Kate Raworth, author of Doughnut Economics. Photograph: Graeme Robertson/The Guardian

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The planet's economist: has Kate Raworth found a model for sustainable living?

Her hit book Doughnut Economics laid out a path to a greener, more equal society. But can she turn her ideas into meaningful change?

by Hettie O'Brien

Thu 8 Jun 2023 06.00 BST

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onsider the electric car. Sleek and nearly silent, it is a good example of how far the world has progressed in fighting the climate crisis. Its carbon footprint is around three times smaller than its petrol equivalent, and unlike a regular car, it emits none of the greenhouse gases that warm the planet or noxious fumes that pollute the air. That's the good news. Then consider that the battery of an electric car uses 8kg of lithium, likely extracted from briny pools on South America's salt flats, a process that has been blamed for shrinking pasturelands and causing desertification.

The 14kg of cobalt that prevent the car's battery from overheating have probably come from the Democratic Republic of the Congo, where cobalt mines have contaminated water supplies and soil. As the demand for electric vehicles grows, the mining and refining of their components will intensify, further damaging natural ecosystems. By 2040, according to the International Energy Agency, the global demand for lithium will have increased more than fortyfold.

Electric cars improve on the status quo without transforming its rapacious use of resources. Subsidised by governments and promoted by the automotive industry, they fit smoothly with the economic ideas that guide how policymakers think about reducing carbon emissions. According to the idea of "green growth", whose adherents include the World Bank and the White House, so long as the right policies are in place, societies will be able to enjoy endless growth while reducing their carbon footprint. Growth, the process by which a country increases the amount of goods and services it produces, is supposed to raise people's wages and provide governments with an income that can be invested into public services such as schools and hospitals. To proponents of green growth, new innovations such as electric cars will help "decouple" growth from carbon emissions and allow humans to live a life of plenty within the limits of the planet.

That's the theory, at least. But there is little evidence that this will be possible on the timescale required. Global carbon emissions have risen to their highest levels in history. Recently, researchers have warned that the Earth may already be past its safe limits for humanity. According to the Intergovernmental Panel on Climate Change, preventing irreversible damage to the natural environment depends on holding the world below 1.5C of warming, and climate scientists calculate that the emissions of high-income countries need to decrease at 10 times their current rate to achieve this. Electric cars will be essential to this, but if nations are to meet stringent emissions targets and avoid soaring electricity demand, there will need to be fewer cars on the road. The problem is that there are few templates for an economy that radically shrinks the world's carbon footprint without also shrinking our quality of life.

The economist Kate Raworth believes she has a solution. It is possible, she argues, to design an economy that allows humans and the environment to thrive. Doing so will mean rejecting much of what defined 20th-century economics. This is the essential premise of her only book, Doughnut Economics: Seven Ways to Think Like a 21st Century Economist, which became a surprise hit when it was published in 2017. The book, which has been translated into 21 languages, brings to mind a charismatic professor dispensing heterodox wisdom to a roomful of students. "Citizens of 2050 are being taught an economic mindset that is rooted in the textbooks of 1950, which in turn are rooted in the theories of 1850," Raworth writes. By exposing the flaws in these old theories,

such as the idea that economic growth will massively reduce inequality, or that humans are merely self-interested individuals, Raworth wants to show how our thinking has been constrained by economic concepts that are fundamentally unsuited to the great challenges of this century.

To Raworth, the ideal economy of the future can be captured in a single image: a ring doughnut. Its outer crust represents an ecological limit, while its inner ring represents a social foundation. To step beyond the ecological limit will damage the environment beyond repair. To fall below the social foundation will mean some people go without the things they need to live well, such as food, housing or income. Her argument is that economies must be designed so they operate inside this ring, enabling humans and the environment to flourish. The doughnut is premised on three central ideas: the economy should distribute wealth fairly, regenerate the resources that it uses, and allow people to prosper. None of this, Raworth argues, should depend on economic growth.

An aerial view of solar panels in Bangladesh's coastal area. Photograph: Anadolu Agency/Getty Images

In the hands of another writer, this could feel technical and remote, but Raworth approaches it with nimble metaphors and a chatty, playful disposition.

