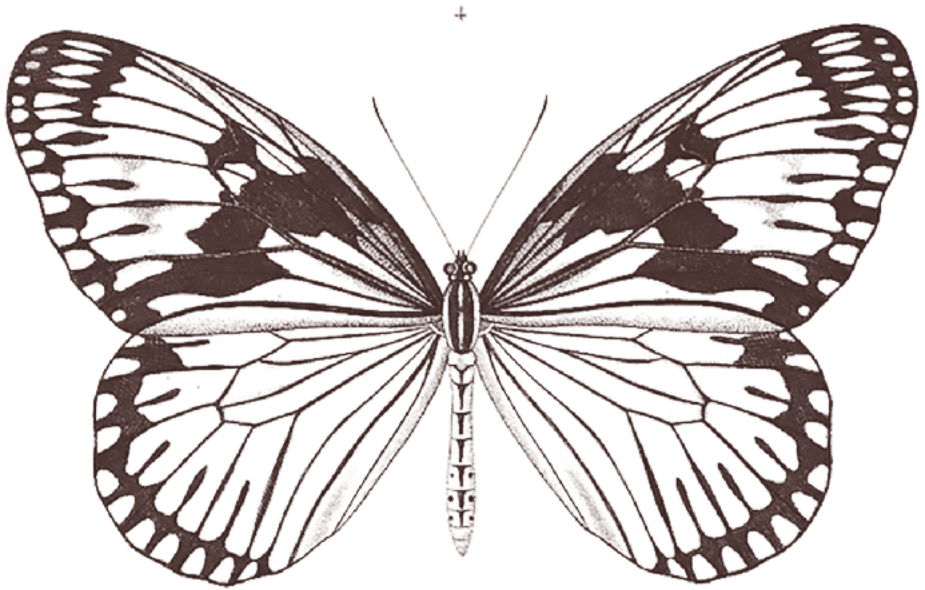


HOW DID WE DO THAT?

The possibility of rapid transition



ANDREW SIMMS & PETER NEWELL

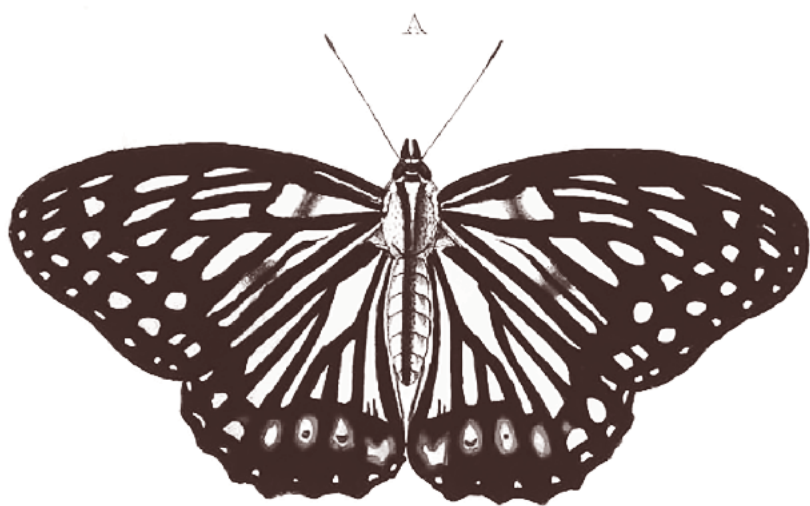
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In brief: the possibility of rapid transition

THE OBJECTIVE: THIS IS PART OF A LIVING EXERCISE TO IDENTIFY AND ENCOURAGE THE CIRCUMSTANCES IN WHICH RAPID AND FAIR TRANSITIONS TO LIVING WITHIN ENVIRONMENTAL THRESHOLDS BECOME POSSIBLE, DRAWING ON LESSONS FROM THE PAST AND PRESENT.

Is rapid transition possible? Sometimes events or new knowledge throw up reasons why we must make change happen quickly. We can end up doing things differently in ways which, moments before, seemed unimaginable. What pushes or pulls us is often something we don't see coming – a volcano erupts, banks collapse, a wall falls or a conflict breaks out. Today that challenge is a civilisation, us, on the edge of irrevocably depleting the ecosystems which sustain it. It threatens to happen also in ways that will hurt its most vulnerable members first and worst, and bequeath our children and subsequent generations an irreversible legacy of increasing environmental chaos.

Politicians, and perhaps much of the rest of society, cannot imagine making the rapid transition necessary to prevent this happening. This pamphlet suggests we can, and that once we understand and accept the necessity of action, we're even quite good at it. The past shows we can adapt fast.

The examples in this pamphlet were discussed in conversations around the UK over the course of a year. They are just a glimpse of where we might look to understand better and drive the dynamics of rapid transition. There is much to be learned, and we hope this encourages a much bigger conversation. Just from these examples, some patterns of rapid change emerge, such as:

- **we are actually good at adapting when the need arises**
- **fairness matters in periods of change and working together works**
- **public leadership is needed but often relies on agitation from elsewhere to come about**
- **there's no one path**
- **boldness is effective but you need to connect actions with reasons**
- **inaction costs and seemingly hard courses can produce pleasant surprises**
- **accepting boundaries on things like consumption of resources can trigger innovation and bring other unexpected benefits**

In other words, history suggests we can do this, and that we might be pleasantly surprised when we start actually trying.

"The past is never dead. It's not even past." William Faulkner



The scene

Why seek change? Look around, there seems no shortage of reasons: failed financial and political systems, industries in decline, large scale poverty and widening inequality, to name just a few.

Alongside and related to these, however, is a crisis of another order. Humanity is overreaching its planetary boundaries in ways that are dismantling its ecological foundations.¹ In climate change alone is a problem whose scale and comprehensive reach call for transformation rather than simple reform.

But calls for rapid transition raise enormous questions. It is much easier, after all, to keep doing today what we did yesterday. We know that, imperceptibly, over time, all things change. But being called on, in a given moment, to start doing things differently is challenging for everyone. And for good reason.

We are currently locked in to a high-carbon global economy by multiple factors. They include energy-intensive infrastructure,

high-consumption culture, unequal distribution of political power within and between states, and an economic system dominated by finance that fails the poorest, takes infinite growth for granted, and resists reform, however broken it becomes.

This 'lock in' makes it difficult to either imagine, or believe in the possibility of transformative change. In a phrase that so well describes this prevailing sentiment that it has been attributed to several different people: *"It is easier to imagine the end of the world than a change to the current economic system."* And yet, as it also says in Proverbs (29:18) *"Where there is no vision, the people perish."* Visualising what can be done, inclusively and progressively, to bring about a sustainable society is therefore our challenge.

