been pumped into buying foreign corporations slowed to a trickle. Europe, often seen as the slow-moving, dignified old woman of the internet, gradually took the lead.

Having become much less hooked on the data and advertising model, Europe's economy was not hardest hit when the recession came and was free to set its wheels in motion to slowly regain economic stability without worrying about big corporates collapsing. In simple terms, Europe had not grown as quickly as the US and had less to lose.

In other ways, the EU's approach to online governance had set it up for stability and recovery. A big push throughout the 2020s had led to digital services, such as eGovernment, single sign-on, eHealth, and cross-border single taxation being provided by governments to citizens in as efficient a way as possible across the EU. Reducing administrative costs in public services might not seem like a huge economic advantage, but when rolled out across an entire continent, the impact was impressive.

The growing sophisticated eGovernment network also demanded state-of-the-art cybersecurity. So much so that despite growing economic and political turmoil around the world throughout the 2030s, Europe became the place to be if you wanted to work on cutting-edge cybersecurity. The EU institutions invested heavily in relevant research. Even the constant demands for weakened encryption from national security authorities became less strident as the EU started to understand its competitive advantage.

A DIGITAL COMMONS EMERGES: 2035-2049

Of course, data had never just been about advertising. The significant advances in artificial intelligence could not have occurred without access to large data sets. However, before machine learning could be allowed to progress too far, there were many debates about its social, economic, and security impact. In 2018, global human rights organisations launched the Toronto Declaration, calling on leaders to address questions of discrimination resulting from the use of machine learning systems.

Over the following five years from 2019 to 2024, policy-makers worked with academics, businesses, and civil society to develop a Digital Data Donor Card. Much like an organ donor card, it allows holders to say for which purposes their data can be used. While many people were concerned about political advertising, most were happy to allow their data to be used for the good of society by ethical artificial intelligence, today widely seen as responsible for our longer life expectancy, cleaner cities, and excellent education system.

Some experts had predicted 'full connectivity' by as early as 2023. In reality it took a little longer and 'all human connectivity' was eventually reached in 2030. Nevertheless, there were still those who didn't quite trust the online world, and from 2035 a debate opened about the right to switch off. A sizeable minority decided they wanted nothing more to do with online life, preferring to pay in cash and meet in person. The EU issued guidelines for stating that, "as far as was reasonable", public authorities should provide an alternative offline method to interact with citizens. In practice, this means one small, usually quiet office in most large towns.

2038
Horizon 2060 project funds open internet space

2040
3DNet Everything Converter invented

2042
Discovery of the new electromagnetic spectrum

Instead the push was not for alternatives to online spaces, but for better online spaces. Surprisingly, it was not younger people who led the march for new ways to communicate and be social online. The internet as a commons was a movement led by people who remembered the offline spaces where people used to be able to talk – the local post office, the pub, the library, the streets. Creating these sorts of spaces online was only made possible by new platforms, whose continued development is being supported through funding from the EU's Horizon 2060 project, established in 2038.

Looking back from 2049, the years when the internet was monetised purely for corporate gain looks like an anomaly rather than the norm. As much as now, people back then valued freedom of expression and free speech, but perhaps did not understand the right to privacy in a public place as instinctively as my students today. Viewed from 30 years ago, the concept of 'privacy in public' is complicated. Partly because in 2019, online, all those public spaces were owned spaces.

In an offline, pre-internet era, everyone had the reasonable expectation of a certain anonymity, even in public space. As you walked down the street, you had the right not to be spied upon or followed. And yet by 2019, that is exactly what was happening to everyone who used the internet. It was the open-source community that got behind the internet as a commons idea and worked to create these safe yet public spaces where people could interact without handing over their data in exchange. Although part-funded by the EU, these spaces are protected by transparency and independence rules, last updated in 2045. No one owns these spaces and the organisation that runs them is depoliticised.

THE NEXT NET: 2049 ONWARDS

This all seems like ancient history and today material, not data, is the lifeblood of the internet. With the discovery in 2042 of an entirely new section of the electromagnetic spectrum, mobile connectivity is

expected to surpass anything our forebears could have imagined. But the 3DNet remains the biggest breakthrough of our times. The so-called Everything Converter is the internet for the 2049 generation.

Developed in Copenhagen, and making its semi-public breakthrough in 2040, the Everything Converter breaks down waste materials at molecular level and repurposes them for 3D printing. 100 per cent recyclability became possible. Early prototypes were too big and cumbersome for any house and many believed only large-scale use by commercial or public authorities would ever be viable. But, echoing the open-source cooperative movement that rebuilt internet space, communities clubbed together to use the Everything Converter at a local level and eventually created a device that could change everyday household waste into printable fibre.

Of course, this is of little use if you lack the design tools to tell your machine what you want to build. The big currency now is design. People share 'patterns' for products. The only thing standing in the way of people building whatever they want is the blueprint, not the material. Is this revolutionising society? Of course, and we don't fully understand what it might yet mean.

My students have a social conscience and, while they love playing with their 3D toys and trading the latest designs, they're aware that there are still those in the world who are less fortunate. This revolution should be for everyone, not just the chosen few. Looking back, the Privacy Wars and how the internet changed over the 2020s and 2030s should teach them this, if nothing else.

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has been a journalist in print, radio, and television for nearly 20 years. For the past eight years, she has specialised in EU policy in the technology sector.

FIGHTING THE BACKLASH

FEMINIST & LGBTQI+ FUTURES

COORDINATED BY
ANNABELLE DAWSON
is junior editorial assistant at the *Green European Journal*.

In 2049, commentators may look back on 2017 as a pivotal moment in the rebalancing of power in society, which has for so long been unequally distributed according to restrictive gender norms. The #MeToo movement spread with tsunami-like force across borders, cultures, and workplaces, upturning the way we talk about sexual harassment and abuse.

While the hashtag grabbed headlines, far more significant has been the ground gained by the tireless activism of women's and LGBT movements, whose dedicated work has been the bedrock of achievements such as the introduction of consent-based definitions of rape and the legalisation of same-sex marriage in some countries.

Much remains to be done and hard-won gains cannot be taken for granted. In 2019, with illiberal movements on the rise worldwide, the place of women and LGBTQI+ people in society has become a key political battle. From the growing popularity of overtly misogynistic strongmen to brazen attempts to roll back rights, an international backlash which demonises 'gender ideology' and champions 'family values' has been met with grim determination by progressives around the globe. While the fight against the Trumps, Orbáns, and Salvinis of our time is being waged on many fronts, it is unified by the struggle for women's and LGBTQI+ rights.

In this context, this panorama lends an ear to diverse and defiant voices from across Europe, while infographics offer snapshot reminders of the status quo. From Croatia to Germany and from Spain to the Netherlands, feminist and LGBTQI+ activists share perspectives and look to 2049 with hope, pragmatism, and imagination. Combatting structural violence; revolutionising sex education; undoing the gender binary: we hone in on the struggles to define feminist and LGBTQI+ action over the next three decades, seeking to inspire and to connect the dots of resistance.