Part of the book's appeal is its implied message that intractable problems could be resolved were they only framed differently. "By revealing old ideas that have entrapped us and replacing them with new ones to inspire us," Raworth writes, the book proposes a "new economic story". She mentions numerous pioneering experiments, such as the city of Oberlin, Ohio, which is trying to sequester more carbon than it produces, thus bringing its environmental impact within the doughnut's ecological ceiling, or Bangladesh's attempts to become the first "solar-powered nation", gainfully employing women to install renewable energy systems in their villages. Raworth concedes that huge political changes, including clamping down on tax havens, will be necessary to keep economies within the ring of the doughnut. Her propositions feature "no immediate answers for what to do next", she concedes, nor "specific policy prescriptions or institutional fixes". The book is less of a political programme than a provocation to think beyond capitalism's imperatives.

"Most things begin here. In the mind, in the mindset," Raworth told a recent audience at an event in Amsterdam, tapping her head for emphasis. To her critics, a shift in mindset is all very well and good, but it is not enough. The reason we haven't built a fairer, less destructive economy is not because of a failure to tell a better story, they argue, but because politicians bend to the will of corporations and elites, which have little interest in allowing the status quo to change. According to this view, change is not the product of new ideas so much as a political struggle to impose ideas upon the world.

Raworth is meeting these criticisms head on. In 2019, in an attempt to make her ideas a reality, she founded the Doughnut Economics Action Lab, a social enterprise that helps bring communities into the doughnut's ring. It is working with local governments and communities across 70 cities, from Nanaimo on the west coast of Canada to Ipoh in Malaysia, to put the principles of doughnut economics into practice. Now, she faces the difficulty of turning a small set of experiments pioneered by well-intentioned and likeminded people into something far bigger and more transformative.

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hen Raworth arrived at Oxford University to study politics, philosophy and economics in 1990, the only mention of the environment on her course was in an optional paper called Public Economics. Whereas the economists of the early 20th century tended to see their subject as a social science, many of their successors regarded themselves more like physicists, whose job was to uncover the laws that supposedly governed how the economy worked. In her first year, Raworth studied with Andrew Graham, one of the few economists at Oxford to take issue with the narrowing purview of the discipline. Graham liked to ask students questions about real economic events, such as why city centres decline, or whether the "Thatcher experiment" had altered Britain's growth prospects. "If you want to study economising, you can throw all the maths at it that you like," Graham told me. "If you want to study economies, you have to embed yourself in the real world."

In her second year, Raworth wrote a paper on the idea of development. "It struck me that it was the first time in my economics degree that we'd discussed what success looked like," she recalled. "Until that point, it was just implicit that success was about economic growth." In the early 90s, most people without access to life's essentials lived in underdeveloped economies, and most economists agreed that growth was the best lever to improve their lives. As banks opened and businesses started investing, transport networks would emerge and education programmes would train workers to do new jobs that paid them higher wages, which governments could then tax back to pay for public services. Few considered the natural resources that all of this would consume, or that the Earth did not have the capacity to sustain endless growth.

In 1995, after graduating from Oxford, Raworth moved to Zanzibar, an island off the coast of Tanzania, to take up a development fellowship, part of a scheme that recruited young economists to work as civil servants in poor countries. At

the time, Zanzibar was being transformed by tourists, who flew there to stay in the new hotels along its beachfronts. Visitors might have imagined Zanzibar as a landscape of tropical profusion, with its coconut palms, seafood and mango trees, but its ecosystem was delicate. The longer she spent on the island, the more Raworth was bothered by the waste created by the island's booming tourist economy. Single-use plastic bags had recently been introduced, and their bright blue remnants became tangled on the beaches. "I didn't have the framework to describe it, but this plastic was just arriving and arriving, and there was no system for collecting or managing it," she recalled. "I had this real frustration that we were praising countries for their development, and yet saying nothing about the ecological damage that was going on in order to achieve that."