Precisely because of the difficulty in imagining a world transformed, the possibilities for rapid transition face a series of doubts that form obstacles to action. Among other arguments raised against the chances for transformation are: that incumbent interests are too powerful, it's just too difficult to do, it costs too much and we cannot afford it, it needs a detailed blueprint which is lacking, the state won't or can't do anything, people aren't culturally ready for change, and that all we really need is a smart, technological fix to these problems.

Many of these barriers are real, but often exaggerated. Powerful incumbent interests do resist change, sometimes successfully, but they can be overcome. Transformations can cost a lot of money – but that money is readily made available when there is sufficient desire to mobilise it. States often do protect the status quo, but they can also act as leaders and innovators of progressive social and economic change.

Although every moment in time differs, such objections to the possibility of rapid transitions could be, and have been, applied throughout history. But, as this pamphlet illustrates, such transitions have and do happen. It may not be possible ever to point out exact parallels – times change, of course – but there are so many occasions in which remarkable shifts have happened in brief periods, that we would be missing a big trick not try to learn from them. There may be lessons both good and bad; and insights from only *some* parts of what has happened elsewhere, in other parts of the world, and in the past, may be transferrable. But just the small selection presented here suggests that we may uncover surprising and useful insights by looking at when, where, why and how rapid change has occurred. This pamphlet is merely an introduction, the result of a series of conversations had around the UK over the course of 18 months involving many groups and individuals, many of whom are named at the end.

If there is one key conclusion that goes against the grain of all the doubts mentioned above, it is that our collective capacity, ability and resourcefulness for change is much higher than is typically recognised.

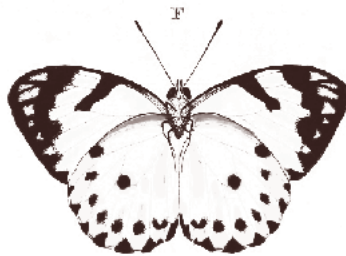
This is, then, primarily an invitation to look more closely at past and present experience, to see what can be learned, positively and negatively. It's also an invitation to work out how such lessons can be applied, in real time, to the 'live' experiment of attempting a rapid transition to the right side of critical environmental thresholds. Only by doing so can our society safeguard the ecological foundations of society and do so in a fair and equitable way.

We want to enlarge the conversation about rapid transition, and ensure that its best insights are brought directly to bear on how we live and make decisions – from the home, to local life, the workplace, to governments and international institutions.

Several groups and individuals are already active in trying to make this happen. Many more are needed. It requires ongoing research, observation, talking about it, and then walking the talk, making changes to what we do every day.

Only in this way might we overcome the ironic maxim of medieval historian Vasily Klyuchevsky, that:

“History teaches us nothing but just punishes us for not learning its lessons”²



The clock: Accelerating transitions

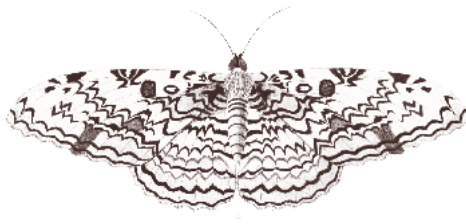
Recent times reveal that mainstream economic models and structures are failing: politically, ecologically, socially, and even on their own terms.

Climate science reveals that, depending on the degree of risk we are prepared to tolerate, we are either living through, on the cusp of, or rapidly approaching, an environmental domino effect set to usher an era of irreversible, catastrophic climatic upheaval. The question is: ***How do we escape, in time, and come out the better for it?***

The latest international agreement on climate change signed in Paris in 2015 proved far more ambitious than many had expected, aiming to hold global warming to 1.5°C above pre-industrial levels, and at least “well below 2°C”. But even 2°C requires emissions reductions well beyond what many climate scientists, economists, NGOs and commentators believe is likely on current trends, or judge as economically viable.³ Current national pledges leave us on course for warming of up to 3.4°C, according to the United Nations Environment Programme (UNEP), and only then if fully delivered. UNEP says they ‘will reduce emissions by no more than a third of the levels required by 2030 to avert disaster’.⁴ Whilst there is a wealth of research and experience in delivering incremental and relative reductions in emissions, there is little systematic analysis of the radical step-changes and rapid reductions that would align with the new international targets – either from a research or from a practitioner perspective.

For a sense of the scale and speed of transformation required, estimates from the Tyndall Centre for Climate Change Research suggest the need for annual, absolute reductions in emissions for already industrialised countries of between 10 - 20 percent, depending on the assumptions made and the amount of risk tolerated.⁵ Yet the UK landmark review of the economics of climate change known as the Stern review noted that annual

reductions of greater than 1 percent have “been associated only with economic recession or upheaval.”⁶ It points to the need for uncommon actions, transformation and rapid transition. Not just in response to the threat of climate change, but to other, often closely related, crises in food systems, forest and marine ecosystems and stresses to water and biodiversity that further imperil us.



Complex circumstances and themes

For convenience, the examples that follow are broadly organised under cases of rapid changes predominantly to infrastructure, the economy and culture.

But many exhibit characteristics of more than one, or all three, of these dimensions.

They illustrate a wide range of processes of change, bottom-up, top-down and combinations of both. Similarly there are examples of both planned and emergent, haphazard transitions and combinations of the two. The same can be said for incidents of centralised and decentralised change, and those occurring on a political spectrum of democratic to autocratic organisation. Some are driven in response to external economic,

environmental or political shocks. Others ride in the wake of new technological disruptions and opportunities, and cultural shifts.

The point in all cases is beginning to build a greater understanding of the dynamics of rapid transition so that, faced with the immediate challenge of making a rapid transition to live and thrive, with fairness, within planetary boundaries, we might make the best possible choices.



How we've changed

RESISTANCE TO CHANGE AS PART OF HUMAN NATURE IS OFTEN INVOKED AGAINST THE POSSIBILITY OF CHANGE. BUT HUMAN NATURE PROVES TO BE IMMENSELY VARIED ACROSS TIME AND SPACE AND ALSO IN TERMS OF HOW ANY GIVEN INDIVIDUAL OR COMMUNITY IS CAPABLE OF CHANGING.

We may well labour under profound misconceptions about our capacity for rapid change as much as we do about the values we believe to be held by others. In cultures where competitive, selfish individualism is embedded in the economic model it's easy to believe that such anti-public, cooperative and communal values are also the default for most people. This matters because such perceptions and misperceptions reinforce apathy and cynicism, and block our willingness to act or support change.

In a ground-breaking recent survey by the Common Cause Foundation, people were asked to talk about their own values and what they thought were the values of others.⁷ Regardless of age, geography, wealth and voting behaviour, people attach more importance to compassionate values – embracing justice, tolerance and responsibility – than to wealth, image and ambition – so called selfish values. 74 percent of us prioritise in this way. But when asked about the values we think others hold, 77 percent of us think others hold predominantly selfish values.