Human rights of LGBTI people in the EU

Source: ILGA-Europe Annual Review of the Human Rights Situation of Lesbian, Gay, Bisexual, Trans and Intersex People in Europe (2018). <rainbow-europe.org>

Marriage equality
National / federal application
Applicable in some regions only

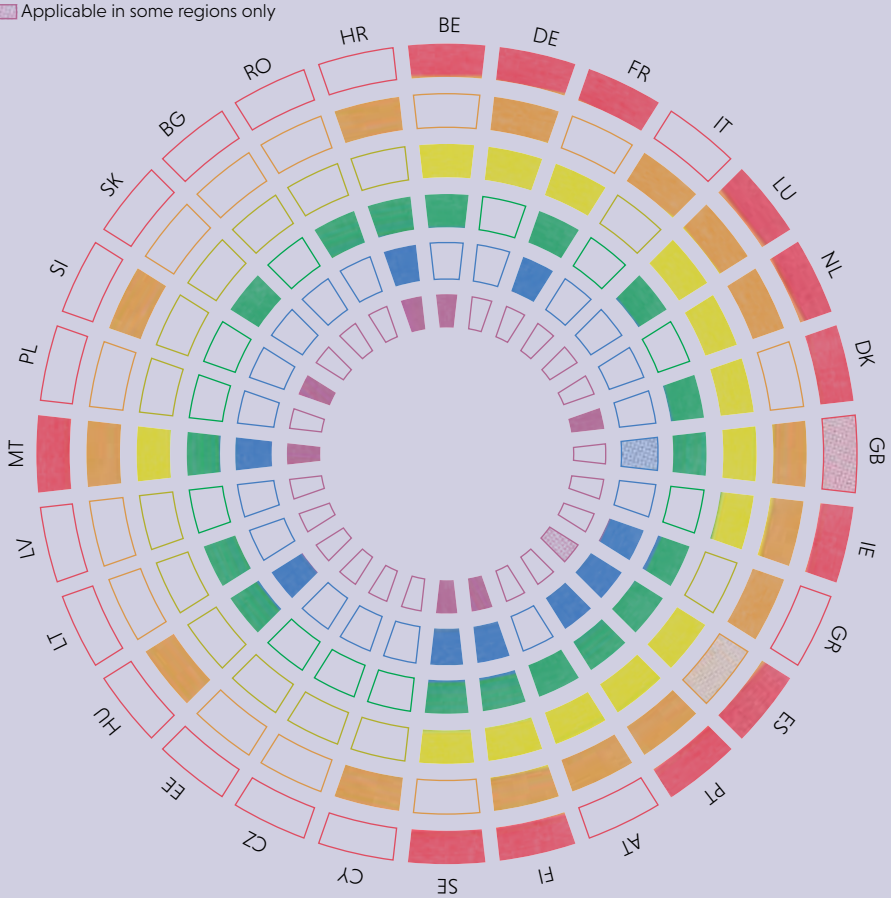
Registered partnership (similar rights to marriage)
National / federal application
Applicable in some regions only

Joint adoption
National / federal application

Hate crime law on sexual orientation
National / federal application

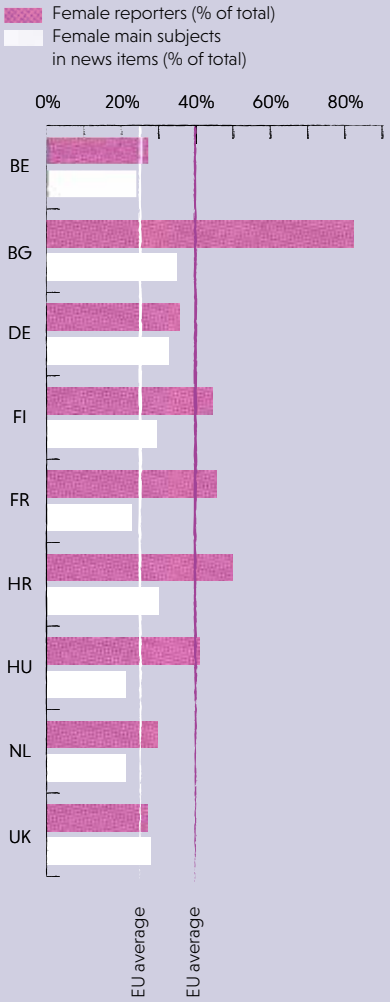
Hate crime law on gender identity
National / federal application
Applicable in some regions only

Law on gender expression (anti-discrimination legislation expressly includes gender expression)
National / federal application
Applicable in some regions only



Women shaping the news and in the news

Source: EPRS briefing: *Gender equality in the EU's digital and media sectors*. March 2018. Original data from the *Global Media Monitoring Project Report* (2015). <bit.ly/2GAL75c>



EUROPE

The movement that started with Tarana Burke's #MeToo campaign calling out daily experiences of sexual violence and harassment transformed European society, after which there was no turning back. The women who at that time spoke, denounced, acted, and demonstrated against patriarchal inequalities and violence paved the way for themselves and their daughters to enjoy a more feminist and inclusive environment.

In Europe 2049, solidarity and sisterhood have radically changed our ways of working and governing. Women are everywhere. Parity is now normal in politics, economy, and public spaces. Girls and young women no longer wonder if they can apply for jobs previously considered to be 'male jobs', if they can practise any sport, or if they can be a great scientist, a famous artist or a high-level politician. Female role models show them every day that it is possible.

The economy has been transformed, and the world values the work that benefits humanity most rather than that which just helps the economy. Care work, education, and the arts are celebrated and valued. Women and girls feel safe everywhere, in public space as at home. Adapting their behaviour to avoid domestic and sexual violence belongs to the past. In any case of violence, they can complain easily; their voice is heard and not questioned by police or the judiciary; they are supported and assisted by specific, well-resourced structures.

Buying a human body for sex is no longer allowed as all European countries have passed laws abolishing prostitution. Social structures ensure that women or girls are not vulnerable to exploitation in prostitution or the sex trade and men understand that consent must be freely given.

Over the past decades, Europe has reformed its understanding of migration so that it has become recognised as a normal part of life. The women and girls who migrated to Europe have thrived, contributing to Europe's growing economy and enhancing Europe's continuous societal and cultural maturity. Europe continues to work towards an inclusive process through which global decolonisation is assured, a fair and feminist approach to global politics is practised, and a just, diverse, and inclusive Europe is embraced.

GWENDOLINE LEFEBVRE is president of the European Women's Lobby and represents Coordination Française pour le Lobby Européen des Femmes in France.