Raworth in Oxford. Photograph: Graeme Robertson/The Guardian

After three years in Zanzibar, Raworth moved to New York to begin work as a researcher on the UN's annual Human Development report, a project that ranked the world's nations not by their GDP but by their citizens' quality of life. While working on a report about consumption, Raworth read a book called How Much Is Enough? by Alan Durning, an American environmentalist. The book posed an urgent question: "Is it possible for all the world's people to live

comfortably without bringing on the decline of the planet's natural health?" The only way to achieve this, Durning contended, was by buying less stuff – fewer fridge-freezers, tumble dryers, hair lotions and television sets. But few would be willing to accept the reduction in living standards that this would entail. "I remember reading about the data – our use of plastics, our use of materials – and I was like, *this is what I've been missing*," Raworth told me.

In conversation, Raworth has a generous tendency to point towards the work of other economists and thinkers, as if showing you the cherished contents of a jewellery box. Sitting at her kitchen table in Oxford last autumn, she told me excitedly about the scientists who had first quantified how economic activity was exceeding the Earth's capacity to support it. Earlier attempts to measure this impact were constrained by the availability of data, which was limited to specific events, such as acid rain or the depletion of the ozone layer. Then, in 2009, a group of researchers in Stockholm produced a circular diagram that identified nine of the planet's life-supporting systems, from biodiversity to freshwater reserves. Each of these systems had its limits, which, if crossed, could cause irreversible damage.

Raworth came across the diagram in 2009, buried in a colleague's PowerPoint presentation, when she was working as a researcher at Oxfam. She was living in Britain with her husband Roman Krznaric, an Australian philosopher who she'd met in New York, and had just returned from maternity leave looking after their new twins. "I remember sitting at my desk, and I was like, bam! This is the beginning of 21st-century economics," she recalled. "It begins with this."

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ast autumn, I travelled with Raworth to the south-eastern outskirts of Amsterdam. She had been invited as the honorary guest at the second annual "doughnut festival" organised by a network of community groups based in the

city, and I had tagged along in the hope of better understanding how her ideas might work in practice. From the vantage of the elevated metro, gabled Dutch terraces gave way to grey housing estates and the skyline gradually began to resemble any other European metropolis. Raworth was wearing a green puffer jacket to guard against the cold outside. Her uniform of dark trousers, durable shoes and block-coloured blouses is smart but muted, as if designed to strike a balance between the demands of a Ted talk and a climate protest. Necklaces are one of her few concessions to whimsy; today, she was wearing one in the shape of a sugar snap pea.

Raworth's ideas have found a large audience in the Netherlands. In April 2020, Marieke van Doorninck, then Amsterdam's councillor for sustainability, announced the city would be basing its sustainability policies on Raworth's doughnut. The declaration suggested a radical departure from the status quo. The BBC released a video explaining how the Dutch were "reshaping their post-pandemic utopia"; Time magazine asked whether Amsterdam was about to replace capitalism. Yet the changes that have happened in Amsterdam are smaller than initial coverage implied. More businesses in the city are committed to reusing materials, and more buildings are to be made out of wood. There seemed to be a tension between the grand vision of Raworth's book and the modest changes that bear its name.

Members of Amsterdam's Green party, *De Groenen,* who I spoke with, along with members of its Doughnut Coalition, a network that is trying to put Raworth's ideas into practice, shared a conviction that truly decarbonising the economy would mean not just cutting emissions but confronting inequalities of wealth and power. When I asked Van Doorninck how the doughnut differed from other sustainability policies, she explained by way of example. "I love the fact that I have a shop around the corner that sells sneakers made from old plastic bottles," she told me. "But my first question should be: do I need new sneakers?"

A bike park in Amsterdam which offers free parking for more than 2,500 bicycles. Photograph: Jochen Tack/Alamy

Van Doorninck worried that the prevailing mode of sustainability involved simply buying different things rather than confronting the economic assumptions that brought about environmental and social disaster in the first place. It is all too easy to imagine a future in which the wealthy continue to buy recycled sneakers, offset their carbon emissions and live in air-purified homes, while the poor suffer the worst effects of food scarcity and wildfires. The prospect of such a future – less carbon-intensive, according to some narrow metrics, but by no means fair – is precisely why Raworth argues we must view social and environmental problems side by side.