Yet recent generational shifts in attitudes to things like drinking and driving, smoking and various kinds of open prejudice all point to the possibility of progressive behavioural changes. For more, hugely diverse examples that indicate our capacity to accommodate and engineer rapid changes in circumstance, read on.



When volcanoes erupt

In the early hours of Wednesday 14 April 2010, a dormant volcano, covered in ice, with a hard-to-pronounce name – **Eyjafjallajökull** – exploded. Nobody heard it across the mainland of northern Europe because the volcano was far away in Iceland, but the skies above them fell silent. Within hours, airports all over Europe were closing as if a giant master switch for the aviation industry had been flicked to ‘off’. Fine dust from the cloud thrown up by the volcano is lethal to modern jet engines. For days Europe was grounded. *“Five miles up the hush and shush of ash/Yet the sky is as clean as a white slate,”* wrote the poet Carol Ann Duffy.

One of the main arteries of the modern world – cheap, ubiquitous air travel – was suddenly cut. What happened next was revelatory, and a demonstration of how rapidly we can

adapt to live without seemingly indispensable facets of modern life. It was also a glimpse of a future in which climate change, and ultimately limited oil supplies, have clipped the industry's wings.

Stranded travellers, philosophers and poets filled the airwaves with reflections. Yes, it was inconvenient, they said, no one was prepared. But, supermarkets quickly substituted local produce for perishable, luxury horticultural goods normally flown in; delivery companies switched transport modes, business people took to video conferencing, and Norway's prime minister, Jens Stoltenberg, stranded in New York, ran the Norwegian government from the United States on his new iPad. Suddenly the skies were peaceful and people found other ways to get from one place to another. They took trains, buses, taxis and, aided by social media, shared cars, rooms and experiences. They talked to each other and, travelling at a slower pace, found themselves enjoying the scenery and being more aware of the world they were passing through.

Strikingly, given that flying was something many thought we couldn't live without, the world did not come to a standstill. The sky didn't fall, it just looked more peaceful. We heard more clearly, as Duffy wrote, "the birds sing in the Spring". Almost everything simply carried on. Spare capacity in other transport modes was taken up, flexible communications allowed people to be present virtually where they couldn't be physically, and supply and delivery chains adapted. The airlines suffered economically, but it revealed how few of the things we depend on for day-to-day life really relied on the airlines. Life would be different without them (or far fewer of them) but life would go on, as it had done for thousands of years.



When you need to act in extreme circumstances

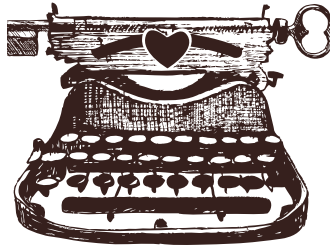
It can be in the direst of circumstances that the boldest experiments may emerge – the idea of ‘paradise built in hell’ as the writer Rebecca Solnit puts it. Although barely reported, just such an experiment is happening in the autonomous Kurdish region of Northern Syria, **Rojava**.⁸

There, Syrian Kurds have set up a secular, ethnically inclusive and bottom-up democratic system. They struggle, successfully so far, against attempts by ISIS to erode their territory, aided by a feminist army – the Union of Free Women (or YJA Star) – and, on a day to day basis, a significant part of the economy is run by women-only co-operatives, who are also key to feeding the people. The academic David Graeber describes Rojava as a *“remarkable democratic experiment... despite the hostility of almost all of its neighbours.”*

Under extreme economic duress **Argentina** turned its back on international financial orthodoxy by defaulting on debt, which formed part of its long-term strategy to recover following the

country's banking collapse in 2000. But the initial economic failure revealed something else, a great capacity for rapid, autonomous adaptation at local level. *Huertas comunitarias*, or community gardens, sprang up everywhere, such as in the La Boca district of Buenos Aires. Alongside them, community kitchens were also established. And things went much further in Argentina, as whole arms of government ceased to function properly. *El Movimiento de Trabajadores Desocupados*, the Movement of Unemployed Workers, brought assembled groups together to do everything from making food, to building shelters, creating markets for people to sell their products, schooling and, also, demonstrating. They created, in effect, a parallel economy. *Panaderia*, *bloquera* and *ropero* – bakeries, block making, and clothes making and selling – were a particular focus, the very basics of a livelihood: food, shelter and clothing. One such group, CTDAV, had 15,000 members and paid out 9,000 unemployment benefits per month in 2002.⁹

When crisis hit **Greece**, people similarly turned their backs on a failed mainstream to grow their own parallel economy. In the Greek port city of Volos, eggs, milk and jam at market could be bought using a new informal barter currency, a Local Alternative Unit, or TEM as was known locally. The system combines an element of barter with an alternative currency. Similar systems are emerging around Greece and are being used for basics like food as well as business and services, with groups like the Volos network enjoying more than 800 members.



When work changes

Responding to a recession in the early 1990s, the public sector in the Netherlands began offering a four-day week to staff to save money. Since then it has spread and become common employment practice, with the option offered to workers in all sectors of the economy. As a result, job-sharing has become the norm in the health and education sectors. It is common to have part-time surgeons, engineers and bankers making the much hyped work-life balance in modern industrial economies a practical reality. One in three men either work part time or compress their hours, working five days in four to enjoy a three-day weekend. Three quarters of women work part time. The popularity of the different pattern is such that 96 percent of part time workers do not want to work longer hours.

It's not just liberal Northern Europe that's seen the benefits of shorter working weeks. In the United States, in the midst of the financial crisis in 2008 – faced with recession, rapidly rising energy prices, growing lines at food banks, rising unemployment and mortgage foreclosures – instead of simply bringing a knife to public spending and pushing austerity measures, Jon Huntsman, Utah's Republican Governor,

surprised people with an experiment to save money. At only a month's notice, 18,000 of the state's 25,000 workforce were put on a four-day week and around 900 public buildings closed on Fridays. The impact of the scheme was studied. Eight out of ten employees liked it and wanted it to continue. Nearly two thirds said it made them more productive, and many said it reduced conflict both at home and at work. Workplaces across the state reported higher staff morale and lower absenteeism. There were other surprises. One in three among the public thought the new arrangements actually improved access to services. It wasn't the main objective, but at a stroke the four-day week also reduced carbon emissions by 14 percent, a huge annual, climate-friendly saving. In a sign of the growing appeal of the idea, in 2013 the Gambia introduced a four-day week for public sector workers.



When culture shifts

Advertising locks in the culture of consumerism. Its messages that define us first and foremost as consumers far outweigh visible invitations to think of ourselves as citizens with broader, extended responsibilities. It's a key cultural dimension that makes it hard to imagine, or believe in, the possibility of rapid

change. Materialism and related overconsumption display self-reinforcing and negative dynamics. Numerous, replicated studies, summarised by Prof Tim Kasser, show that holding more materialistic values is an indicator for having relatively lower levels of well-being.¹⁰ Merely being exposed to images of consumer goods triggers materialistic concerns, which makes us feel worse, and is linked to more anti-social behaviour. Children exposed to advertising are seen to be less likely to interact socially. Other studies show how simply referring to people as consumers rather than citizens triggers more competitive and selfish behaviour.