IRELAND

Since gaining independence, Ireland has undergone continued societal and cultural revolutions. Some take place quietly, but most are hard fought over decades, on the streets of our cities, over dinner tables and in the halls of Leinster House with marches, chants, sit-ins, and debates aplenty. Women have always played a central role in this work. Our right to vote; to work; to be free from marital rape; to be with the person we love regardless of their sex; to ensure our consent will be freely given and respected; the repeal of the Eighth Amendment on abortion and legalisation of full reproductive healthcare: each stage of our emancipation has been hard won.

It is these movements that led to the Ireland of 2049. Through the feminist sexual revolution, including mobilisations such as #MeToo, #IBelieveHer, #EndDemand, and #NotConsent, women and girls in Ireland experience less sexualised violence and trust that institutions will support them when they report incidents. Law and policy reforms have gone beyond punitive measures to delivering prevention, shaping a culture where everyone understands the true meaning of consent. Both women and men can have more open sexual relationships based on trust and mutual enjoyment.

The investment in social systems, housing, availability of free and non-gendered education, including comprehensive sexuality education, and seeing role models throughout society – from women in science, technology, engineering, and maths to politics, including a female Taoiseach – means that young girls are inspired and know they can realise their potential. They plan their personal lives, families, and careers knowing there are policies and laws to ensure they will have equal access to opportunities as the boys they grew up with.

Where many parts of Europe faced a conservative, populist, and anti-feminist backlash after the financial crisis of 2008, this came later for Ireland. But with preparation, clear communication, and political reform involving a representative democracy, social progress wins out for the good of all.

By 2049, the Irish Constitution is without influence of patriarchal, religious or colonial structures and instead embodies the spirit of equality, fairness, and inclusion in which it was created. The Irish people make it clear that across all age groups, all corners of the land, regardless of religion and class: we as a people show care and compassion, respect women's freedom, our lives, and personhood. Our constitution, government, justice system, and society values all citizens equally and recognises that a woman's place is wherever she decides it to be.

CATRÍONA GRAHAM is on the board of directors of the National Women's Council of Ireland and is policy & campaigns officer at the European Women's Lobby.

HUNGARY

In 2049, Hungary is governed by a strong coalition of seven Green parties which all formed at the same house party back in the 2010s. The prime minister is a cultural anthropologist, mother of three children – two of those accidental, the last born in the midst of an election campaign focused on healthcare, public education, and liquorice as a national resource.

The country of circa 10 million people was under an ultra-conservative government during the 2010s and 2020s, which resulted in a series of social catastrophes and the population's rapid impoverishment. The fall of the illiberal regime started with an accident: the entire government was hospitalised due to a severe E. coli contamination, locally known as sausage poisoning, at a party convention. A year-long series of riots then resulted in the declaration of the Fourth Hungarian Republic.

The first government was an ephemerous assembly of hobby guitarists, freelance baristas, and suburban PTA moms, the latter of whom have proven pretty good at all sorts of management tasks. They swiftly introduced a comprehensive social policy to tackle the greatest housing crisis in a century. The Marble Countertop Code regulated the housing market, maximised rents, and provided homes for vulnerable people, lifting weight off the shoulders of mothers and women generally, who no longer needed to stay in abusive or otherwise insufficient relationships. The PTA moms allocated huge amounts of funds to public education and early childhood care, declaring the access to these as social rights. Also, the concept of mother's guilt was penalised. People asking mothers why they did not stay home with their kids can now be sentenced to community service and need to attend awareness courses. The government introduced the concept of online divorce in 2037.

The guitar hippies pushed through a decentralised energy policy called Operation Hemp Sweater, which focused on renewable resources and energy efficiency. The baristas campaigned for trade deals which supported small-scale agricultural producers and business owners, thus securing the living of about a third of the population. They also set up a giant mushroom plant to recycle their coffee grounds. Everybody hates mushrooms in Hungary now.

Since this rapid and controversial consolidation process, the greatest debates of the nation have been centred around substance abuse ('the Battle of Chardonnay or Pinot Gris' decimated the first government) and train delays. Men are still legal in Hungary.

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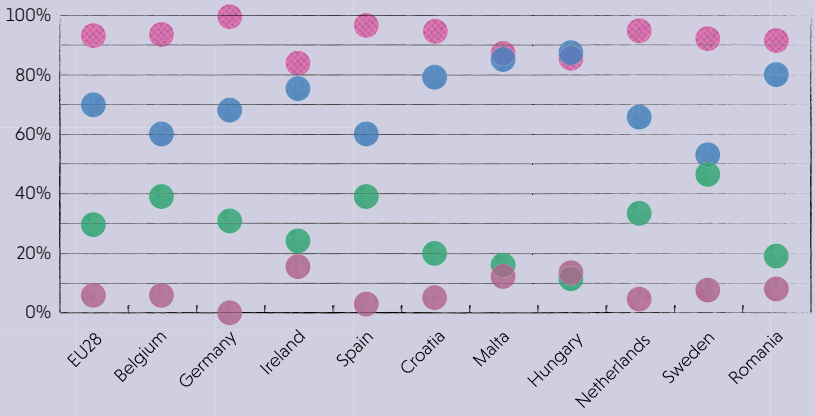

Who calls the shots? Women in decision-making roles in the EU

Source: EIGE (2018)
CEO data 2018 Q3 & Q4
Parliaments data 2018 Q4

- Men as CEOs of largest listed companies (% of total)
- Women as CEOs of largest listed companies (% of total)
- Men in national parliaments (% of total)
- Women in national parliaments (% of total)

ROMANIA

If Mădălina, an 18-year-old woman born to a family of street beggars, mother to a one-year-old and carrying the second child of an unemployed man, were to walk into hospital for a check-up in 2049, she would benefit from a systemic approach. This approach would be the result of years of research and grassroots pilot interventions in rural Romania where poverty affects almost half the population, especially women, and where cultural stereotypes make social mobility almost unthinkable. Mădălina's poverty is intergenerational; her mother and grandmother endured it, and now her children fight the same economic hardship and social stigma. She is supposed to bear both poverty and violence, keeping her family fed and her husband happy.

Professionals will talk with Mădălina's extended family to make them partners in the process, not enemies, and she will be paired with a mentor chosen for her specific needs. Institutions and extended communities will have stopped victim-blaming, a common practice 30 years previously: "Pregnant again? You never change!" An electronic system now tracks each vulnerable individual's access to public services, reducing bureaucracy and overcoming people's reluctance to access social services out of shame or illiteracy. The fight against poverty will have made progress since becoming a national priority when Romania's income inequality became the highest in the European Union.