Raworth's itinerary in Amsterdam was an indication of how her ideas have travelled. When she first visited the city after the publication of *Donuteconomie* in 2018, she was invited to speak at cultural venues in the city centre. Today, we were going to Gaasperdam, a low-income suburb, for the opening event of the Doughnut festival. Later, Raworth was due at a city farm; the following day she had an appointment at a shopping mall to see a recycling plant, and a meeting with an artist who made sculptures in the shape of doughnuts.

As the metro sped across the city, I asked Raworth about whether she ever used other modes of transport. She had taken the Eurostar to Amsterdam, and when I had visited her home in Oxford a few months earlier, the parking bay outside was decorated with colourful chalk drawings – a celebration, she said, of her family no longer owning a car. Raworth doesn't fly, though she made an exception in 2021 for a family trip to Australia to see her husband's father. When she is invited to speak in places that can't be reached by train, she dials in via Zoom. "The downside of not flying and only getting trains is that, of course, you then have a very Eurocentric perspective," she acknowledged.

When we arrived in Gaasperdam, we were met by Anne Stijkel, a community organiser and former scientist who lives and works in the area. In 2019, Stijkel came up with a plan to translate Raworth's ideas into tangible action. The first Doughnut Deal trained a group of women to sew curtains that helped insulate homes on a housing estate, ticking two boxes in the doughnut's social foundation by giving local people paid work and cheaper energy bills, while reducing their use of gas and bringing them closer in line with the doughnut's ecological ceiling. Today, the community was signing a pledge to create a generator that would turn waste – "shit", as Stijkel repeated delightedly – into biogas.

In the foyer of a community centre, a table had been laid with doughnut-shaped cakes baked in a vibrant shade of green. Stijkel showed us to a hall where a piece of rope was arranged in the shape of a doughnut on the floor. At its centre was a flame powered by biogas that licked the sides of a glass tube. The circle, the flame and the rope gave a ceremonial, almost pagan impression. A group of people gathered in the hall and Stijkel told them to stand in pairs in the circle, back to back, and take turns reading out cards that had been placed in front of them. Each card listed one of the categories from the inner and outer rings of the doughnut: "gender equality", "food", "nitrogen phosphorus loading". The purpose of the task was unclear to me, but everyone in the room seemed energised and hopeful.

A kind of childlike excitement, along with a relentless inquisitiveness, extends to everything in Raworth's life. She asked questions of everyone she met in Amsterdam and never seemed to tire of the endless numbers of people who wanted to shake her hand, or tell her about the thesis of their PhD. This capacity

to generate affection and make people feel seen belies an analytic intelligence and solitary focus. Raworth grew up in west London, and attended St Paul's Girls, a highly academic private school. Her sister, Sophie, who is now a BBC newsreader, wrote in this newspaper in 2006: "As teenagers we didn't understand each other or get on at all. Kate was painfully shy … She was very self-conscious and shut herself away, reading, playing the saxophone and doing art while I was going out to parties. I needed people more than she does. She doesn't need anyone's approval."

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n my conversations with economists and environmentalists who had worked with Raworth, her ideas were described as inspiring and quixotic. "Doughnut Economics is a real testament to her ability to tell stories, engage people and convey economics," Tim Jackson, a sustainability economist at the University of Surrey, told me. But, Jackson continued, like any small and hopeful experiment in doing things differently, the doughnut will inevitably face larger obstacles, whether a privatised rail network so expensive that it forces people to drive cars, or a finance sector that continues to invest heavily in fossil fuels.

Rather than speaking about political conflict and "us v them", Raworth prefers to focus on "we"; rather than talking about parties or elections, she talks about "design". She eschews terms such as socialism or communism and seems to put little faith in Britain's current crop of elected politicians. This approach has drawn criticism from others in her field who see it as a sign of naivety about the way power works. In a review of her book, Branko Milanović, an economist who researches inequality, accused Raworth of "we-ism", of presuming that everyone on Earth shared the same objectives. This, he argued, was why she was able to make claims that were unfeasibly optimistic. While Raworth acknowledges that growth is needed in poorer countries, Milanović thought it implausible that

people in richer countries would ever vote for low or no growth. “Short of magic,” he wrote, “this is not going to happen.”

