

RSA

21st century enlightenment

Journal Issue 2 2015



The good economy?

Gar Alperovitz argues that capitalism's pendulum must swing from corporations to communities

Mariana Mazzucato encourages the emergence of state-led innovation

Jeremy Rifkin extols the virtues of a near-zero marginal cost society

Help future generations fulfil their potential



1755

RSA awarded its first premiums for new products and inventions

2010

RSA Catalyst set up, seed funding Fellows' projects that make an impact in the UK and internationally

1856

RSA launched the first national exams for vocational qualifications

2008

The RSA Tipton Academy opened, continuing the RSA's strong commitment to education

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“IF WE ACKNOWLEDGE THAT OUR CURRENT SYSTEM IS BROKEN, THEN WHAT DO WE WANT INSTEAD?”

GAR ALPEROVITZ, PAGE 26

REGULARS

- 06 UPDATE
The latest RSA news
- 09 PREVIEW
Events programme highlights
- 46 NEW FELLOWS / REPLY
Introducing six new RSA Fellows, plus your views on recent features
- 48 REVIEW
Sir Tony Atkinson shows how we can combat inequality, and César Hidalgo explores how information grows and what it might mean for our economy
- 50 LAST WORD
Paul Mason imagines a not-so-new world order come 2030

FELLOWSHIP IN ACTION

- 20 *A new concept in local energy markets rewards sustainable consumption*
- 30 *The social enterprise that's targeting child poverty in India by giving mothers new skills*
- 38 *The peer-to-peer lender shaking up higher education funding*

FEATURES

- 10 ECONOMICS
Measure of success
Rowan Conway says economic health must be judged by whether it enables human flourishing, rather than by mere growth
- 12 INNOVATION
The creative state
It's not just the private sector that can foster innovation, says Mariana Mazzucato. Governments can and should invest in the creativity that boosts economic growth
- 18 SOCIOLOGY
Being human
Matthew Taylor talks to Steve Hilton about how we can build more human institutions
- 22 FINANCE
Broken instruments
Is the financial system's complexity the reason we haven't addressed its shortcomings properly? Jennifer Morgan and Chris Hewett discuss
- 26 CAPITALISM
A social capitalism
Gar Alperovitz argues that today's capitalism is irreparable. It's time for community-based systems to take its place
- 32 SUSTAINABILITY
Market share
Jeremy Rifkin says connected technology will enable a third Industrial Revolution with the potential to mitigate the effects of climate change
- 36 INSTITUTIONS
Casting a new mould
Fixing our broken economic system will require deep systemic changes, argues Anthony Painter
- 40 POLITICS
The long game
Tackling long-term problems is daunting, says Jon Bright, but we must if we hope to improve social and economic outcomes
- 42 HEALTH
Patient power
Technology will transform both doctors' and patients' relationship with healthcare. The challenge is navigating regulation, argues Roger Taylor

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“MANY OF THE ASSUMPTIONS IN PUBLIC DISCOURSE ARE LAZY OR PLAIN WRONG”



MATTHEW TAYLOR

The financial crisis may be over, but our economy is in dire need of a fresh paradigm if we're to produce a society that enables everyone to flourish

In terms of top-line measures, the UK economy is doing well. Growth is back, employment is up and average wages are starting to catch up with the losses sustained since the recession. Yet, look below the surface and there are worries: poor productivity, weak trade figures, high inequality and long-term issues about maintaining welfare provision in the face of an ageing population.

What does this mixed evidence amount to? How should we weigh up today's good news against longer-term economic resilience? Events in Greece are a tragic reminder of how quickly apparent success can turn to disaster. Had Scotland voted for independence, the subsequent decline in the oil price would have been a major vulnerability. Meanwhile, growth in the UK economy remains dependent on financial services, foreign investment in UK assets and personal debt.

Despite the importance of these issues, and of economic strategy as a whole, discussion is often narrow and exclusive. This is one reason why I chose to focus my 2015 annual lecture on the future economy and why it is also the theme of this edition of the *RSA Journal*.

We need to open up debate in several ways. Many of the assumptions in public discourse are lazy or plain wrong. For example, as Mariana Mazzucato shows, the idea that innovation is the result only or even primarily of private entrepreneurship misses the major role played by public investment.

Also, as Jeremy Rifkin argues, technology and the emergence of new internet-enabled economic models like the sharing economy are calling into question key aspects of the traditional capitalist model.

In the face of economic weaknesses – whether in terms of productivity, social justice or environmental sustainability – and the major changes ahead, particularly as a consequence of technology, we need to explore new ways of thinking and, as Anthony Painter says, develop new institutions.

The period since the credit crunch has seen interesting experimentation with new economic models, especially at city level, such as the initiative in Cleveland described by economist and activist Gar Alperovitz. The Mondragon Corporation co-operative in Spain and – although less radical in several ways – the John Lewis Partnership in the UK show that alternative models can survive and flourish. This is despite, not because of, the way global and national economic policy is pursued.

There are many different perspectives on the modern economy and its prospects. Given the RSA's focus on providing a platform for new ideas, this edition focuses on critiques and alternatives to the status quo. After all, despite many feeling the credit crunch would be the turning point, since 2008, financial capitalism and corporate power have maintained their grip.

In the face of economic jargon and the sense of there being no alternative to current arrangements, we often forget that 'the economy' is simply the term we use to describe the systems by which we turn assets into human welfare. From this broad perspective, surely we could do better? Over the coming period, the RSA aims to explore how. ■



DESIGN

DESIGN AWARD WINNERS

Microbial swaddling blankets, digital heritage mapping toys, water filtration schemes and workshops to help primary school pupils develop their creative-thinking skills are among 20 winning projects in the 2015 RSA Student Design Awards, out of 800 original entries. The impressive list of emerging designers and innovators represents how design thinking can be applied in a range of contexts to create positive social change.

Kazz Morohasi, won in the 'Heritage by Design' category for her project 'Walkies!', an innovative digital heritage mapping and storytelling project for children, by children. She said: "I pursued the brief because heritage is an important theme for me. However, the more I became involved, the more I came to realise my values, interests and motivations. I think that participating in the award is the beginning of a meaningful design future ahead." Winners were honoured at an awards ceremony in June.

— A full list of winners can be found at sda.thersa.org. To find out how you can get involved, please contact Sevrá Davis at sevrá.davis@rsa.org.uk



INNOVATION

DIGITAL LEARNING

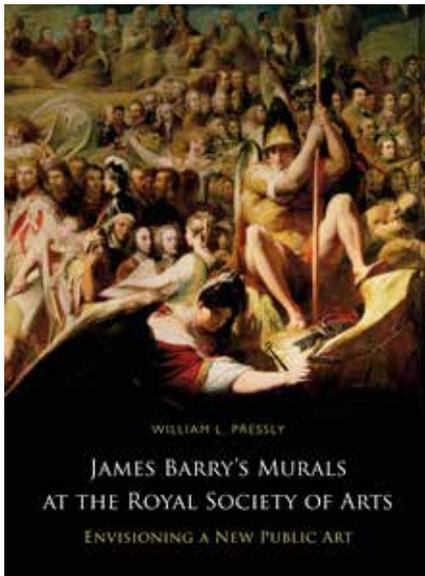
The Action and Research Centre has published 'The New Digital Learning Age', the first in a series of 'Power to Create' reports looking at the impact that digital technology is having on the economy and society.

While for some, a new vista of creative opportunity has opened up as a result of new technology, its full potential eludes others. New technology is not a force of nature; its impact and who gets to share in the potential benefits are grounded in the choices we make as a society.

This report addresses questions about which policy choices will enhance life opportunities for the greatest number as we experience widespread technological change. Report authors Anthony Painter and Louise Bamfield identify three main groups who experience technological change in different ways – the 'confident creators', the 'held back' and the 'safety firsters' – and propose strategic policy interventions to ensure that the real benefits of new technology will be democratically distributed.