Cultural stereotypes will still be present in 2049, but institutions and professionals will be trained to understand them, not to perpetuate them. If Mădălina were to walk through the Bucharest metro of 2019 asking for money to buy formula and nappies, many passengers would scold her, telling her that because she enjoyed having children raising them is not their problem. Policemen would kick her off the train and social workers would threaten to take her children and put her in jail. No one would offer her help. If the same scenario were to play out in 2049, passengers could put her in contact with the national programme against poverty through a free hotline where she could learn about her rights and options. The population would understand why intergenerational poverty is so tough to overcome and they would feel part of the effort to prevent it.

ANA MARIA CIOBANU is a reporter at *DoR*, a Romanian narrative journalism magazine, and host of the podcast *Mothers*.

Average hours spent per day (including weekends) by men and women aged 15-64 on different activities

Source: OECD (accessed 2019) <bit.ly/2Sdlj06>

- **Paid work or study:** remunerated employment, school/university, commuting
- **Unpaid work:** routine housework, child/adult care, volunteering, related travel
- **Leisure:** hobbies, social & cultural activities

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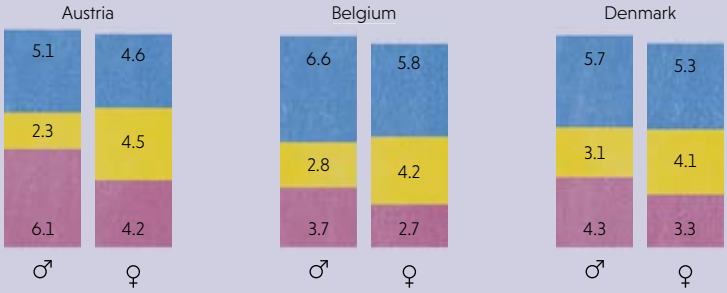


UNITED KINGDOM

The fight for women's suffrage in the UK was never just for 'the vote' as an end in itself. As Emmeline Pankhurst put it, "We are here not because we are law-breakers; we are here in our efforts to become law-makers." With a foot in the door in 1918 women began pushing for legislative change. Within a decade they obtained access to the legal profession, unemployment benefits, and local authority healthcare during pregnancy and maternity; they had also secured the same divorce, property, parental, and finally voting rights as men.

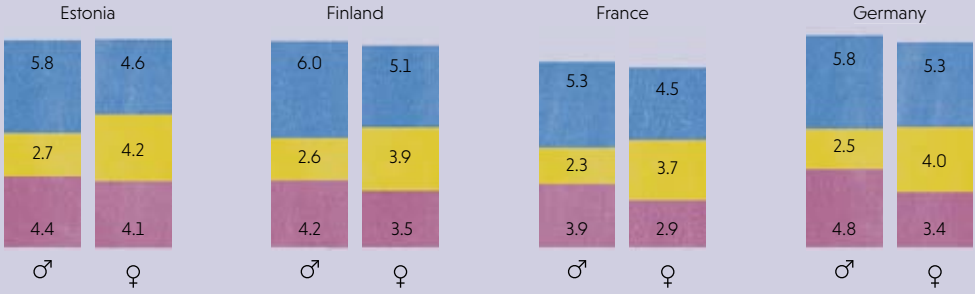
Gains have been made but women remain outnumbered across every area of power and decision-making. Society's attitude to the female reproductive role remains the greatest barrier to the equal participation of women as a group. Our social and political world was built by and for male-bodied people; until legislation, policy, custom, and the very structure of the workplace are shaped as much by female needs as by male, women will continue to be disadvantaged.

First, by 2022: all-women shortlists across all parties. Not all women in positions of power prioritise the interests of women as a group, but they are far more likely than men to do so. A recent bill to decriminalise abortion was approved by 83 per cent of the 118 female MPs present, as opposed to only 50 per cent of the 225 male MPs present. With more women MPs across all parties, total control of fertility (total decriminalisation of abortion, access to sterilisation) should be achievable by 2025.

While women should not be forced to have unwanted children, neither should they be penalised for carrying out a role society needs them to play. By 2028, we need maternity leave paid by the state so that employers have no reason to discriminate against women, and equal paternity leave for men so women's careers don't take the hit by default. State-funded childcare must be reorganised and stepped up between now and 2040, not just in term time and not excluding the poorest households as under the present system, with fair pay for workers, more than 90 per cent of whom are women (and paid less than male colleagues). And by 2030 we should see menopause policies across the public and private sectors that target employment discrimination against what is another consequence of the female reproductive role.

These are the barest basics on which we could build real change by 2049.

LAURA GALLAGHER lives in Bristol, UK, where she works with three different women's organisations.



GERMANY

In 2049 in Germany, I want to be able to use a public bathroom without being harassed or kicked out, no matter what I wear. I want to be able to seek the healthcare and hormones I need without having to submit myself to binary trans narratives. I want people with beards to be complimented for wearing dresses, make-up, and high heels, and I want people to be valued, promoted, and elected for their empathy and compassion. Each person is free to live comfortably in their own skin, without any requirements – from society, from the medical sphere or the state – to be feminine or masculine. I want to live in a world beyond gender.

There is not one single strategy for reaching a world beyond gender. We are all used to being gendered, to a gendered world. For many trans, non-binary, and gender non-conforming people, being gendered is violent. Gender as a social construct is inherently unequal. Patriarchy as a social institution is woven into gender itself. But we can and should deconstruct gender, play with it, ridicule it, and work towards institutional and legal frameworks which support and protect such actions.

The German state should pave the way for this to be possible. At the end of 2018, Germany officially recognised that there is more than men and women by introducing a reluctant third gender option (divers) for official records, but failed to implement a law which recognises and supports all those who do not conform to the binary gender norm of dyadic, cis-gender men and women.

In my 2049, no state, medical practitioner or psychologist cuts my right to self-determination. Anyone can change their legal gender marker without so-called experts writing reports about their 'real' gender, expensive court proceedings, or any other dehumanising procedure. Newborn babies are not classified as male, female or divers but can choose themselves if and what kind of gender marker they would like to have later in life. Changing or removing the gender marker is possible regardless of how one's body looks, of biological difference, and is possible for everyone who lives in Germany, regardless of their nationality. This would be a small step towards dismantling gender.

LOUKA JULE GOETZKE is an editor, writer, and gender chaotic activist for a world without narrow conceptions of gender.