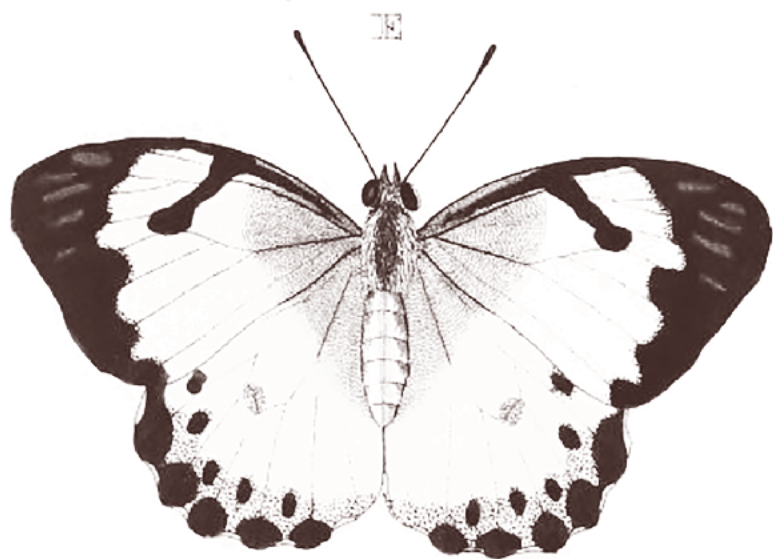
To combat what they called the visual pollution of excessive advertising, in 2007 Brazil's biggest city, São Paulo, led by the city's conservative mayor, Gilberto Kassab, introduced the Clean City Law. The result was a near-total ban affecting billboards, digital signs and advertising on buses. Several US states strongly control public advertising too, and in Paris, recent rules reduce advertising on the city's streets by 30 per cent and cap the size of hoardings. No adverts are allowed within 50 metres of school gates. The Indian city of Chennai banned billboard advertising, and Grenoble in France recently banned commercial advertising in public places in the city's streets, to enhance opportunities for non-commercial expression. Several hundred advertising signs were replaced by tree planting and community noticeboards.

When new movements emerge

Across the spectrum from the Tea Party in the United States to the Occupy movement in several countries, insurgent civil society groups have rapidly shifted political agendas. From radicalising the right wing to radically raising the importance of inequality, established political formulas have been shown to be subject to sudden shifts in response to committed agitation.

Other new social movements have emerged with more practical and less explicitly political objectives: for example, the Transition Town movement. This only began in 2007, but is now present in over 40 countries and has hundreds of initiatives in the UK alone.¹¹ One thing they have in common is ‘just doing it!’ The approach drives practical initiatives toward more sustainable local economies focusing on food, energy generation, transport housing and whatever captures the imagination of the local community. Diverse in focus, they are all about producing a more sustainable economy. The *Buen Vivir* approach in Latin America with strong roots in Bolivia and Ecuador, which has grown rapidly in a similar timeframe, is closely related, embracing the ‘right to a good life and the rights of nature’.

Then there are the many creative protest groups, many of which also become involved in long-term alliances for change, supporting individuals and communities caught in economic struggles.



How we've changed the world around us

THE PHYSICAL INFRASTRUCTURE OF THE WORLD AROUND US IS TYPICALLY EXPERIENCED AS A MOSTLY FIXED, IF SLOWLY EVOLVING FEATURE OF OUR LIVES. BUT THERE ARE TIMES WHEN IT HAS CHANGED WITH EXTREME RAPIDITY, CHANGING ALSO HOW WE LIVE.

When homes are needed

Current estimates suggest that to meet housing demand in England, driven by a shift to one-person households, increasing life expectancy and population increase, additional housing of between 232,000 to 300,000 new units per year are needed, which is between two and three times current supply. It's a problem hugely exacerbated by the large and growing gap between house prices and wages. Neither modern Labour or Conservative governments have been able to solve the problem in the UK.

But relatively recent history demonstrates a country's ability to operate at scale and speed to solve such an infrastructure crisis and market failure. Astonishing by contemporary standards, in Britain's battered and far more indebted post-World War II condition, the number of homes for social housing built

annually by local authorities under a Conservative government in the early 1950s hit 250,000. Under a Labour government, the years 1967–68 saw around 200,000 homes built for social housing. The private sector built a similar number. But the levels of ambition for the public sector providing affordable homes fell off a cliff in the 1980s. In comparison, during 2014–15 just 1,350 homes were completed by local authorities in England, and the private sector built less than half what it did during the mid-1960s.



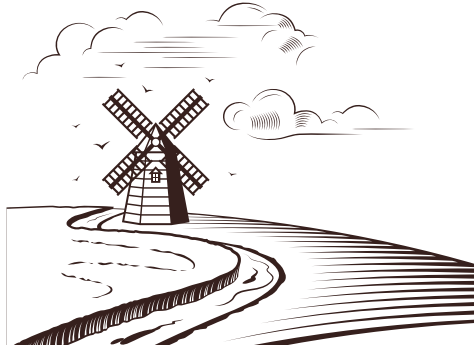
When you need to get around

State-led financing of new infrastructures has many precedents. Post-war, the productive capacity of the recovering United States meant that, for example, from 1956 the US Interstate Highway System managed to build 47,000 miles of highway in just over three decades, changing the landscape for both business and society.

The emergence of the modern, global containerised shipping industry closely echoes the growth of the aviation industry's infrastructure. Both grew rapidly in the few decades after the Second World War, enabling a dramatic acceleration of world trade. One of our current challenges is how these fossil

fuel-intensive networks lock us in to a high carbon emission global economy, creating a kind of path dependency. But these examples weren't the first time that new transport infrastructures were rapidly rolled out.

Boldness was a feature of the early roll-out of new transport infrastructure in Britain. Whereas it took a period of 15 years in recent times simply to electrify 390 miles of existing track on the UK's East Coast Mainline, engineering endeavour between 1845 and 1852 saw rapid infrastructure development when 4,400 miles of railway track were laid in Britain. On a single weekend in 1892, engineers began a project of breathtaking ambition by contemporary standards. It began on the morning of Saturday 21 May and was finished by 4am on the following Monday morning. In just two days a small, perfectly coordinated army of 4,200 workers laid a total of 177 miles of track along the Great Western route to the South West, converting the old broad gauge lines to the new standard, or narrow gauge. When governments throw their weight behind new infrastructures, they can be rolled out at remarkable speed.