— This research is sponsored by Google. Read the report at www.thersa.org/discover/publications-and-articles/reports/the-new-digital-learning-age

**“WHAT POLICY CHOICES
WILL ENHANCE LIFE
OPPORTUNITIES FOR THE
GREATEST NUMBER?”**



RSA HISTORY

NEW BOOK

A new book on the history of James Barry's murals at the RSA has been released. Irish artist Barry painted six murals, titled *A Series of Pictures on Human Culture*, between 1777 and 1784 for the RSA's Great Room. While modern critics have, at times, dismissed the works as bombastic and lacking in conceptual rigour, *James Barry's Murals at the Royal Society of Arts: Envisioning a New Public Art*, written by scholar William Pressly, challenges this view. Instead, the book places this epic work in the same category as the mythic creations of William Blake. Relying on art's transformative powers, Barry's murals are a call to intellectual engagement and, as the book demonstrates, offer an initiation into a 'secret wisdom' that leads to a deeper understanding of life's mysteries. Certainly, after reading it, Fellows may see a very different series of paintings from the ones they thought they knew.

■ Cork University Press is delighted to offer Fellows a 20% discount. Please use the promotional code 'RSA' when ordering online at www.corkuniversitypress.com

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EDUCATION

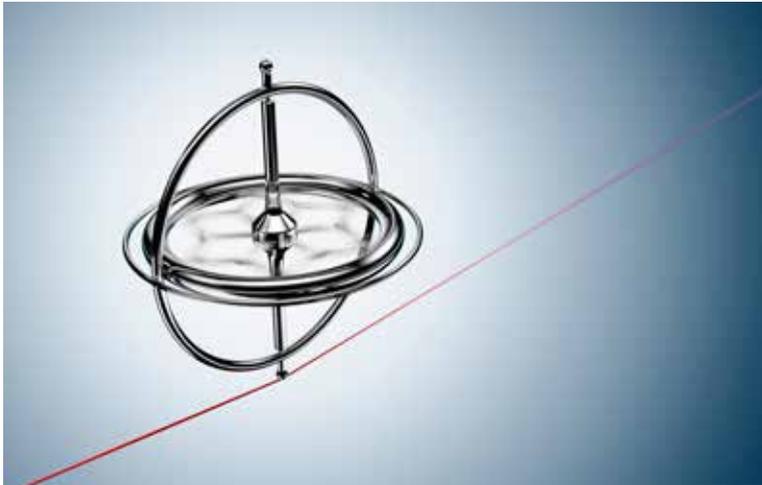
NEW ACADEMIES

The RSA Family of Academies is set to grow from five schools to seven. The two new schools, which are currently consulting parents and staff on becoming RSA Academies, are Abbeywood First school, for pupils aged 3 to 9, and Church Hill Middle School, for pupils aged 9 to 13. Both schools are in Redditch, close to Arrow Vale RSA Academy and Ipsley CE RSA Academy. Should the plans be approved, their addition to the RSA Family will facilitate much closer working between these four schools.

DESIGN

US STUDENT DESIGN AWARDS

In April, 36 of the US's best and brightest young designers arrived in New York to showcase their work and demonstrate design's ability to contribute to a more sustainable future. These were the finalists in the third RSA-US Student Design Awards pilot, based on the successful flagship RSA Student Design Awards programme. The winning work ranged from large-scale projects about the future of transport to communications campaigns to encourage the reduction of air pollution. In his keynote address, Richard Clarke, global design vice-president at Nike, noted how winning an RSA Student Design Award had changed his life by allowing him to move to the US and begin the design career that set him on his path to Nike. Congratulations to all the winners and participants in the RSA-US Student Design Awards.



ACTION AND RESEARCH

STAFF CHANGES

Following the departure of Dr Adam Lent as director of the RSA Action and Research Centre (ARC) at the end of April, there have been some internal staff changes. Rowan Conway becomes director of research and innovation and Anthony Painter is now director of policy and strategy.

Rowan will lead the implementation of strategy for ARC, ensuring that the RSA is undertaking rigorous, profile-raising and influential research and innovation projects, based on our emerging worldview of the 'Power to Create'. This explores how the creative life, too often confined to an elite or a sector, could be fostered throughout the economy and society.

With more than 15 years' experience in research and engagement with communities, businesses and government bodies, including working on the community engagement strategy for London 2012, we are pleased to welcome Rowan to her new role.

Anthony leads our development team, focusing on design, international, behaviour change and the RSA's policy work and consultancy offer. In his work on policy development, he will look at a range of policy issues including the impact of new technology on the economy and society, reform to welfare, learning and skills, and reform to public services and a range of public institutions.

Anthony previously directed the Independent Review of the Police Federation and has also worked with Google and the BBC. He is the author of three books, most recently *Left Without a Future? Social justice in anxious times*.

CITY GROWTH COMMISSION

DEVOLUTION AGENDA

Congratulations to Jim O'Neill, chair of the RSA City Growth Commission, who has been appointed as commercial secretary to the Treasury with particular responsibility for cities and infrastructure investment. We are positive that the commission's recommendations will gain even greater visibility.

INTERNATIONAL FELLOWS

SHARE THE WEALTH

Two Finnish Fellows have completed the mammoth task of translating and publishing Adam Smith's *The Wealth of Nations* into Finnish and donating a copy to every library in Finland. RSA Baltic Sea Region chairman Mika Aaltonen and Adam Smith project leader Pekka Rätty spent two years on the project, fundraising for it themselves and receiving coverage in the national press. In their *Moral Sentiments and the Wealth of the Nations* translation project, both Aaltonen and Rätty believe many things come together: celebration, as it is the 250th anniversary of a remarkable work by one of the first RSA Fellows; charity, because they are donating the book to all Finnish libraries; and the ideals of 21st century enlightenment, using this work to inspire us to rethink our society and economy. It is hoped that this project will help in the pair's mission to broaden Finland's access to information and ideas.

NEWS IN BRIEF

2015 AGM

The next AGM will be held on 6 October 2015 at 5pm in the Great Room at John Adam Street.

AWARDS

The *RSA Journal* has won Gold in the 'Illustration' category for the 2015 Summit Creative Awards. The international awards attracted more than 5,000 entries from 23 countries, with each award judged blind so that entries could be assessed on their own merits.

PREVIEW



THE FUTURE OF GOOD FINANCE

How accountable is the banking industry now? One of *Time* and *Foreign Policy* magazine's 100 most influential people in the world, Anat Admati, professor of finance and economics at Stanford University, thinks the financial system still needs a radical review to ensure it doesn't harm society.

Where: RSA

When: Thursday

10 September at 1pm



THE FUTURE OF CAPITALISM

How can we create a more stable and fair economy? Channel 4's economics editor, Paul Mason, shows how, from the ashes of the recent financial crisis, we have the chance to create a more socially just and sustainable global economy.

Where: RSA

When: Thursday

17 September at 1pm



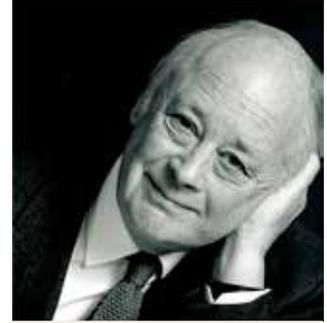
THE POWER OF DESIGN THINKING

In this special event to celebrate the launch of the 2015/16 RSA Student Design Award briefs, we are joined by award-winning designer Ben Terrett. Ben is director of design at the Government Information Service, where he leads a multidisciplinary design team working across government on GOV.UK.

Where: RSA

When: Wednesday

23 September at 6pm



REINVENTING SOCIETY

What can we do about the world we live in? Leading global thinker Charles Handy asks whether capitalism in its current incarnation is a sustainable system, and what the aims of an ideal society of the future should be.