“Doughnut Economics is all about action. We’re not sitting having academic debates back and forth about the meaning of words,” Raworth said when I put these criticisms to her. “It’s time to be propositional, and sometimes the best form of protest is to propose something new.” To her supporters, the fact that no national government has adopted the doughnut as a substantive policy agenda is not an indictment of Raworth’s ideas, but of our governing classes. Despite plentiful evidence that the pursuit of growth has accelerated the climate crisis, contributed to rising inequality and failed to secure decent living standards even for many people in rich countries, politicians of all varieties still treat it as a panacea.

Like her avoidance of political labels, Raworth’s own position on growth seems formulated to avoid alienating potential allies. “She is very carefully on the fence,” Duncan Green, a former colleague of Raworth’s at Oxfam, told me. Raworth describes herself as “agnostic” on growth: she holds that economies should promote human prosperity regardless of whether GDP is going up, down, or holding steady. “She agonised over using that word, agnostic, because you could have just said, ‘Don’t go for growth,’” Nigel Wilcockson, her editor at Penguin Books, told me. “At one end of the political spectrum, people say ‘an economy without growth is impossible’, and on the other end, people say ‘that’s fine for this set of nations that are doing well, but what about everyone else?’”

Deforestation in Mato Grosso, Brazil. Photograph: Amanda Perobelli/Reuters

After the event in Gaasperdam, Raworth returned to central Amsterdam for a meeting with civil servants from Grenoble. They had travelled from the foot of the French Alps to learn how their city, which received an EU award for its green credentials in 2022, could become even greener by applying Raworth's ideas. Antoine Back, the city's deputy mayor, seemed nervous, even starstruck, to be sitting next to her. On the table in front of him was his well-thumbed copy of *La Théorie du Donut,* which he later asked Raworth to sign. The civil servants sat around a long table and discussed doughnut economics over cups of peppermint tea. Back, a self-described "eco-Marxist" with a debonair haircut, told Raworth that they had mapped issues such as food poverty, air quality and car use in Grenoble, in an attempt to show how the city was failing to stay within the doughnut. "We have entered the Anthropocene," said Back with a dramatic inflection. "This won't be gentle; there will be ruptures, shocks."

Raworth gently suggested that new, less doom-laden words and images would be needed to describe the future. Because there are so few models for a low-growth economy that do not entail returning to an era before industrialisation, it has been easy for critics to portray any attempt to shrink our ecological footprint as an assault on social progress. In the UK, one recent proposal to limit car traffic was accused of trying to "reinvent feudalism" and return humanity to an age when people never left their villages. The ease with which

those sceptical of growth are treated as heretics or hair-shirted hippies is part of the reason Raworth treads delicately, and focuses on more upbeat visions of life in a low-growth economy. “There is a phrase I really like, which is ‘public luxury and private sufficiency’,” she told Back, pointing to Amsterdam’s generous bike lanes and tram system as examples of the luxuries that could be part of the solution to the climate crisis.

Over the past few years, a number of economists and academics have spoken out more forcefully against growth. Proponents of “degrowth”, a theory which has spawned its own sphere of conferences, journals and publications, argue that the world’s rich economies need to shrink, using less energy and fewer resources. To achieve this, consumption must be curtailed and wellbeing should be put ahead of profit. In rich nations, this would amount to a planned reduction of energy and resources to bring the economy back into balance with nature while reducing inequality.

These ideas are not dissimilar to Doughnut Economics. “It’s not the intellectual position I have a problem with,” Raworth wrote in 2015. “It’s the name.” She views degrowth as a “smoke bomb” that confuses more than it explains, redirecting conversations about where humanity is headed down a rabbit hole of debate. On a burning planet, we do not have enough time for such endless discussions, she suggests. “There comes a time for the smoke to clear, and for a beacon to guide us all through the haze: something positive to aim for,” she wrote.