Average hours spent per day (including weekends) by men and women aged 15-64 on different activities

Source: OECD (accessed 2019) <bit.ly/2Sdlj06>

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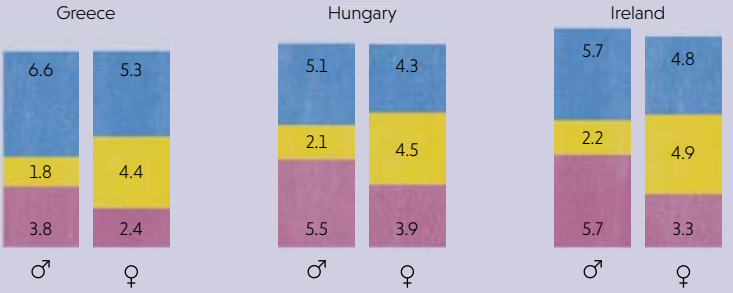


THE NETHERLANDS

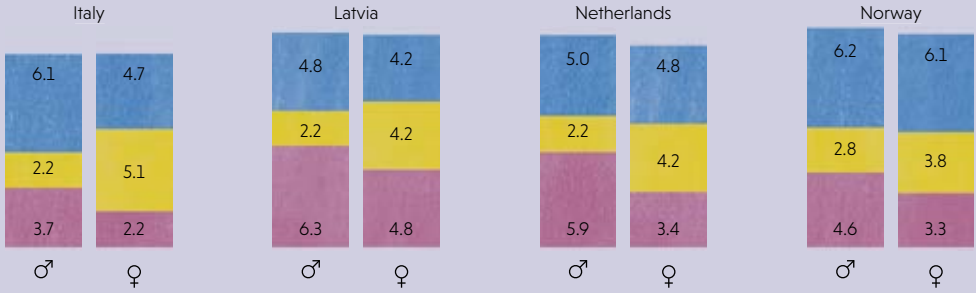
The world's oldest profession is simultaneously the world's most stigmatised and criminalised one. Moral and religious claims about the intrinsic harmful nature of sex work and politics of criminalisation have dominated decision-making for ages. Yet it has occurred in (almost) all human societies throughout (almost) all of our history. Independent of political choices for legalisation or (partial) criminalisation, sex work has always existed and will continue to be around for a long time to come. In this sense, the question is not whether we want sex work, but how to deal with it.

When dealing with sex work, our first challenge is cultural. Being an escort in the Netherlands for six years, I found that the stigma surrounding sex work is often a bigger problem than sex work itself. Stigma closets sex workers, and they must often make difficult choices alone. If sex workers do not feel safe to talk to their relatives, healthcare providers, and the authorities about their job, how can we as a society provide them with safety and support? And how will sex workers ever feel safe to share their stories if they fear that disclosing their job will be met with disrespect and judgement, or worse, exclusion and discrimination?

Our second challenge is political. Politics of (partial) criminalisation are not only systematically unsuccessful in their desire to eradicate sex work, they are also harmful to the sex workers' sovereignty over their bodies, labour conditions, safety, and sexual health. Criminalising sex work pushes the sector underground where control of labour conditions and access to social, health, and police services to sex workers becomes harder. This counts as much for the so-called Swedish model (criminalise only clients) as for full criminalisation.

In 2049, the world needs a different approach to sex work built on destigmatisation, legalisation, and sex worker-led solutions. By then sex work should be treated with respect, dignity and as an equal and worthy job. This implies access to banking services, social insurances, and retirement schemes. Governments should use these regulations not to suppress or limit sex work but to provide safety, health, and good working conditions. None of this can be successfully accomplished if we do not involve sex workers in our decision-making. In 2049 we can create a brighter future for sex workers and all of us if we offer our respect and listen to them.

LYLE MUNS is a political science student and escort in Amsterdam. He was the chairman of DWARS (the youth organisation of the Dutch Green party) and spokesperson of PROUD (the Dutch union for sex workers).



BELGIUM

We have come a long way when you consider that the general acceptance of sex education as a public responsibility is not that old. In Belgium it was illegal to promote contraceptives until 1973. Before then, sex educators and feminist activists had to secretly provide information on sexuality in backrooms, their flyers at times seized by the police. In today's Belgium, we get sex education in schools, but there are few spaces where adults can deepen their understanding of sexuality, despite a great want for this among adults of all ages. By 2049, we need broadly accessible spaces where adults can learn about the finer points of consent, touch, anatomy, and play.

By 2049, sex education should help people to navigate an ever more digital and visual world. Not by scaring them, but by making them more resilient, informed, and creative. Let's not wring our hands about porn, for example – let's teach young people how to critically consume it and help them find their way to queer or feminist porn that takes into account the ethics of production and portrays alternative sexual scripts.

Fear is still an integral subtext of sex education, and in particular female sexuality, which conjures up fears of pregnancy, assault, and lost innocence. Pleasure and consent should take central stage instead. Consent is not about being a prude. It is about grasping the fundamental connection between the capacity to say no and be respected for this, and the capacity to give a lusty yes and to be respected for this. For men, this is just as important. Sex education should give them the opportunity to reflect upon the sexual and gender stereotypes that stifle their lives as well, especially with conservative political movements on the rise worldwide in which the control of female sexuality is yet again turned into a pillar of hegemonic male identity.

By 2049, the starting point of sex education should be that there are many different bodies and many different sexual identities. For now, ethnic and cultural diversity and LGBTQ+ perspectives are too often treated as an add-on to the normal sex ed curriculum, while other forms of bodily difference – such as people with disabilities – are hardly ever considered. New social contexts will always give rise to new ways in which we have to reinvent sexual liberation, but taking into account the above can bring us a step closer.

ANAÏS VAN ERTVELDE is a historian at Leiden University and co-producer of the podcast *Vuile Lakens* (Dirty Sheets), which was published as a book in 2017.

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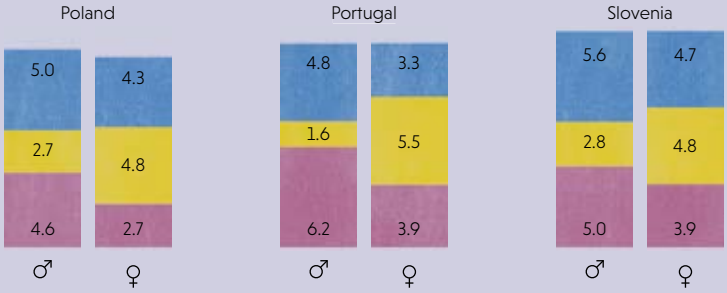


CROATIA

"We are angry, we are ready to resist, we are looking for a change", chanted thousands of people in several Croatian cities during night marches for International Women's Day 2018. Every day since then we have witnessed how the lives of women in Croatia continue to be treated as irrelevant. For every 10 cases of sexism and misogyny, we win one small victory and the extent to which violence against women is institutionalised is increasingly obvious. The current government is preparing to pass a new abortion law that draws on the 'expertise' of a committee mainly made up of gynaecologists who exercise their right to 'conscientiously object'. Some of them are linked to the neoconservative and clerical fundamentalist groups which sprouted after the 2013 referendum that resulted in the ban of same-sex marriage. There is a reasonable fear that the government will try to introduce mandatory counselling and waiting periods into the new abortion law, which would be extremely detrimental to reproductive health and rights.