Where: RSA

When: Thursday

15 October at 1pm

Events and RSA Animate producer Abi Stephenson has selected the highlights above from a large number of public events in the RSA's programme. For full event listings and free audio and video downloads, please visit www.thersa.org/events

FOR HIGHLIGHTS OF RECENT EVENTS, SEE PAGE 49

MEASURE OF SUCCESS

It's time to judge our economy on a scale that puts humanity at its core

by Rowan Conway

It is often said that financial markets do not like uncertainty. Indeed, for nearly 20 years prior to the 2008 crash, markets became so accustomed to predictability (low inflation, stable growth and low volatility) that it became the norm. But since the economic crisis seven years ago, western nations have been locked in triage mode: working tirelessly to restore their wounded economies to pre-crash health. Market stimulation, quantitative easing and austerity have returned many economies (with some notable exceptions) to a position of slow growth, providing the markets with a semblance of the stability they crave.

But in the rush to restore economic equilibrium, it seems that the real issues of our time have been cast out to the margins of public debate. The effects of disruptive technology, seismic income and wealth disparity, climate change and resource scarcity have all remained conspicuous in their absence from political dialogue.

To think that we can restore the economic conditions of the pre-crash era through managerial competence alone is to ignore the bald facts about the fragmented and complex world we now live in: the global population is now more than seven billion and keeps rising; life expectancy in major western nations has increased dramatically; income and wealth disparity has grown to record levels; greenhouse gas emissions continue to rise apace; and technology is now enabling a 'second machine age' that is redefining work as we know it. Knowing this, is it really possible to be fit for our economic future while managing it with 20th-century tools?

CHALLENGING ORTHODOXIES

The dominant economic orthodoxy of the past 20 years is that economic growth, with its associated house price inflation, buoyant financial markets, rising consumer demand and productivity growth can provide for all society's needs. But this 'growth solves all problems' discourse is now under attack.

Those in the 'wellbeing' camp believe prosperity must be about more

ROWAN CONWAY
IS DIRECTOR OF
RESEARCH AND
INNOVATION AT
THE RSA

than fiscal growth. It was driven with great fervour in the UK by the prime minister, David Cameron, who set a goal during in his first term of formulating policy "focused not just on the bottom line, but on all those things that make life worthwhile". In 2010, the Sarkozy Commission considered an array of alternatives to GDP, and its findings prompted a flurry of new measures to assess national wellbeing in the UK, Germany, Italy, Australia, South Korea, Canada and the US. While providing interesting data, 'gross national happiness' has yet to topple GDP as the driver of these nations' economies.

Alongside it, the environmental movement broadly asserts that there are finite limits to growth. The overarching premise is that the 'take, make, waste' model of a high-growth, consumer-driven economy does not consider these limits. Without bold action from governments and business in rethinking the economic system, society will fail to combat the impending environmental crises of resource scarcity, biodiversity loss, pollution and climate change.

Most recently, a wave of criticism from economists and academics alike has brought inequality to the fore. Thomas Piketty and Joseph Stiglitz have highlighted the burgeoning scale of income and wealth disparity and argued that the capitalist system can only be sustained if it addresses the question of fairness. President Obama has been quick to seize on this narrative, perhaps recognising that it puts the basis of the American Dream to the test. However, the difficulty he and fellow global leaders face in forming an actionable response to these critiques is that the sum of their parts does not add up to a single viable alternative to the status quo. When our system of market capitalism has historically served us so well, imagining its evolution is incredibly challenging.

But what if we were to imagine an economic system that had the fostering of human flourishing at its core? Social justice, wellbeing, creative expression, lifting care's status, environmental sustainability: if these were our minimum success criteria, how would the economy change? If our economic system is to address the complex problems arising in the 21st century, we must put our collective creative minds



to the challenge of redirecting the traditional model of market capitalism to a more humane place.

The huge challenges facing tomorrow's society are already prompting a sharp rise in social innovation, a proliferation of new business models, such as B Corporations in the US, and a range of new ideas for systems, like the sharing economy. What comes out of this is highly unlikely to be a single managed system. Our economic evolution will be driven by a collective – but not necessarily coordinated – effort to co-design the kind of economy we want.

THE POWER OF IDEAS

At the RSA, we believe that society plays a vital role – through the power of ideas, discourse and democracy – in designing the systems of the future. Over the years, we have been part of a movement that seeks not only to boost the economy but also to improve society, recognising that the former would not inevitably deliver the latter. We want to engage in a deeper debate about the relationship between economic development and long-term human welfare in order to help facilitate the process of bringing to the mainstream those ideas that are currently seen as too radical for serious consideration.

We have initiated a programme that seeks to understand the conditions that will drive change. Beginning with the annual President's Lecture from Sir Tony Atkinson, professor

of economics at the Institute for New Economic Thinking at Oxford University, we have developed an economics-focused event series that will continue throughout 2015. Later this year, the RSA's Action and Research Centre will publish a range of reports and thinkpieces on new economic approaches, including a series of 'Power to Create' papers exploring the new economic tools that could foster mass creativity. The research team will also share the findings of our five-year study into community wellbeing 'The Value of Connected Communities'. In it, in partnership with the LSE and UCLAN, we have sought to understand the true value of social networks and their impact on community wellbeing. There will be an analysis of how our Great Recovery programme is driving design practice for the circular economy in business and, building on the work of last year's City Growth Commission, we will explore the social effects of city devolution, considering how this might go beyond the promotion of economic growth and foster social prosperity.

The RSA's programme is premised on the belief that we are at a moment of great potential for economic system evolution. Any serious attempt to address the challenges we all face in the future must seek to not only deepen understanding among economists and policymakers but also engage others in the debate about what it will take to succeed. We hope you will join us on the journey. ■

THE CREATIVE STATE

Innovation driven by the state could be the catalyst that takes our economy in the right direction

by Mariana Mazzucato

Countries around the world are seeking smart innovation-led growth. At the same time, there is rising concern that this growth needs to be both more inclusive and sustainable than in the past. Achieving these outcomes requires rethinking the role of both government and public policy in relation to the economy funding not just the rate of innovation but also envisioning its direction. Such an approach challenges our very notion of economic progress and the need for this to speak to wider social considerations than simply growth itself.

It requires a new justification of government intervention that goes beyond the usual one of fixing market failures. It means ensuring that our policymakers and their institutions have the ability and confidence to shape and create markets and for a more ‘inclusive’ notion of growth to more fairly distribute both risks and rewards.

Modern capitalism faces a number of great societal challenges, including climate change, youth unemployment, obesity, ageing and rising inequality. As the European Commission’s 2020 strategy demonstrates, these challenges have created a new agenda for innovation and growth policy that requires policymakers to ‘think big’ about what kinds of technologies and policies can fulfil visionary ambitions to make growth smarter, more inclusive and sustainable.

Although such challenges are not strictly technological – they also

require behavioural and systemic changes – they have much to learn from those mission-oriented feats that led human beings to put a man on the moon, or those that led to the emergence of new general-purpose technologies, ranging from the internet to bio- and nanotechnology.

Achieving such missions required companies that were willing and able to invest in long-run areas and a confident entrepreneurial state willing and able to take on the early, capital-intensive, high-risk areas, which the private sector tends to fear. The entrepreneurial state is one that is able and willing to invest in areas of extreme uncertainty, courageously envisioning the direction of change across public agencies and departments. Such a state must welcome, rather than fear, the high risk and uncertainty across the entire innovation chain, from basic research to commercialisation, and the experimentation processes required for organisational learning along the way. Most importantly, an entrepreneurial state must ‘think big’ in terms of the scale of the challenges it seeks to address, the innovations needed and the shift in direction aspired to.

Finding ways for governments to do this is not just about throwing public money at different activities. It requires a new economic framework that can justify the role of the public sector in directing change forming the right institutional structures that can foster and adapt to change in a dynamic way. This framework needs to be based on an understanding and justification of the potential catalytic role of government: its ability to transform landscapes, create and shape markets and not just fix them. Such an approach >>

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ENTREPRENEURIAL
STATE*



“EVERY TECHNOLOGY THAT MAKES THE IPHONE SMART – INTERNET, GPS, TOUCHSCREEN – WAS PUBLICLY FUNDED”

requires new indicators through which to evaluate public investments. It implies a very different approach to the organisation of government, and to the distribution of risks and rewards that emerge from the collective effort towards smart, innovation-led growth.