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he week after we met in Amsterdam, Raworth travelled to Birmingham to give a talk at a community centre about putting the doughnut into practice. We took the train with Rob Shorter, an employee at the Doughnut Economics Action

Lab, and Raworth's daughter Siri, an intelligent, quiet teenager. Raworth was carrying a reusable shopping bag full of props: a hosepipe, a rolled-up piece of pipe lagging and a geodesic Hoberman ball that looked like a toy from the 1980s. She and Shorter were planning on trying out a new presentation involving blue plastic balls and tangerines. The tangerines, Shorter explained, would symbolise the living, biological materials on Earth that naturally regenerate, such as plants and fruit trees. The blue balls would stand in for the resources whose production carried an environmental cost, such as plastics and metals, which need to be repaired and recycled so they can be used again. The idea was to show how the current "linear" economy – which burns up resources and spits out carbon – should instead become a "circular" economy, where resources are reused and nature is regenerated. Shorter suggested they could throw the tangerines on the floor to symbolise waste. Raworth wasn't so sure: "Throwing balls is OK – but I don't like the idea of throwing and wasting food."

The event in Birmingham was hosted by Civic Square, a social enterprise that works with low-income local communities and hosts coffee mornings and community festivals organised by people with enticing job titles such as Doughnut Storyteller and Dream Matter Designer. "You can't just keep shouting from the parapets, or relying on governments to legislate," Imandeep Kaur, the founder of Civic Square, told me. "You have to put people at the forefront of the story, so they can actually take part in it." In the future the enterprise intends to repurpose empty high-street spaces for the use of local communities, and to build a new public square. For now, they make do with a floating barge where visitors can read copies of Doughnut Economics over free coffee and cake; on the banks of the canal, they host regular events and a gardening club.

We arrived at the venue, where a conference room had been decorated with hand-painted banners that quoted lines from Raworth's book: "Today's economy is divisive and degenerative by default. Tomorrow's economy must be distributive and regenerative by design." The room seemed to rearrange itself as she moved through it. A beatboxing poet performed a song about the creation of a new economy, and Raworth watched intently, wearing an expression of transfixed delight. Then it was her turn to present. She pulled out the Hoberman ball, its colourful prongs scrunched in the shape of a star. The ball, she said, told a story about our "divisive" economy, which concentrated value in the hands of a few. Raworth tugged at the ball and it bounced into a sphere. The

audience let out a collective “oooh”. “Think of that,” she said. “A system that actually shares value, opportunity … and wealth with all those who create it.” Then it was time for the tangerines. Raworth and Shorter handed them to the front row, who passed them backwards, until everyone’s hands were empty. “This is the linear model of industrial production – the ‘take-make-use-lose’ economy,” Raworth said, pausing on one of her signature phrases to let it sink in.

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Raworth’s critics might have found plenty to be cynical about in this scene – a crowd of adults playing with tangerines in the service of somehow transforming the economy. But the purpose of the presentation, indeed the purpose of every event I attended with Raworth, seemed less about directing participants towards a particular set of actions than expanding their field of vision. When I spoke to Antoine Back via Zoom a few months after we met in Amsterdam, he told me the absence of solutions in Raworth’s work was one of its strengths. “I don’t use the word ‘solution,’” he told me. “It suggests that there is a magic bullet; that technology will come along and save us.” He feared that our tendency to search for irrefutable answers where there are none produces

inertia, leading people to believe that it was always someone else's responsibility to solve the climate crisis.

On the train back home from Birmingham, I thought about a conversation in Amsterdam with Ruurd Priester, one of the organisers of the city's Doughnut Coalition. "Stories and narratives are at the basis of everything we do," he told me. I asked him whether the popularity of Raworth's ideas stemmed from the way they licensed belief – or hope – in the possibility of an alternative to what we have now. "I really like that way of putting it – a belief system," he said. "It's not just about the economy. It's also about how economical thinking has started to dominate the ways you think about yourself, and what you think is even possible."