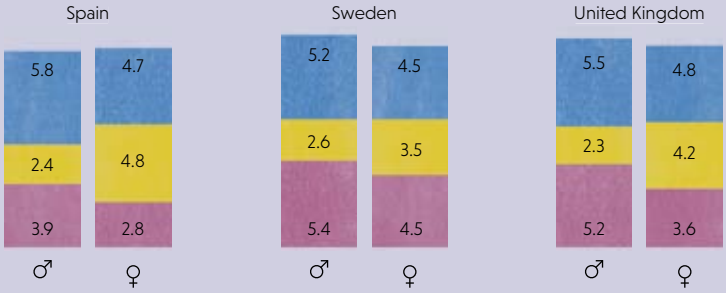
In these circumstances, resistance is our duty. We fight back. Women stood up for their right to sexual and reproductive health by starting the movement #BreakTheSilence. Protests are organised to fight against the unwillingness of state institutions to protect women from violence.

Our hopes and clearly impossible dreams for 30 years' time would see significant improvements in all aspects of the fight against gender-based violence. In our vision for 2049, women are seen and treated as equals in a country where the Istanbul Convention is properly implemented.[1] Progressive secular health and sexual education is taught in all schools and the women's movement and feminist theory and practice are part of the school curriculum. Fundamentalist groups connected with the Catholic Church are politically irrelevant and have no say over women's right to abortion. Abortion is free and available to all women. Women's economic and social rights are respected in a country where capitalism is finally defeated. The challenges to overcome include everything from growing fascist tendencies in society, to everyday sexism in leftist groups. Let the feminist force be with us.

IVANA ŽIVKOVIĆ is a journalist and co-founder of the feminist collective fAKTIV in Croatia.

JELENA TEŠIJA is a co-founder of fAKTIV and has MAs in journalism and gender studies.

1 The Council of Europe Convention on preventing and combating violence against women and domestic violence was signed in 2011 and came into force in 2014.



SPAIN

In Spain, we are on the right track to achieve a much better situation for women by 2049. However, as gender-based violence is a reflection of inequality between men and women, it is hard to believe that it will disappear completely in the next 30 years.

It is crucial to understand that by reducing inequality we can reduce violence. So long as the gender pay gap and the feminisation of poverty continue to exist, so will the optimal conditions for women to suffer at the hands of sexism. Measures that protect women from violent abuse are just as important as those that lessen the pay gap or reinforce feminist economics, such as equal parental leave. A good starting point is to accept that economic, symbolic, and institutional violence are also forms of gender-based violence.

Starting to talk about our freedoms is fundamental too. Every time a woman is raped it is important to see it as the violation of her sexual freedom. Deepening this discourse of freedom can help society create a new sexual culture that is not centred around rape or violence, and that redefines the way we relate to each other as men and women. A few years ago, discussions about consensual sex would have been unthinkable in Spain, but we have recently managed to enshrine this in law. Arriving at this new sexual culture, it will be the norm for all schools to teach sex education, and to talk about the types of emotional and sexual relationships we like.

We must ask ourselves who our policies are aimed at. Health policies, for example, are often designed for white, middle-aged men, even though we are not all affected by the same health problems. Proposals must adopt an intersectional perspective, aiming to achieve better standards of living for the 99 per cent by simultaneously taking into account gender, sexual orientation, social class, ethnicity, race, religion, etc. Any other approach will be a failure for feminism, and an even greater failure for the construction of a tolerable future society for everyone. Such a perspective in the future will likely raise new bioethical conflicts, no doubt concerning fertility, how to adapt our bodies to our sexual identity, and the consequences of increased life expectancy.

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REBOOTING HUMANITY

BLUEPRINTS FOR 2049

AN INTERVIEW WITH
ROSI BRAIDOTTI
BY **LAURENT STANDAERT**

The fourth industrial revolution is upon us, and it is here to stay. How can progressives take back control from tech giants so that the benefits are reaped by all, not just a privileged few? *Green European Journal* editor-in-chief Laurent Standaert spoke to philosopher Rosi Braidotti about how, to make an increasingly robotised world both fair and inclusive, we must interrogate what it means to be human.

LAURENT STANDAERT: **You're someone who already studies the future in the present.**

ROSI BRAIDOTTI: Well, I look at the present in the way that my philosophical mentors and teachers did, which is to look at its genealogy and ask "How did we get to this point?" Take Foucault's genealogy of psychoanalysis, in which he analysed its evolution and its institutions, all the way from prisons in medieval times to asylums, madhouses, and psychiatry. He and others were asking how you can detect in the present the seeds of the future. How are the new figures and discursive categories that then rule our lives emerging? Look at how the new discursive category of the 'terrorist' has evolved to affect our daily lives, our institutions, our ideas and policies, modelling society and influencing technological developments.

In the end, what is really important and interesting is what we are in the process of becoming. And to those who criticise this way of working as being 'marketing' or doing what research and development people in Google and corporate labs are doing, I say, "So what?" This is what

I call the accelerationist argument for the Left and progressives. Are we going to leave the blueprints for the future to the corporations, or are progressives going to influence dominant ideas and counter neoliberal trends? Where the marketing department of Google pushes in one direction – and that is mainly profit-making and a certain view of what is human – we must push the future in the other direction: democratic participation, solidarity, distribution of wealth, and so on.

What are the biggest challenges for progressive forces in apprehending technology, which is today either sold to workers as a threat or to citizens as the panacea for democracy and society?

ROSI BRAIDOTTI: One of the first things the Left and progressives need to do is to get rid of the social constructivist, dualistic methodology that has become our mode of thinking. It's binary. It's us and them. It's nature and culture. It's machines and humans. In particular, the idea that technology and humanity are opposed is ridiculous. Ask your readers who are against technology to shut down all their devices. In fact, throw them away. Oh? Now most of us are not so against technologies anymore because we can't live without them, because they are not devices, they are us, they are extensions of ourselves. This shift is massive and there is both anxiety and contradiction in the Left's relationship to technology, mostly for lack of better ideas. This confusion comes down to thinking that the smartphone with which you are recording this interview is external to the human.

The fourth industrial revolution is here and it is extraordinary, in both positive and negative ways. Artificial intelligence will replace millions of jobs and the economic order is mutating. The task of the Left and progressives should be to manage that transition because there is a polarisation of resources and those at the bottom are missing out badly. This means repairing the situation of those people who have been left behind due to the speed and violence of the transformations, but also due to outdated forms of resistance. A basic, 20th-century model of solidarity is necessary, but this alone is not enough because the technological revolution is continuing, as are its social consequences. The computational networks will continue to generate enormous wealth and enormous disparity in access to this wealth. The idea that our lives – both social and economic – are technologically mediated and that we consume and generate data day and night for free has acquired not a left-wing label but a right-wing one with the tag 'pay as you consume'. The profit motive guides technological development. We need to take a different direction and make this technology a universal and free human right.