BEYOND MARKET FAILURES

Market failure theory (MFT) justifies public intervention in the economy only if it is geared towards fixing situations in which markets fail to efficiently allocate resources. This approach suggests that governments intervene to fix or compensate for markets by investing in areas with ‘public goods’ characteristics, such as basic research or drugs with little market potential, and by devising market mechanisms to internalise external costs like pollution or external benefits, like herd immunity.

While MFT provides interesting insights, it is at best useful for describing a steady-state scenario in which public policy aims to put patches on existing trajectories provided by markets. It is less useful when policy is needed to dynamically create and shape new markets. This means it is problematic for addressing innovation and societal challenges, because it cannot explain the kinds of transformative, catalytic, mission-oriented public investments that in the past created technologies and sectors that did not exist before (the internet, nanotech, biotech, cleantech and so on) and that the private sector feared. It was such mission-oriented investments that coordinated public and private initiatives, built new networks and drove the entire techno-economic process, resulting in the creation of new markets.

There are broadly four opportunities for changing innovation policy discourse, currently hampered by the limitations in MFT, which continues to guide policymaking today. These relate to directionality (‘picking’ broadly defined directions); evaluation (of public sector investments in terms of market making, not fixing); organisation (building the public organisations of the future that can welcome risks) and risks and rewards (making sure the rewards of public sector risk-taking are shared collectively).

First, MFT assumes that the state only fixes problems, with the ‘market’ setting the actual direction. In actuality, periods of transformative change have been deeply steered on both the supply and the demand side by visionary policy making. As I show in my book, *The Entrepreneurial State: Debunking public vs. private sector myths*, every technology that makes

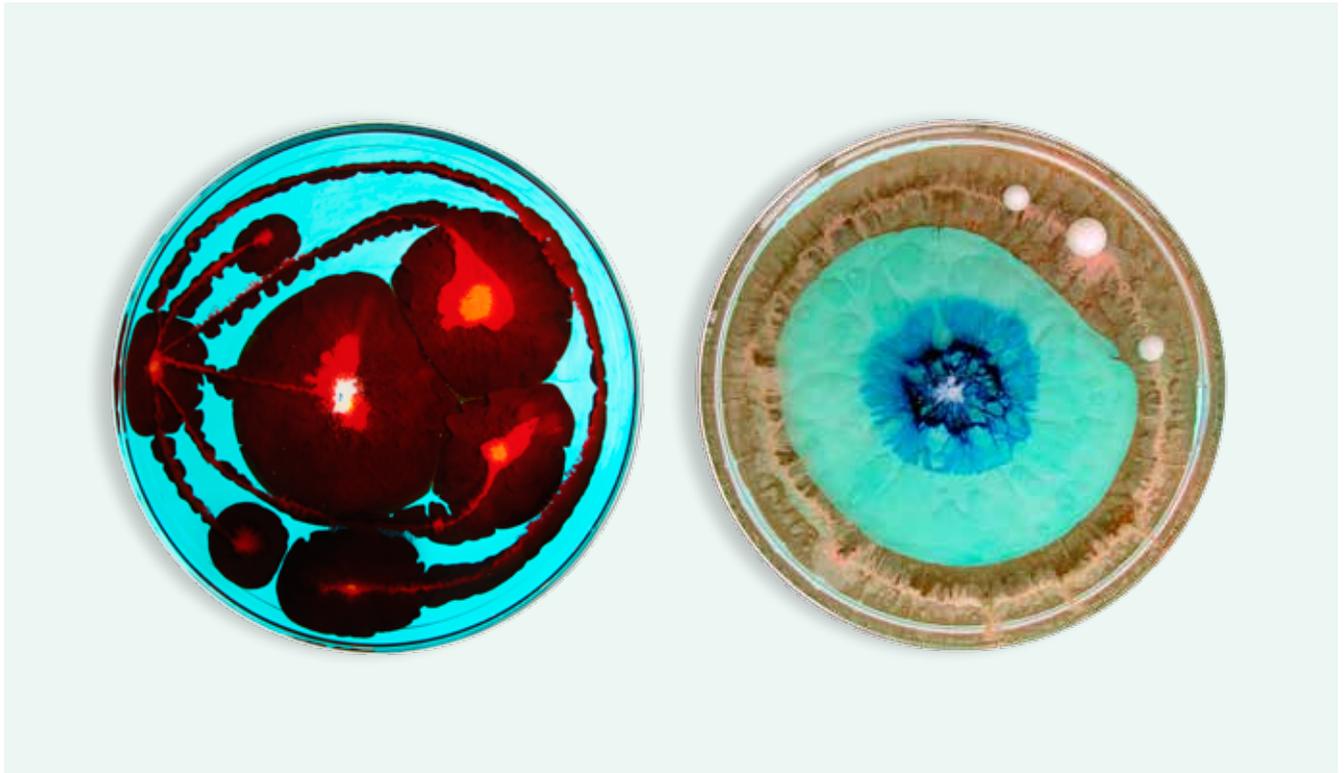
the iPhone ‘smart’ (internet, GPS, touch-screen display and Siri) was directly publicly funded. Public money has not only funded the actual technologies, such as mainframes, the internet, wind and solar power, and fuel cells, it has also created a network of decentralised public and private actors, provided early-stage funding to companies that risk-averse private finance would not, and devised special tax credits that favoured some activities more than others. These facts seem to point to a different analytical problem facing policymakers: not whether the right role is to intervene or to stand back, but understanding how particular directions and routes can be chosen and determining how to mobilise.

By ignoring this fact, we allow directions to be set without much debate. Shale gas, which was fully funded by the US government, is a case in point, considering the negative impact that the technology required to produce it (fracking) has on natural environments.

The importance of such a debate is absent in traditional economic policies, which aim to correct markets and assume that once the sources of the failure have been addressed, market forces will efficiently direct the economy to a path of growth and development. Yet, markets are ‘blind’ and the direction of change they provide often represents suboptimal outcomes from a societal point of view. This is why, in addressing societal challenges, states have had to lead the process and provide the direction towards new ‘techno-economic paradigms’, which do not emerge spontaneously from market forces. In the mass production revolution and the IT revolution, governments made direct mission-oriented investments in the technologies that enabled these revolutions to emerge and formulated bold policies that allowed them to be fully deployed throughout the economy.

The second opportunity is to address the limitations that MFT has in its ability to measure its transformational impact by developing more dynamic and less static evaluation metrics. MFT has developed concrete indicators and methods to evaluate government investments. These stem from the framework itself, usually through a cost-benefit analysis that estimates whether the benefits of public intervention compensate for the costs associated both with the market failure and the implementation of the policy, including ‘government failures’.

There is a mismatch, however, between the intrinsically dynamic character of economic development and the static tools used to evaluate policy; the diagnostic tools and



evaluation approach based on MFT involves identifying the sources of market failure and targeting policy interventions on their correction. This entails *ex-ante* considerations about administrative and fiscal requirements and the political-economic consequences of intervention.