When you need clean energy

Renewable energy is confounding claims that it cannot rise to the challenge of substituting for fossil fuels, overcome problems of infrastructure and expand at scale and speed. Increasingly, approaches to community ownership are also broadening the spread of economic benefits and raising enthusiasm for transition. In early 2017 the International Energy Agency noted that renewables were growing 13% more between 2015 and 2021 than they did in the previous year's forecast, with the costs expected to drop by a quarter in the field of solar PV and 15 percent for onshore wind.¹²

In 2015 Costa Rica generated 99% of its electricity from renewable sources, and for 285 days its grid went 100% renewable. In Europe, Portugal reported a period of continuous days when its electricity came just from wind, solar and hydropower. With an enlightened policy framework, in the two decades from 1983 wind power was providing 39 percent of Danish electricity. Sønderborg in Denmark – a centre for technology research and roll-out – is like a green Silicon Valley.

Interestingly, the human brain needs less energy to function than an old light bulb, so quite why we're making such a mess of energy policy, is genuinely hard to understand.

The UK is a windy place and we have in total about 14 GW installed capacity of wind energy. But we've barely scratched the surface of our potential, and the rise of fracking implies we seem almost wilfully to cling to the fossil fuel past. Even in the United States, 8GW of wind were installed in 2015. China introduced much more than the UK total, nearly 20GW, in a single year (2014).

Work at Stanford University produced scenarios whereby every state in the US could be 80-85% renewable by 2030 and 100% by 2050.¹³ What's more, since 2013 the world has been adding more renewable energy capacity than coal, natural gas, and oil combined. Countries such as Uruguay have committed to derive 94.5% of their electricity from renewable energy.¹⁴ Even Saudi Arabia – the ultimate petro-state – recently signalled an end to oil addiction in its Vision 2030 plan.

The future is voting with its feet for a more decentralised, renewable and, importantly, mutually owned energy system. According to the UK's former Department for Energy and Climate Change, community-owned renewable energy projects give 12 to 13 times more value to communities and local areas than those which are privately owned – through more jobs and investment returns staying locally. Germany has over 900 energy cooperatives who enjoy the right to sell energy directly to third parties – and in Hamburg, famously, citizen action led to the grid coming back into public control.



When the world suddenly shifts

Resilience and the ability to make a rapid, low carbon transition in the key areas of food and energy are demonstrated by a very particular post-Cold War example – almost laboratory-like in terms of its isolation and concentrated immediacy. Cuba's transition was a dramatic response drawing both on grassroots community action, and government planning. In the so-called 'special period', while still under a US economic embargo, the country lost access to cheap Soviet oil after 1990. From transport, to energy and high input farming, Cuba had been heavily dependent on imported fossil fuels from the former Soviet Union.

But with the USSR's collapse, almost overnight oil imports dropped by around half. The impact on food availability was such that the average Cuban's calorie intake fell by over one third in the course of around five years. In response, walking and cycling increased and there was a rapid increase in community-based urban organic agriculture. The share of physically active adults more than doubled, while obesity halved. In just five years between 1997 and 2002, according to the American Journal of Epidemiology, deaths due to diabetes fell by half,

coronary heart disease by over one third, stroke by one in five, and all causes by just under one fifth. Half the food consumed in the capital, Havana, became grown in the city's own gardens and, overall, urban gardens provided 60 per cent of the salad vegetables eaten in Cuba. Havana alone ended up with more than 26,000 food gardens. The Cuban experience both echoes and – statistically, at least – surpassed what America achieved in its lauded push for 'Victory Gardening' during the Second World War.

Likewise a '*Revolución Energética*' moved the country to a more efficient, decentralised system with smaller generator stations and shorter distances to transmit energy. Old, inefficient incandescent light bulbs were removed almost entirely, by mandate, in just six months. Fidel Castro's comment at the time was: *'We are not waiting for fuel to fall from the sky, because we have discovered, fortunately, something much more important: energy conservation, which is like finding a great oil deposit.'*

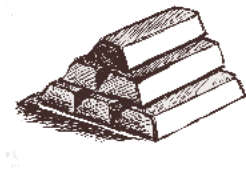
Relatively high community resilience and adaptive capacity in Cuba, embedded in planning approaches and neighbourhood mobilisation, also becomes apparent in its response to climate related shocks. An estimated 1,700 deaths occurred from the impact of Hurricane Katrina in the United States, whereas there were low-to-no deaths in Cuba when the country was hit by an extreme weather event of similar force, Hurricane Wilma: 640,000 people were evacuated, with one fatality in total recorded. And, while the sea encroached 1km inland, Havana was flooded but suffered no deaths or injuries.



How we've changed the economy

IN CONTEMPORARY NEOLIBERAL ECONOMIES WHICH HAVE LIVED WITH THE POLICY MANTRA OF THERE BEING 'NO ALTERNATIVE', FUNDAMENTAL SHIFTS IN THE ECONOMY ARE PERHAPS AMONG THE HARDEST CHANGES TO IMAGINE OR BELIEVE IN.

As mentioned in the introduction, it can be easier to imagine the end of the world, than to believe we can organise its business differently. But again, even very recent history suggests that seemingly locked-in practices and assumptions can be dropped overnight.



When Banks Fail

The notion that you can't 'buck the markets' was turned on its head by the 2007–2008 crisis when financial markets realised they couldn't survive without a massive public bailout and long-

term support. Perhaps it's not difficult to imagine huge resource mobilisation during wartime, but the imminent collapse of the financial system revealed other circumstances in which the state demonstrates its ability to act at scale with speed. The novelist and observer of modern banking, John Lanchester, made this observation in his book about the financial crisis, *Whoops!: 'The amount of state intervention (in the banking system) in the US and UK at this moment is at a level comparable to that of wartime. We have in effect had to declare war to get us out of the hole created by our economic system.'*

Lanchester was referring to the amount of money created by central banks and pumped into the financial system. It was used to recapitalise the banks after the financial crisis had destroyed money and the banks' balance sheets. The method was given the technical term 'quantitative easing', but it was in effect printing money. In the UK the sum reached £375 billion, with an extra £75 billion allocated to weather the impact of leaving the European Union. To put that figure into context, it is about double the UK's combined health and education budget in 2017. In the United States between 2008 and 2015 a breathtaking sum of \$3.7 trillion was mobilised. Meanwhile, across the European Union, the European Central Bank has been injecting €80 billion per month to stimulate the economy, a figure which only fell in 2017 to €60 billion.