What worries me is that progressives and the Left don't even agree on the diagnosis of the

technologically driven and mediated social sphere. These developments are here to stay. For all its problems, the fourth industrial revolution is an exciting prospect and I don't see why we can't have a future-oriented economy with present-day solidarity and redistribution mechanisms.

What governance structure and institutions do we need to create that effect?

ROSI BRAIDOTTI: More Europe! Fiscal power and unity is absolutely crucial to have regulation and redistribution programmes. And yes, the EU can be about redistribution of income, solidarity, and blocking the monopolies of Facebook, Uber, AirBnB, and others who are basically running fiscally illegal operations. When the EU clamped down on Facebook through the GDPR, founder and CEO Mark Zuckerberg lifted a couple of billion accounts from Ireland to Florida overnight. These are the Rockefellers and Guggenheims of our times and we need to tackle them. When the OECD predicts that millions of jobs are going to robots by 2030, we need to act now and at the European level because the transition is already here. People are not stupid and they are going to be angry when their jobs disappear. For lack of response, they'll turn to the far right in desperation for some strongman to solve their problems. We can avoid that if we're absolutely clear on the need to redistribute what we have and to train people for the new economy. Having the European governance here is the only model. It is tragic that Eurosceptics on the Left base their scepticism on a 19th-century model of the economy (while those on the Right revert to virulent nationalism). It is up to progressives and the Left to produce a credible alternative that is anchored in the present and the future, not the past.

In your words, the Left seems to have missed out badly on the tectonic shifts taking place in economy and technology.

ROSI BRAIDOTTI: The Left missed the early warningsabout capitalism's transformations in the 1970s when Gilles Deleuze, Félix Guattari, and other post-structuralist thinkers explained, on the aftermath of the political fallout of May 1968 that capitalism does not break – it bends and adapts. The dialectical paradigm was inadequate: we could not and cannot continue with 'us and them'. The post-structuralist thinkers were saying that we ourselves are part of the problem: we love our television, our cinema, the technology of the day. These technologies are so seductive that they just take off, and we produce more and more information. Capitalism does not need the industrial base, it can invent new products; a financial economy disconnected from the real economy. Back in 1990, in *Three Ecologies*, Guattari commented on the rise of infor-

mation capitalism and talked about personas such as Donald Trump as emblematic of this economy. The Left did not listen!

But today tech goes much further than information technologies. It pertains sometimes to the very fabric of life.

ROSI BRAIDOTTI: Indeed, advanced capitalism runs on algorithms and on biogenetic codes. It capitalises on life and life systems. In this respect, it does not need an industrial base to flourish – (under) paid labour is not the only source of its surplus value. Today the meeting of biology and technology means that bioeconomy is invading our corporeal system, from what we eat to how we heal ourselves. Artificial meat is already old news – we can make enough synthetic meat in laboratories to supply China.

A progressive position would consist in debating, for instance, whether it's right or not to have a new bio-technologised food industry, with moderate prices and open access, or whether it's better to have agroecology, but the point is that we cannot leave these developments to the Right and to the unregulated profit-seeking companies. Why not a bio-socialism for the future? At the moment, if one of my colleagues in the life sciences department patents a new type of carrot, it is their private property. How this is even allowed?

Who's going to break with that system and offer a new paradigm? Hackers? Digital commoners and pirates?

ROSI BRAIDOTTI: Hackers, pirates, and digitals commons people are all facilitating the change but it cannot happen without the involvement of citizens in their own right, plus some serious institutional support – a much more mainstream change like the EU taking on tech giants or South Africa taking on pharmaceutical companies on HIV medicines. Universities have a very big role in this. The neoliberal takeover of universities is an unredeemed catastrophe because it has gone too

ARE WE GOING TO LEAVE THE BLUE PRINTS FOR THE FUTURE TO THE CORPORATIONS, OR ARE PROGRESSIVES ALSO GOING TO INFLUENCE DOMINANT IDEAS AND COUNTER NEOLIBERAL TRENDS?

uncriticised. Universities are becoming money-making machines. Since when did universities have to make profit and compete in a financial market? They used to have charity status and now they participate in the monetisation of knowledge. The university is a centuries-old institution whose model has survived massive revolutions and changes throughout history, from the Guttenberg press to the computer. And now they should model themselves on banks and corporations?

To come back to technology, you're saying that it allows a more profound discussion about humanity?

ROSI BRAIDOTTI: Yes, and much of what I'm describing in my books is actually the current economy. The way Amazon or hospitals are increasingly being managed is with AI and robots: from logistics and decision-making to surgery and robots taking care of old people and rocking babies' cradles! And here comes my big disagreement with transhumanists, all the way from Oxford to Silicon Valley. They are putting the post-human in the future so as to extract themselves from the reality of the present. Oxford scholars are transposing the dominant formula of the Silicon Valley into the world of research. Their thesis is that machines are faster and better than the human brain and body today and therefore we need to enhance the human to make it competitive and surpass the machine. But who decides what machines can or should do? Who decides who is enhanced to become the superintelligent human?

Oxford transhumanists are attaching their thesis to the notion of the liberal individual agent who is epistemologically the humanistic, Eurocentric, masculine, heteronormative, sovereign image of the subject. What I am saying is exactly the opposite: relinquish the liberal individual, bring in nomadic subjectivity, transversal connections and think of ourselves always as an assembly, a complex multiplicity, a plurality. Going beyond 'human-versus-nature-versus-machine' is already a way of starting to recompose a different democratic order. The unit of assemblage is indeed an individual, but completely enhanced, transversal, connected, and mediated. This philosophical and political vision and attitude allows us to 'relax into' technology and repurpose it for the benefit of society and the planet.

So the 'post-human' goes way beyond just technology and transhumanism?

ROSI BRAIDOTTI: The post-human is a way of marking where we are at in evolution. But it's not 'one day we will be post-human', it's something that is in the process of happening. The post-human is about the displacement of the centrality of the anthropomorphic brain as the producer of knowledge, and it's about convergences. The fourth industrial

revolution is defined by the convergence of technologies: info, geo, bio, and nano technologies. Artificial meat is a combination of stem cells, neurological stuff, and, of course, computers, computers, computers. The digital grid is the starting point and everything converges.

But we cannot escape the fact that all this happens within what is commonly called 'the sixth extinction'. The connection between the fourth industrial revolution and the sixth extinction is the missing link. We cannot move into the post-human fully if we stick to an old conception of humanism that excludes women, feminists, the indigenous, the post-colonial, the foreigners, the refugees, nature, and animals.