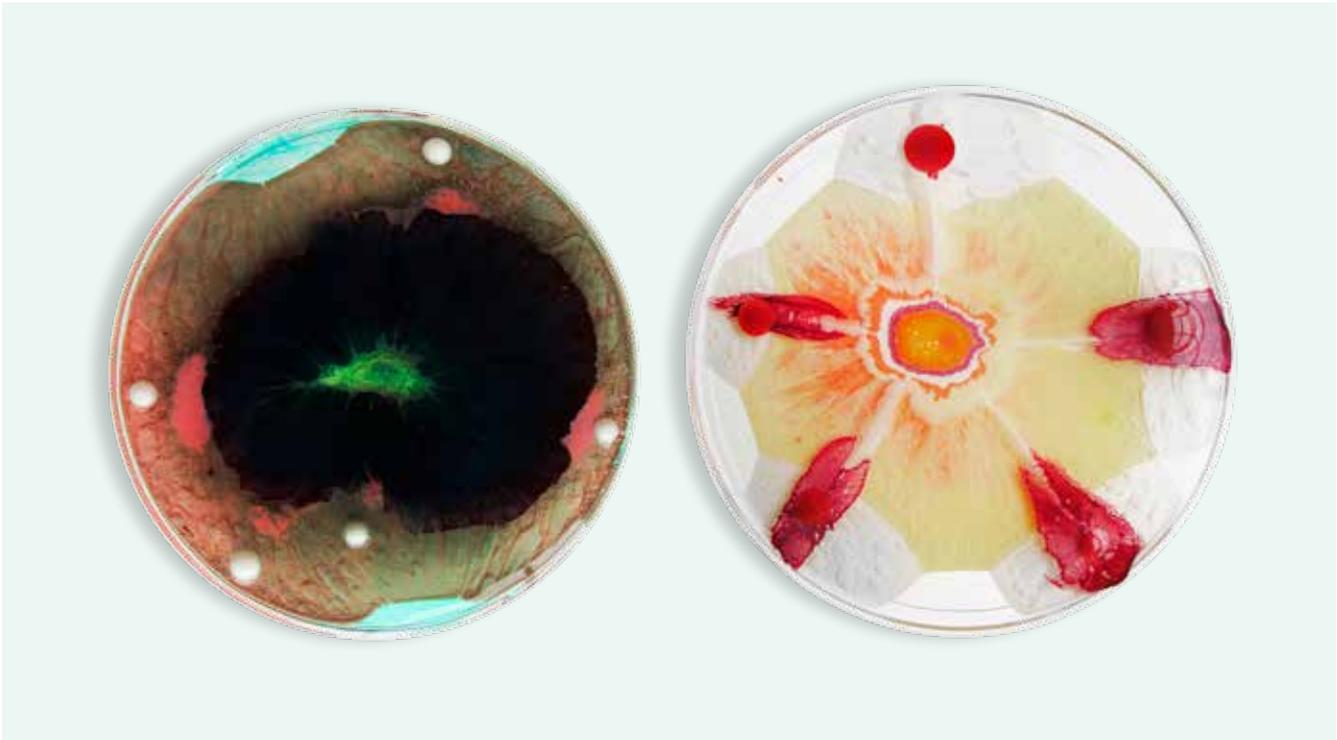
Such an exercise usually consists of a number of steps. Prior to any action taken, there will be a cost-benefit analysis that weighs up the costs of the failure, the (private and social) benefits that flow from addressing it, the costs and risks of government failure and an identification of the sources of market failures and of second-best policy tools to address them. This process then informs a diagnosis of the best “principal-agent” structure that avoids governmental capture by private interests (insulation/autonomy) and that forces private agents to do what the principal (government) wants. And, after changes have been implemented, there will be an evaluation of the outcomes of the intervention set against any quantifiable predictions made in relation to the likely outcomes of the intervention.

This is a limited toolbox. The nature of policy intervention and investment involved in addressing societal challenges are intrinsically dynamic, and this approach represents a static exercise of evaluation. By not allowing for the possibility that government can transform and create new landscapes, the ability to measure such impact has been affected, with economists often resorting to an analysis of the public sector as an inefficient private one.

This is evident not only in the area of innovation, but also for public services. This then leads to accusations of government ‘crowding out’ businesses, which implies that

those areas that government moves into could have been areas for business investment. Such accusations are at best defended through a ‘crowding in’ argument, which rests on showing how government investments create a larger pie of national output that can be shared between private and public investors, including savings to both. However, this defence does not capture the fact that the goal of public investments should be to not only ‘kickstart’ the economy but to choose directions that, as Keynes wrote, “do those things which at present are not done at all”. By not having indicators for such transformative action, the market failure toolbox affects governments’ ability to know when it is simply operating in existing spaces or making new things happen that would not have happened otherwise. This often leads to investments that are too narrow or directed within the confines of the boundaries set by business practices of the prevailing technological paradigm.

The third opportunity presented by the weakness of MFT relates to the organisation of the state. Currently, the theory neglects the role that fear of failure has in limiting the capacity of public sector institutions to innovate through a process of learning, experimentation and self-discovery. At its most extreme, MFT calls for the state to intervene in the economy as little as possible, in a way that minimises the risk of ‘government failure’ (for example, crowding out, cronyism and corruption). This view requires a structure that insulates the public sector from the private sector (to avoid issues such as agency capture) and has resulted in a trend of ‘outsourcing’ that often rids government of the knowledge capacities and capabilities, such as around IT, that are necessary >>



for managing change. Studies have examined the influence of outsourcing on the ability of public institutions to attract top-level talent with the relevant knowledge and skills to manage transformative mission-oriented policies. Without such expertise, it will be difficult for the state to coordinate and provide direction to private actors when formulating and implementing policies that address societal challenges.

Indeed, there seems to be a self-fulfilling prophecy whereby the less ‘big thinking’ occurs in government, the less talent/expertise the public sector is able to attract, the less well it performs and the less ‘big thinking’ it is allowed to do. In order to promote transformation of the economy by shaping and creating technologies, sectors and markets, the state must organise itself so that it has the intelligence (policy capacity) to think, to be ambitious and to formulate bold policies. This does not mean it will always succeed. Indeed, the underlying uncertainty in the innovation process means the state will often fail. But if the emphasis is on the process of policymaking that can allow the public sector to envision and manage transformational change, then it is essential to understand the appropriate structures of public organisations, to allow them to become ‘learning’ organisations that welcome rather than fear the trial-and-error process underlying innovation.

The final opportunity a new framework should address is how to ensure a fairer distribution of both risks and rewards from the innovation process, developing more symbiotic private-public partnerships. MFT has little to say about cases where the state is the lead investor and risk taker in capitalist economies through ‘mission-oriented’ investments and policies. Having a vision of which way to drive an economy requires direct and indirect investment in particular areas,

not just creating the conditions for change. This requires crucial choices to be made, the fruits of which will create some winners but also many losers. Indeed, precisely because venture capital has become increasingly short-termist, with emphasis on an exit in three years (while innovation takes 15 to 20 years), publicly funded early-stage seed finance, such as SBIR funds in the US, has become increasingly important, as have guaranteed loans for innovative high-risk projects. For example, the Obama administration recently provided large guaranteed loans to two green-tech companies, Solyndra (\$500m) and Tesla Motors (\$465m). While the latter is often glorified as a success story, the former failed miserably and became the latest example, used widely by both economists and the more popular treatment in the media, of government being unable to ‘pick winners’. Indeed, the taxpayer picked up the bill and complained.

This highlights the need to build a theoretical framework that can help the public sector understand its choices across a broad portfolio – offsetting the inherent risks of innovation by diversifying its investments to enable the rewards of the successes to cover the losses of the many inevitable failures – and how to therefore socialise not only the risks of those investments but also the rewards. In building a portfolio, it is crucial to make sure that the assumptions regarding the distribution of returns, as well as their measurement, are guided by a real understanding of the fundamental uncertainty that drives the innovation process and the broad nature of social returns. The risk-reward question comes down to whether, in an MFT framework, government deserves to retain a direct share of the profits generated from the growth that it fosters.