A year before the crash in 2006, the Chancellor of the Exchequer, Gordon Brown, had boasted about the UK's successful light touch financial regulation. Later, the nationalisation of key banks like RBS to save them from collapse represented a previously unimaginable ideological reversal in government. There was, however, a missed opportunity in not changing

the mission of banks explicitly to support the productive economy, and in the targeting of cash injections which tended merely to inflate the price of luxury assets. The alternative was highlighted by a report called the Green New Deal, published in 2008, which estimated that the annual spending needed in the UK to set the country on a path to low carbon transition was around £50 billion.¹⁵ That was not simply a ‘cost’ as it would have an economic multiplier effect, generate economic activity, creating jobs and tax revenues. It’s a sum coincidentally similar, in proportion to national income, to Franklin D. Roosevelt’s New Deal programme in the United States.



When a country needs a new deal

The New Deal was a rapid, broad, state designed and led transformation plan in response to massive market failure in the financial system.

Roosevelt’s famous programme delivered in his ‘first hundred days’ remains a benchmark against which the achievements of new administrations are measured. Few have come close. In his first three months in office Roosevelt passed 15 different bills through Congress. It was a multi-faceted programme. The

vigour, confidence, breadth and imagination of the programme is by modern standards extraordinary. A new bank holiday was created to calm fears and take action on the banks, America was taken off the gold standard, the Glass-Steagall Act separated retail from 'casino' speculative banking, new financial regulators were created, a huge programme of rural relief was complemented by an equally large public works programme, and 250,000 conservation jobs were created in national parks and forests.

In addition to reforms of the banking system, the New Deal oversaw a period of compression of inequality generally, an improvement in gender equality, a major programme of new public housing and significant environmental works through the creation of the Civilian Conservation Corps.

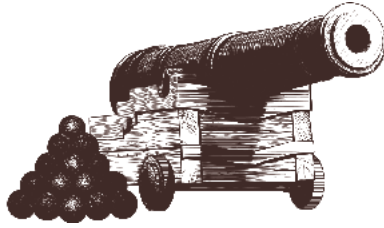
It has been estimated that between January 1933 and December 1940, \$21.1 billion was spent on public relief and federal works programmes under Roosevelt's New Deal. This amounted to about 3½ per cent of total GDP over the same period, and would have been equivalent to £50 billion a year in the UK in the post-crash period, or roughly \$500 billion in the US.



When a nation re-invents itself

Iceland was at the heart of financial crisis in late 2008 and nearly destroyed by it. It built its economy around speculative finance but, after the meltdown, a ‘pots and pans’ revolution led to a process to draft a new citizen-drafted constitution, engaging half the electorate. Rather than making the public pay for the crisis, as the Nobel economist Paul Krugman points out, the country, ‘let the banks go bust and actually expanded its social safety net’ and instead of placating financial markets, ‘imposed temporary controls on the movement of capital to give itself room to manoeuvre.’¹⁶ The constitutional exercise proposed a new approach to the ownership of natural resources for public good. Iceland now gets all its electricity and heat from renewable sources.

The crowd-sourced constitution ultimately fell foul of legal technicalities and the Supreme Court, but that didn’t stop the new mood creating lasting conditions for change and the desire for new economic approaches. Where other countries largely let banks off the hook, in 2015 Iceland’s Supreme Court upheld convictions against bankers at the heart of the crisis. Finance is now so sensitive that when the Prime Minister was caught up in revelations from the release of the so-called Panama Papers, he was forced from office.



When an industry becomes obsolete

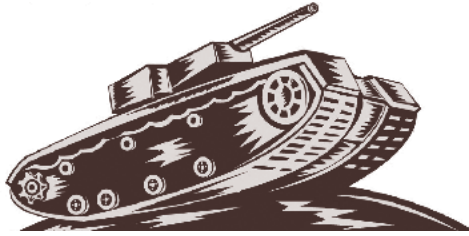
Historically states have also played a key role in managing adaptations to external shocks or re-wiring their economies in line with shifting domestic needs and global demands. This shows, for example, that large-scale industrial conversion is possible. As the Cold War wound down and ended, in the UK, between 1980 and 2005 an estimated 265,000 jobs were lost from the production of military equipment. The job losses resulted from a combination of reorganisation and rationalisation of the arms industry, cuts in UK military spending and a fall in exports. Although there was no stated policy on industrial conversion in this period, spending on military research and development (R&D) fell by around 70 percent between 1990 and 2011, and civilian R&D rose by a similar amount, resulting in an estimated 50,000 – 100,000 new jobs.

A huge disparity nevertheless remains between government-funded military R&D and that for renewable energy, by a factor of 24:1 in 2013-2014, according to Scientists for Global Responsibility. Employment in the growing UK renewable energy sector, however, rose to 110,000 by 2011 (although subsequently falling due to the reduction of incentives and policy uncertainty). In Germany, backed by government,

corporate and trade union support, at the factory level over a 10 year period, manufacturer MAK shifted from making tanks to train locomotives, and Airbus Helicopters went from 100 percent military manufacture to 80 percent civilian.

The military and defence sectors tend to be capital intensive, so reorientation to other, more employment-rich sectors can more than compensate during conversion in terms of protecting jobs. Compared to military expenditure, according to research from the University of Massachusetts, where just employment was concerned, for every dollar invested, health care and housing both produced 50 per cent more jobs, education 107 per cent and public transport 131 per cent.

The UK has seen attempts by workers in the arms trade to reboot their industries for more socially productive purposes. The Lucas Plan was one when, in January 1976, workers at Lucas Aerospace published an Alternative Plan for the future of their corporation. It was a novel response to management announcements that thousands of manufacturing jobs were to be cut in the face of industrial restructuring, international competition, and technological change. Instead of redundancy, workers argued for socially useful production. In promoting their arguments, shop stewards at Lucas attracted workers from other sectors, community activists, radical scientists and environmentalists.¹⁷



When conflict calls

“If only we could tackle the problems of peace with the same energy and whole-heartedness as we tackle those of war! Defence is old-established as a proper object for the State, whereas economic well-being is still a parvenu. Social action which is universally approved for the former purpose is still suspect when it is for the latter.”

J.M. Keynes, 1938¹⁸

Here is a case of rapid shifts in culture, economy and infrastructure. However true, Keynes’ lament is a potent counter to those who argue that the state is largely powerless in the modern world. It does, in fact, prove perfectly capable of making things happen when something is seen as a priority. Huge resources, both physical and financial, can be mobilised rapidly by the state when faced with a physical or financial threat to its well-being and survival. Banking crises and conflict demonstrate both.

Surprisingly, though, just as with the challenge of climate change, that doesn’t mean such things happen easily without agitation. In 1936, as the world enjoyed Germany’s hospitality for the pomp and ceremony of Olympic Games, it took

Winston Churchill to berate the British establishment for its complacency. He was, he said, “staggered” both by the speed of the onset of the danger represented by Hitler’s Germany, and “by the failure of the House of Commons to react effectively against those dangers.” Many in the British establishment opposed going to war with Germany and sought instead an accommodation with the Third Reich. Churchill’s agitation and his taking the role of Prime Minister (instead of someone who favoured appeasement, like Lord Halifax) made a decisive difference. His talent for rhetoric, demonstrated here, turned the Parliamentary tide:

“Owing to past neglect, in the face of the plainest warnings, we have now entered upon a period of danger . . . The era of procrastination, of half-measures, of soothing and baffling expedients, of delays, is coming to its close. In its place we are entering a period of consequences...”