We can't even start to think who exactly is ceasing to be. And if the fourth industrial age is what we are in the process of becoming, what is ceasing to be then? Unfortunately the fourth industrial revolution and the sixth extinction are ever more disconnected. My favourite example is bitcoins and cryptocurrency. Wonderful technology, but one calculation finds that blockchain uses as much electricity as the whole of Iceland. So should it exist? From the perspective of sixth extinction, the fourth industrial age looks like suicide, unless we seriously start looking at redistribution along non-human lines as well as human lines.

Today, telling citizens that climate is changing, that everything is connected, and to get them involved without causing mass hysteria seems utopian. Instead, we have the radical mediocrity of a political system that doesn't want to break the news that we can't afford the fourth industrial age. Nobody is bringing radical ecology into it, there is no calculation of cost and risks that takes in the earth as a primary mover. A few countries make small steps giving legal personhood to nature and defending indigenous people, and to that we can add international law and conventions, but this does not take us very far. We have a lot to learn from all that which has long been excluded from 'humanism', from women to indigenous people. Indigenous people sustained land for thousands of years and Western humanism destroyed it in 150 years, if not less. But do Silicon Valley and Western governments listen to any of this? It's the disembodied and disembedded nature of the worst European, Western science at work.

For me, the solution has been all along with feminism. Feminism says we have to learn to live differently. But asking people to change the way we live appears to be asking a lot. Capitalism does this, 100 times over, eliminating jobs, destroying family structures, profoundly changing the ways we lived and live, but that's OK because that is 'progress'. If we ask people to change in a different direction, it's utopia! The basic lesson of feminism is interrogating the way we live and speaking from experience grounded in realities, not from a black box that we call the human consciousness. To be grounded and responsible for the planet is also a contribution of post-colonial theory. It is a critique of globalisation as it is sold – a disembodied and abstract process, capital flowing through the air and on the internet. I'm not opposed to market economy; capitalism is a simply a very bad, unsustainable market economy.

What would your Europe of 2049 look like?

ROSI BRAIDOTTI: My Europe would have retained its democratic achievements and would not be at war in 2049. It would have full, free internet for all, border to border. It would

have a population that sees technology as part of what they do and how they live. Robots would be included as friends and co-workers because we will have made it possible for people to see this way by distributing the income that we will have made through the fourth industrial revolution. I see new forms of literacy, and people working less because there will be less need for it but being involved at a very local level. A rebirth of the local, making communities work, making sure that city centres don't die, and making sure that none are left behind.

I dream that we make the sixth extinction avoidable by 2030. And if it sounds like a utopia, it is because we don't yet have this space of democracy and solidarity that allows and nurtures critical intelligence. This will be a Europe where the political economic system does not keep citizens in the dark. Institutions will help citizens understand the conditions of their freedom and their un-freedom. There's a lot we can do to further improve our collective intelligence, to have an empowered, energised citizenry and a system that does not create generations and classes of dispossessed. Collective intelligence gives hope and certainly can help to address the real problems our planet and our societies are facing.

ROSI BRAIDOTTI
is a distinguished university professor at Utrecht University. Her publications include *Nomadic Theory* (2011) and *The Posthuman* (2013).

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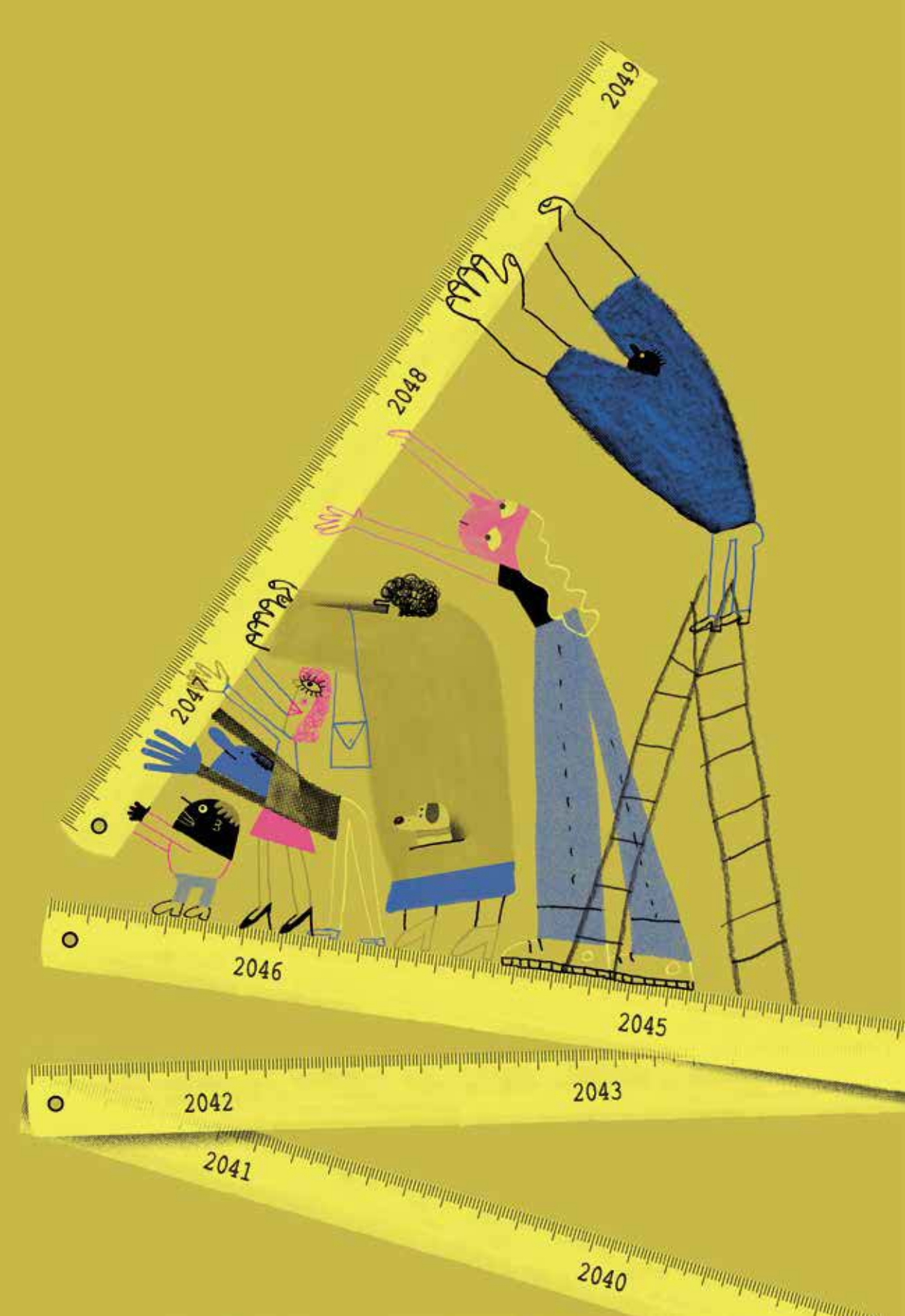
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