Is it right that US taxpayers shouldered the Solyndra loss, yet made nothing from the Tesla profits? Or, put another way, are taxes currently bringing back enough returns to government budgets to fund high-risk investments that will probably fail? It is well known that companies that benefit greatly from government investments have been successful in avoiding tax. Google, whose algorithm was funded by the National Science Foundation, has been criticised for such avoidance, as have Apple, Amazon and a host of ‘new economy’ companies. But even if they were not avoiding tax, tax rates, such as that on capital gains, have been falling due to the narrative that it is a narrow set of agents who are the real innovators, wealth creators and risk takers. It is indeed this same narrative that has justified the increasing financialisation of the private sector, with many large companies in IT, energy and pharmaceuticals spending more of their returns on share buybacks than on research and development, a dynamic that William Lazonick has shown to hurt sustainable and smart growth. Only when this limited and biased wealth creation narrative is debunked can we begin to build more symbiotic innovation eco-systems that can ensure future funding by both public and private actors.

NEW FRAMEWORK, NEW QUESTIONS

The economy of 2030 and beyond requires an entrepreneurial state to boldly look ahead and set the direction of change rather than timidly creating the conditions and levelling the playing field, allowing markets to set directions for us.

The solutions derived from MFT, such as downsizing the state apparatus, promoting market-based mechanisms to counter market failures and insulating public agencies from the private sector, might hold for steady-state situations, but not for the situations in which public policy is required for transformation, such as those witnessed through the technological and socio-economic missions of the past. They are not fit for purpose.

This is not about prescribing specific technologies but providing directions of change that bottom-up solutions can then experiment with. My colleague in the Science Policy Research Unit at the University of Sussex, Professor Andy Stirling, puts it well: “The more demanding the challenges for innovation (like poverty, ill health or environmental damage), the greater becomes the importance of effective policy. These challenges of innovation policy go well beyond simplistic notions of governments trying to “pick winners”...This is about culturing the most fruitfully cross-fertilising conditions across society as a whole, for collectively seeding and selecting across many alternative possibilities and together nurturing the most potentially fruitful. This involves collaboratively deliberating, negotiating and constructing what ‘winning’ even means, not just how best to achieve it.”

“MARKETS ARE ‘BLIND’ AND THE DIRECTION OF CHANGE THEY PROVIDE OFTEN REPRESENTS SUBOPTIMAL OUTCOMES FROM A SOCIETAL POINT OF VIEW”

It is, of course, important not to romanticise the state’s capacity. The state can leverage a massive national social network of knowledge and business acumen, but we must make sure its power is controlled and directed through a variety of accountability measures and diverse democratic processes. However, when organised effectively, the state’s visible hand is firm but not heavy, providing the vision and the dynamic push (as well as some ‘nudges’) to make things happen that otherwise would not have. Such actions are meant to increase the courage of private business. This requires understanding the state as neither a meddler nor a simple facilitator of economic growth. It is a key partner of the private sector – and often a more daring one, willing to take the risks that business won’t. The state cannot and should not bow down easily to interest groups that approach it for handouts, rents and unnecessary privileges like tax cuts. It should seek instead for those groups to work dynamically with it, doing things they would not have done otherwise and setting a direction of change. Today, such change could be driven by the mission for ‘green innovation-led growth’. In the same way that putting a man on the moon required many sectors to interact, the green direction being debated today requires all sectors to change. As Carlota Perez has emphasised, green is not only about wind, solar and biofuels, but also about new engines, new maintenance systems, new collaborative sharing economies and new ways of thinking about product obsolescence.

But this requires investment, and all the evidence shows that the kind of patient, long-term finance needed comes from state investment. In the UK, the next five years look set to be dominated by a continued focus on austerity and a politically inspired – and economically illiterate – drive to run a continual budget surplus. If we want to see real long-term growth in 2030, we need to understand the state’s critical role in creating and shaping the new markets of tomorrow. The successful economies of 2030 are already making that investment today. ■

■ Find further writing on this at www.marianamazucato.com



ILLUSTRATION: YIPPIEHY

BEING HUMAN

Political strategist Steve Hilton and Matthew Taylor discuss how we can build institutions while keeping hold of our humanity

MATTHEW TAYLOR: We have done more to alleviate poverty in the past ten years than ever before in history, and people are living longer. So, do you think that the world is getting worse and that we need to do something about it? Or is it getting better and you are just encouraging us to go a little bit faster along that route?

STEVE HILTON: The world is getting worse. There are things that we can all be happy about, in terms of people moving out of poverty and so on. But I think that generally speaking, daily experience is becoming dehumanised in different ways.

TAYLOR: I have no difficulty with an argument that says that what matters is not human nature so much as the structures in which we find ourselves. This isn't about good guys and bad guys; it is about the way that the systems affect us. But what is your theory about human nature that underpins your belief in the importance of making things 'more human'?

HILTON: Generally, I think people want to be kind and treat others in a decent way. When you end up in a system that gets too big and bureaucratic and removed from that, people are unable to behave in a 'human' way. The systems do not allow them to do that. You see this in ways that you might consider to be relatively trivial. In business, for example, where you might encounter someone on the other side of the desk and it's a classic 'computer says no' issue. They want to understand your personal situation and respond to you in a human way and say 'Yes, it's fine, you can do this', but the system won't allow them. The computer won't allow them to make that exception or use their discretion.

Then you see it in bigger ways with chief executives, where the incentives around them, the pressures from the various people and organisations, mean that they can't behave in a decent way. They make decisions that end up being dehumanising. An example is Amazon, where people

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in the distribution centres are fitted with personal 'satnavs' so that they can be tracked to make sure that they are as efficient as possible. This includes tracking them to make sure that they use the correct toilet. If they use a toilet that is not optimal in terms of efficiency, then they are reprimanded. Now, I do not believe that faced with a person who had used the wrong toilet, Jeff Bezos [Amazon's CEO] would say anything, because it's just so weird. But it is a consequence of the system that has been built.

At the same time, this is not just a simplistic 'small is beautiful, big is bad' argument. For many things, scale is good and we should be happy to see things grow to a certain size and we shouldn't have a view as to what is too big or too small, generally speaking. The question is, 'Is it human?' I think the challenge for businesses is how do you combine scale with being human? But I think the impulse should be towards how we reduce the scale and allow decisions to be taken closer to the people affected by them.

TAYLOR: That takes me to this question of new power and old power; service design versus traditional policy making; social enterprise versus old-fashioned corporations and bureaucracy; people in jeans versus people in suits; impact hubs versus town halls. Isn't one of the challenges about how concretely you can combine the best of those two cultures?

HILTON: In terms of the government's accounting system, it is difficult to invest in the things that a 'human' perspective would make priorities. You know: early intervention, families, infrastructure, all these things that we know would improve the human experience. That is why when you have those arguments with the Treasury over how to spend money upstream (even though everyone agrees that spending money on certain things will pay off in the long run), it is not allowed because of the way the financial model works.

Then you move into thinking, well, given the structure of government that we have and how centralised things are in the UK, how can we improve policymaking? And I think there, you can have the human perspective totally >>

“THERE IS NO REASON WHY YOU CANNOT CHANGE POLICYMAKING TO MAKE IT MORE IN LINE WITH HUMAN-CENTRED DESIGN APPROACH”

consistently applied. There is no reason why you cannot change the process of policymaking to make it more in line with the human-centred design approach. You could require, as a matter of process, that ministers and officials advisers spend time with the people they are designing policy for, and that you do prototyping and testing.

But even if you did that, due to the degree of centralisation in this country, you would still be struggling to design services and implement them in a way that reflected human need. It is almost impossible to get a sense of that for the whole country, or even within a local authority. I think local councils are too far removed. The average population for the lowest tier of executive government is 160,000, which is huge. In France, it's 1,500. So even a London borough is totally removed from the

realities of people's lives. Even if you brought in processes and improvements along the lines that I've discussed, you'd still be missing out on making policy and services really meet the needs of individual people and families.

TAYLOR: Your ideas are deeply radical. Take schools, where you envisage a system in which there is no national framework for schooling, there are just communities coming together creating schools and all the state would do is fund that system. How do you get from here to there? What is actually going to be involved in saying to this enormous panoply of Ofsted inspection, control and intervention, 'We don't need you'? That is so far off the scale of political possibility.