Similarly, apart from Keynes’ detailed policy work, it was for his agitation in forcing the establishment to confront the need to mobilise resources that he was praised by *The Economist* in 1939:

“(Keynes’) great service has been to impel the so-called ‘leaders of opinion’ to reveal the state of their ignorance on the central economic problem of the war.”

In *How to Pay for the War*, Keynes set out to “bring home the true nature of the war-time problems” and pointed out that even a “moderate development of the war effort necessitated a very large cut in general consumption”, and proposed a plan of compulsory saving, because taxes, rationing and mere scarcity were inadequate, backed with the promise of a payback at the

end of the war. Yet even with the spectre of Nazism looming, Keynes' medicine was thought by many to be too strong. "My discomfort comes from the fact, now made obvious, that the general public are not in favour of any plan," he wrote.

And yet Britain did make a rapid transition, mobilising quickly and comprehensively. And it did so in a way that reached up from the roots of civil society within communities, and down from government. Action took place amidst uncertainty and, even allowing for the special constitutional measures of wartime, within a functioning democracy. Actions were both planned, like the rationed war diet, and experimental, in areas ranging from taxation to the technology for combat.

The Shadow Factory Plan – a secret repurposing of some existing factories for the war effort coupled with the building of new ones – was an early sign of the argument for mobilisation being won. Nine new covert factories were commissioned in 1936, with other factories converted, especially those used for vehicle manufacture.

In the name of food security for the island nation of Britain, land use changed. Allotment numbers grew from 850,000 in 1939 to 1,750,000 in 1943 and 10,000 square miles more land was brought into production.

Dependence on food imports halved between 1939 and 1945 and by 1943 there were 3,000 rabbit clubs and 4,000 pig clubs, the latter producing enough bacon for 150 million breakfasts. Overall food consumption went down 11 percent by 1944 and eating patterns changed too. By 1944, 10 per cent of all food was being eaten in works and school canteens, cafes, and restaurants. Scrap metal was saved at the rate of 110,000

tonnes per week and 31,000 tonnes of kitchen waste was saved weekly by 1943, enough to feed 210,000 pigs.

Rationing, though seen as a hardship, was also carefully designed as a 'scientific diet' and for those on the Home Front, there were strong indicators of broad health improvements. Between 1937 and 1944 infant mortality (up to age one) fell from 58 per 1000, to 45 per 1000. And, from being relatively high during the 1930s, suicide rates also fell during the war.

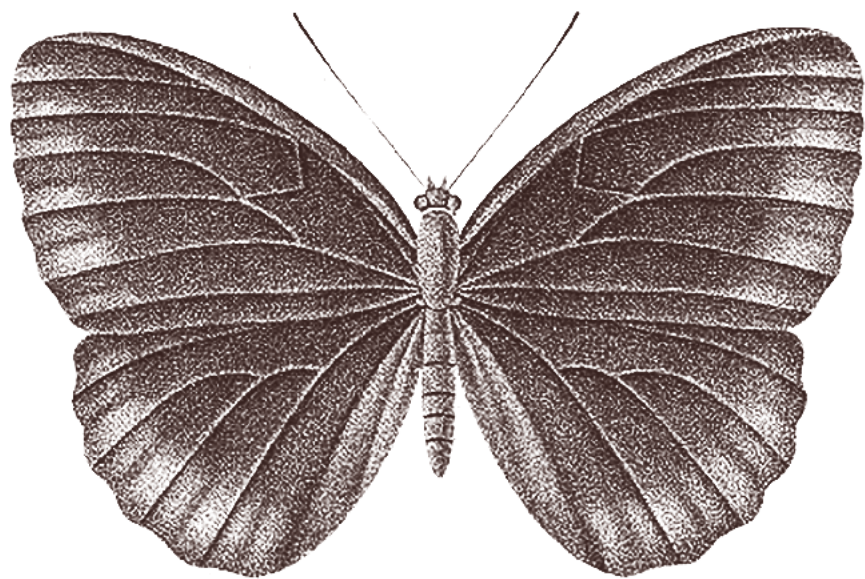
Households changed behaviour and their energy uses. Domestic coal use was cut 25 percent between 1938 and 1944. Electrical appliance use dropped by 82 percent from 1938 – 1944. Petrol for private cars was withdrawn in 1942 and private vehicle use ultimately went down by 95 percent, and, even with energy restrictions, public transport rose 13 percent. Spending on amusements also went up 10 percent.

Where changing behaviour with regard to consumption was concerned, generally, the government deliberately chose rationing over taxation for reasons that were rational and progressive. Taxation alone, it concluded, apart from disproportionately and unfairly placing a burden on the poor, would be too slow to change behaviour. Rationing was considered quicker and more equitable. Tradable rations were rejected through fear of encouraging fraud and inflation and 'undermining the moral basis of rationing'. The historian Mark Roodhouse derives specific lessons for policy-making. If transferred to now, government, he writes, would need to, "convince the public that rationing levels are fair; that the system is administered transparently and fairly; and that evaders are few in number, likely to be detected and liable to stiff penalties if found guilty".

The experience of collective action also created the background to the post-war social contract, including the massive expansion of social housing and the creation of the National Health Service. In short, intransigence and an establishment tendency toward appeasement were overcome by Britain to successfully prosecute a war against fascist Germany. It did so in a way which, although not easy, was transformative and had some surprisingly positive consequences for the health and well-being of the nation.

Parallels between war economies and mobilisation to prevent catastrophic climate change have been drawn by several figures. Former UK Foreign Secretary, the Rt. Hon. Margaret Beckett MP, spoke in the Annual Winston Churchill Memorial Lecture in April 2007 in New York on 'Climate Change: The Gathering Storm', saying: *"It was a time when Churchill, perceiving the dangers that lay ahead, struggled to mobilise the political will and industrial energy of the British Empire to meet those dangers. He did so often in the face of strong opposition and not always with success: wasted opportunities that he subsequently referred to as 'The Locust Years,'" ... "It was his foresight and his determination to prepare for a threat which – to many – was still seemingly distant and uncertain that in the end guaranteed the liberty and indeed survival of my country and that of many others."* Tim Yeo, Conservative MP and former Chairman of the cross-party energy and climate change committee, commented in October 2010 that "cutting spending on low carbon technologies now would be like cutting the budget for Spitfires in 1939." Whereas Stavros Dimas, the European Commissioner for the Environment in 2007, bringing a reputation as a hard-line free marketeer, said, *"Damaged economies, refugees, political instability, and*

the loss of life are typically the results of war. But they will also be the results of unchecked climate change... It is clear that the fight against climate change is much more than a battle. It is a world war that will last for many years... It is like a war because to reduce emissions something very like a war economy is needed."