HILTON: Well, it is the only way that you're going to get the kind of transformational improvement that we need to see. Of course, it is possible to squeeze better results out of the old system. I'm not saying it's impossible to get improvements using that centralised factory method that we have been using for 100 years. But I don't see that it's going to deliver the kind of education that is really needed in order for individuals and the country generally to thrive in the next 100 years. So we have a choice; I would just say let's do it.

TAYLOR: The question is, how do we get from A to Z, recognising that we're going to have to go through all the other letters to get there? In your book, you describe A, which is a bit rubbish. And you describe Z, which would be absolutely wonderful. But then it seems it is almost not your business to help us understand the B to Y part of that process. It's clear that there were quite a few things that you wanted to change while you were in government that you didn't. Do you think that B to Y is not what you're best at? That it's not what enthruses you?

HILTON: This is the wrong way of thinking about it. The B to Y is a very good analogy; in this case, B to Y is simple. For example, when it comes to education, there is a very simple structural change to be made: allow school operators to make a profit. That was something that we were committed to, but

FELLOWSHIP IN ACTION

ENERGISING COMMUNITIES

Energy Local is a social enterprise looking to develop a community-based market model for local energy. The project hopes to enable communities to manage local demand, reduce bills and cut carbon emissions, and recently received £7,000 in Catalyst funding to help in its mission.

A trained physicist and engineer, director Mary Gillie believes this model can tackle two key problems. "When a community gets together to buy renewable generation, they often have to sell it to a supplier at 5p/kWh and buy it back at 14p/kWh. So the income isn't retained within the community," Gillie explains. "The other side to it is that people aren't rewarded for moving their power usage around to times when it's cheaper."

By employing smart meters, a new market model and a home energy management system that spreads generation across communities, Mary hopes to provide solutions while encouraging social cohesion. "It's about saving the consumer money, but also retaining more of that money within your locality," she says.

Find out more at www.energylocal.co.uk



that the Liberal Democrats blocked. I think that is the way to do it, because that will enable alternative, progressive, innovative types of education to flourish.

TAYLOR: Personally, I don't think there's any reason why private sector cannot provide any public services. But that isn't the issue in schools really; I don't think the question is governance, it is that they are utterly obsessed by their regulator.

HILTON: It is about scale in the sense of numbers, and I am talking about a massively increased range of options. That itself makes it harder to control. There's a really interesting piece by Charles Murray about regulation, saying that there is a limit to what government agencies and bureaucrats can do, because they can't be everywhere at once. Nowhere has ever implemented the kind of school choice that I'm talking about; 20, 30, 40 schools in your neighbourhood, some very small, some in people's back gardens and so on. There comes a point when bureaucracy just can't constrain that kind of innovation. The structural change that would make it easy for anyone to start a school, is, I think, the key change. On the issue of Ofsted, Oliver Letwin and I had a phrase: "From bureaucratic accountability to democratic accountability." Obviously you need accountability; there needs to be some level of assurance for people, it can't be a free-for-all. But the question is, how do you deliver that?

TAYLOR: This comes down to a quite complex issue of policy design. How do you design a system with the right amount of regulation in the right kinds of areas? I think one has to be willing to engage with those drier issues as well as having a vision of where you want to get to.

HILTON: I am. But this is about starting a debate. It is not saying, 'Here are all the answers'. Step one is, do we agree

that this is the direction we need to move in? If yes, then great. Let us now look at what that world might look like. What are the details? We've got to have some general principles about what kind of system we want. What kind of system of accountability; that general disposition towards something that is democratic, not bureaucratic. When you say I'm not interested in B to Y, well, in fact it is the opposite. A lot of my biggest battles and arguments were exactly because I was getting involved in B to Y, because that is where it really gets tricky. That is when you really start to see how disruptive these kinds of changes could be.

TAYLOR: One problem is that sometimes service designers don't take the time to understand the political realities that people face when they run large organisations; the challenges of public accountability, the challenges of hostile press surveillance, the challenges of building coalitions of support. They come in as if people can just make wonderful decisions overnight without being constrained in all these ways. And that is my criticism of people like you and me. We are great on the vision but do we really have the patience, the time and the application to think about – given what is involved in having authority – how it is you help those people and stand by them so that they can achieve the changes we advocate?

HILTON: This is a reasonable point. We shouldn't overstate it, though, because there is room for leadership and just saying we're going to do it because we're confident in the results that will happen. It is a spectrum, and I think we mustn't let it go too far the other way. That is a recipe for paralysis and no change. So, I don't disagree, but I would be cautious about letting that be the only excuse for things not happening. ■

■ Steve Hilton's book *More Human: Designing a World Where People Come First* is out now, available from Ebury Publishing.

BROKEN INSTRUMENTS

Transforming our dysfunctional financial system for the better will mean getting over our fear of its complexity

by Jennifer Morgan and Chris Hewett

Cast your mind back to 2008. We sat at the table, poured our morning coffee and read the headlines: “Banks hit by \$5.9bn fine for foreign exchange rigging.” A few weeks before it had been “Deutsche Bank fined £1.7bn for LIBOR failings and misleading the regulator”. And before that, “HSBC bosses very ashamed and humbled as bank faces criminal probe threat over its tax dodging”. We were surprised, yet not surprised, as to how quickly this news came and went. By lunchtime, the headlines were usually off the front page of websites and caused little in the way of political comment. In fact, in spite of the huge impact of the 2008 financial crisis, we seem to have accepted this dysfunctional financial system as a force of nature, rather than a market shaped by human values and intention.

Finance is a complex system. One of the reasons it has not been dramatically reformed since the crash is that its very complexity has made it hard to sustain public discourse. Citizens, politicians, journalists, civil society and most people who work in the financial services sector – apart from the few who have exploited it – are intimidated by this complexity. As a result, we feel ill equipped to advance the sort of systemic solutions that are required. But in order to create an economy that will enable us all to flourish, it is essential that we understand the truth: that we are all part of an interconnected financial system. Embracing this can empower us to take new and diverse approaches to change that will lead towards a financial system that is democratic, responsible and fair.

To do this, we need an appetite to deal with the root causes of this serious dysfunction. That requires new, long-term and systemic approaches to change; fresh approaches that the Finance Innovation Lab and a growing

number of organisations are pioneering. Established in 2008, we empower positive disruptors who are enabling a democratic, responsible and fair financial system. We work at multiple levels to connect people who seek to change the financial system, such as innovators and entrepreneurs, civil society advocates and ‘intrapreneurs’ within their own organisations. Our approach draws heavily on systems thinking, complexity science, values-based leadership and action learning.

UNDERSTANDING COMPLEXITY

It is understandable that our society, our government and UK plc have failed to transform the financial system. For the most part, we are trying to fix a problem with mindsets and strategies that aren’t fit for the job. We have commonly seen the finance system through a mechanistic lens of solid hierarchical structures, with efficient intermediaries that maximise financial returns. And, similar to a mechanic, we think we can ‘fix’ the machine with the existing tools in our toolbox. Common tools proposed include ‘getting the regulation right’ or ‘encouraging challenger banks and letting competition and the market do the rest’. But time and time again, we find ourselves trying to deal with the neverending breakdowns and broken parts.

Many of us are now starting to wake up to the reality that we are working with a complex and dynamic system rather than a machine, and that responses need to be designed accordingly. Andy Haldane, chief economist at the Bank of England, has been a pioneer in helping to reframe how we see finance. In a recent speech at the Lorentz Conference on Social Economic Complexity, he said: “Modern economic and financial systems are perhaps better characterised as a complex, adaptive ‘system of systems’. Global economic and financial systems comprise a nested set of sub-systems, each one themselves a complex web. Understanding these complex sub-systems, and their interaction, is crucial for effective systemic risk monitoring and management.”