How we take the next steps

The examples described above are merely cursory and illustrative. Each, alone, might be the useful subject of extensive further research.

And one purpose of this pamphlet and the conversations it emerged from is to invite a much bigger conversation about the issues it raises and the lessons it suggests. But taken together it demonstrates the real possibility of transformation and rapid transitions in how we live. That is because we have lived through and engineered them before.

This is not, however, an exercise in open-ended research for curiosity and its own sake, or the search for a perfect solution. Contrary to the assumptions of some economic doctrines, perfect information always eludes us, and we are charged with making decisions about our future in circumstances of flux, uncertainty and always imperfect knowledge. For this reason we are compelled to make choices based on our best understanding and judgement at any one moment.

We hope to build a greater understanding of the context in which rapid changes have been made, for better or worse. By doing so, we might better be able to produce the conditions in which socially progressive, rapid transitions can be brought about. Then we face the unavoidable challenge to make them happen within necessary environmental time frames, so that we all may thrive within planetary boundaries.

Many observations could be made of the cases described above, but a few in particular stand out:

1. **Fairness matters:** Demonstrable equity matters for the public acceptability of rapid change. This is especially true if and where there is any perceived sacrifice to be made for the greater good. It is for this reason that under economic austerity policies the issue of tax avoidance and high pay shot up the political agenda.
2. **Working together works** and creates new possibilities: The experience of acting collectively to solve common challenges itself creates self-reinforcing possibilities for further transformative action, often unanticipated.
3. **We're actually good at change:** New social norms can quickly take root in everything from working patterns, to transport use, attitudes surrounding prejudice, what is considered social or anti-social behaviour, and patterns of consumption in everything from food to drink, clothing, and social media.
4. **Public leadership is needed:** Initial public investment in a sector or activity can leverage disproportionately larger levels of investment from other sources, and visible public sector leadership on issues can trigger broader change. For example, if government departments visibly shift to using renewable energy, public transport, ethical procurement and shorter hours, it sends a signal. More comprehensive approaches to change, embracing investment, cultural shifts, and new governance approaches, can lead to self-reinforcing change.

5. **There's no one path:** Rapid transitions can result from bottom up and top down approaches, and combinations of the two, but ensuring that top down approaches are equitable and inclusive is a key challenge.
6. **Boldness is good:** In economic terms, 'shove' rather than 'nudge' approaches are more likely to achieve rapid change. The rediscovery of industrial strategy shows there is scope for enlightened leadership and, despite economic orthodoxy, intervention in the market, instead of assuming all change must come from price signals.
7. **Connect actions with reasons:** In making the case for change it is important to keep links between cause and effect, in order that changes do not appear inexplicable and randomly imposed. Campaigns to reduce smoking and drink driving, for example, emphasise the damage it does not just to the smoker and drinker but to their nearby loved ones and others.
8. **Inaction costs:** It matters always to be clear about both the costs of inaction and the benefits of action.
9. **Pleasant surprises do happen:** Change always brings with it unplanned and unexpected consequences – but it can also bring unintended benefits, such as the well-being gains of shorter working weeks and the health benefits of rationing.

- 10. Agitation is necessary:** Agitation in the face of overwhelming odds, and even likely failure, can be a common and necessary feature of great achievements. Movements for race and gender equality, and against colonialism and homophobia, show clearly how progressive political change from above – by governments and others – often has its roots in long fought struggles from below.
- 11. Accepting boundaries triggers innovation:** Setting new parameters around consumption – such as introducing safe limits on the burning of fossil fuels – can unleash innovation and reveal great, nascent adaptive capacity. Businesses, societies and whole economies adapt to new ‘rules of the game’ remarkably quickly.
- 12. Value experiences, not ‘stuff’:** Material consumption of ‘stuff’ in rich industrialised countries can be substituted by spending on experiential activities that benefit well-being.

Summary

THERE IS AN OVERWHELMING NEED FOR RAPID TRANSITION TO A MORE JUST AND SUSTAINABLE WAY OF LIVING. BUT WHAT THIS LOOKS LIKE IN PRACTICE WILL BE VERY DIFFERENT DEPENDING ON WHERE IN THE WORLD YOU ARE.

There is now a huge economic opportunity and need to invest in a rapid transition – in time, money, creativity, innovation and confidence in society's ability to bring about progressive change.

The science is in place, the international agreements are signed, the technology is available but two key things are missing and they are linked: the political will to act at a scale and speed implied by the agreements that have been signed; and the belief that real change is possible.

Yet history and recent experience suggests it is. We hope that we will help overcome the obstacles to change by looking more into these experiences, discussing them more publicly, and learning from and applying their lessons where relevant and appropriate.

This pamphlet and project

Our ambition is to create and grow a conversation on rapid transition. And, to do that we will explore ways to share resources, activities and case studies to allow a 'live' dialogue to happen.

This pamphlet is published by the New Weather Institute, the ESRC STEPS Centre and the Centre for Global Political Economy, University of Sussex.

The initiative draws on and develops the contents of others and from the series of related workshops and events held in Oxford, Manchester, Uppsala, the Centre for Alternative Technology, Brighton, Hay and Dartington. These have been organised in association with the New Weather Institute, the University of Sussex and the STEPS Centre, and partners including LMH, Oxford, the Centre for Alternative Technology, the Manchester Tyndall Centre for Climate Research, Brighton Kurdistan Solidarity, Sussex Humanities Lab, the Institute of Development Studies, the Science Policy Research Unit, University of Sussex, Uppsala Centre for Sustainable Development, the Sigtuna Foundation, What Next Forum, Schumacher College, School of Design, Carnegie Mellon University and Polden Puckham Charitable Foundation.

Organisations active on transformations and rapid transitions:

New Weather Institute — newweather.org

The ESRC STEPS Centre — steps-centre.org

The Centre for Alternative Technology (CAT) — cat.org.uk

10:10 — 1010uk.org

Centre for Industrial Energy, Materials and Products (CIE-MAP), Leeds University — ciemap.leeds.ac.uk

Open University: Stories of Change — storiesofchange.ac.uk

RapidShift.net (USA)

Oxfam — oxfam.org

History and Policy Network — historyandpolicy.org

Friends of the Earth Big Ideas Project — foe.co.uk/bigideas

Scientists for Global Responsibility — sgr.org.uk

New Economics Foundation — neweconomics.org

Greenhouse — greenhousethinktank.org

Beautiful Solutions — solutions.thischangeseverything.org

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Images of butterflies and moths: Biodiversity Heritage Library via Flickr

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