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“THE PREDOMINANT PURPOSE OF THE FINANCIAL SYSTEM HAS BECOME SELF-SERVING”

So what exactly is a complex system? Complex systems, such as social and natural systems, all have their own unique intention and purpose. They are dynamic and formed by relationships. They are emergent and unpredictable. They are non-linear and the whole often behaves very differently to the sum of its parts. They have many feedback loops and information flows around the system. They are adaptive, constantly learning and evolving.

PURPOSE, VALUES, POWER

How can we best catalyse change in complex systems like the UK financial system? In her seminal thinkpiece, ‘Leverage Points: Places to Intervene in a System’, Donella Meadows, systems thinker, futurist and author of *Limits to Growth*, maps 12 ways to catalyse change in complex systems. The most influential leverage points include: tackling root issues such as purpose and values, shifting power dynamics; changing the structure of the system such as the rules and standards; and opening the feedback loops of information.

How does looking at finance through the lens of complex systems shed new light on the challenges we face? First, the predominant purpose of the finance system has become self-serving rather than serving ‘the whole’ (that’s us and our environment). There has been little meaningful conversation about the purpose of the financial system, either in its current form or its aspirations. It presents itself as a sector that is maximising profits for the UK economy. But others might feel it should primarily serve the needs of the rest of the economy and society. Before we start redesigning the system, we need to ask this question about purpose.

Second, our current financial system is underpinned by values and cultures that are extrinsically motivated, such as competition, hedonism and conservation. Research from the Public Interest Research Centre shows that these values are less open to change and reinforce individualism. Yet as our economies and societies become more interconnected, we need our institutions to display values that are intrinsically motivated, such as kindness, creativity and responsibility. So a pertinent question becomes, how do we cultivate a system that promotes intrinsically motivated values?

Third, the system is controlled by a powerful minority that holds vested interests and is not accessible to those who have an

interest in creating a more human-centred financial system. The finance sector is the biggest UK lobbyist in the EU. This powerful force is holding the existing system in place. It is preventing more radical and deep-rooted change from emerging. We need a new enabling power that serves society and the environment.

A HUMAN-FOCUSED SYSTEM

In 2008, society’s anger at the consequences and causes of the financial crash was given a powerful voice by the Occupy movement. This discontent resonated across whole swathes of the UK. But it was missing any kind of strategic and systemic approach for creating the long-term enabling conditions for change. With no real strategy in place, any kind of public dialogue over the future of the finance system was quickly swamped by the complexity that served to keep the vast majority of fearful policymakers, public and media disconnected from the system and thus unable to see how change could happen.

Since then, however, there has been a surge of enthusiasm from outside the traditional finance sector, partly spurred by new technology, that has sought to deliver some financial services in a way that is more connected to people. Peer-to-peer lending, crowdfunding and values-based banks have flourished where the high-street banks have continued to stagnate. New products, such as climate bonds, have been developed to stimulate long-term investment in socially and environmentally useful projects, such as sustainable energy infrastructure.

At the same time, civil society groups such as the Finance Innovation Lab, ShareAction, New Economics Foundation and Positive Money have been quietly co-creating a vision of a finance system that is democratic, responsible and fair. This vision has four leverage points for change.

First, a banking system that has a diversity of business models, offering more genuine and fair competition for savings, business loans, mortgages, payments and support in financial management. The globally focused, shareholder-owned high street banks have failed to deliver this. We need more mutuals, credit unions, innovations in payments, locally focused banks, peer-to-peer lending and other creative ways of providing these services.

Second, an investment and capital market that is shaped by the long-term interests of savers, from whom most of the capital originates, in the form of pension funds, insurance or other savings. Our policy framework must reward long-termism, transparency and valuation of social and environmental risks. It should, correspondingly, penalise excessive speculation, extraction of rent through hidden fees and a discounting of long-term risks like climate change.



Third, a system of monetary policy intervention that takes fully into account the social, environmental and economic consequences of those decisions. This would require that we move away from seeing monetary policy as a technocratic activity free from ‘interference’ from politicians, towards one where there is real public and democratic debate and oversight of the use of such tools.

And lastly, active encouragement for innovation and creativity in financial services that increases accessibility and transparency, provides benefit to the whole economy and is socially useful. This will require regulation to be more flexible, with fewer barriers to entry, but will also place the responsibility on innovators to prove their worth to the rest of us.

This transformed finance system should have an explicit purpose to serve society, the environment and the wider economy. This will require leadership from government and, within finance institutions themselves, a rediscovery of the ‘service’ in financial services. We must not continue to see the sector as an ‘industry’ whose profits are a key driver of the UK economy. Research from the OECD has shown that economies where finance is a high proportion of GDP show slower total economic growth and higher levels of inequality. Too much finance can be bad for a nation’s economy and society.

The values of its participants will need to reflect that new purpose, both as an explicit intention and in response to market and policy pressures. Competition will increase from innovators who are not afraid to use greater transparency as a means to attract market share and reduce costs to consumers, rather than as something to withhold in order to protect profits and create barriers to entry. Those who cling to the latter will look increasingly outdated and irrelevant.

A more diverse ecosystem of market players will also help to dilute the power of vested interests to shape policy in their favour. One of the roles that the Finance Innovation Lab has played is to bring innovators together with policymakers, in order to build trusting relationships and host in-depth conversations about creating a more diverse market.

As part of our strategy, in 2012, we held a summit with peer-to-peer lenders, the Treasury, European Commission representatives and others to focus on why and how the new sector should be regulated. We have also held workshops with senior staff at the FCA and Bank of England, focusing on the needs of new business models and removing barriers to entry. All of this, combined with the work of many others, has resulted in new regulation for crowdfunding and other models of financial disintermediation, building the market for democratic finance.

ACCELERATING CHANGE

Changing complex systems is a long-term game and we need to build our change strategies to reflect this context. The Finance Innovation Lab has established the infrastructure for systems change that will enable collective impact at multiple levels in the financial system. This infrastructure allows for the ongoing experimentation and practical application of new approaches, builds capacities and cultures of creativity, learning and evolving, and cultivates strong communities of influence.

What we have learned in the Lab is that there is no one solution and that change takes time. This is especially true when working with deep-rooted issues of purpose, values and power. Multiple approaches are needed, including amplifying a narrative for finance, evolving approaches of current mainstream practices, advocating for structural reform and cultivating the niches of positive disruptors who are all actively working towards ‘repurposing finance’.

Ultimately, we are all part of the financial system. There is no system ‘out there’, separate from us. How we choose to relate to money and our finances will directly influence how effectively we can scale change beyond ourselves. Will we choose for finance to be an enabler of a human-purposed economy, or will we choose for finance to remain the dominant force in a self-serving economy? Seven years after the start of the crisis, with banking scandals still hitting the headlines, there is no better time to make your choice. ■

A SOCIAL CAPITALISM

Our current financial system is failing. It's time to overturn corporate capitalism and let community systems flourish in its place

by Gar Alperovitz

Not so very long ago, it seemed that the system question had largely been settled. The fall of the Berlin Wall and collapse of the Soviet Union, together with the promise of a new digital economy, were taken to spell not just the end of history but the end of the political economy as well. Liberal capitalism appeared as near-universally triumphant; the end-point and final destination of our collective human journey and endeavour. Certainly there remained a few bumps in the road, the need for some corrections to speculative over-enthusiasm and a means of tackling the environmental externalities that would have to be taken care of at some point. But, for most, the notion that the capitalist system itself was programmed at a fundamental level to produce social, economic and ecological outcomes antithetical to widely shared values and even to continued life on the planet seemed utterly alien.

No longer. Times have changed, and in profound ways. For many, the continuing build-up of long-running economic and ecological crises has put the idea that the system is broken squarely on the table. Faith in corporate capitalism as the best of all possible economic worlds simply could not be maintained after the global financial crash of 2007-2008. Klaus Schwab, founder and executive chairman of the World Economic Forum, opened the 2012 meeting of global elites at Davos with a statement claiming that “capitalism in its current form no longer fits the world around us”.

The mainstream business and economics press spent much of 2014 exploring economist Thomas Piketty’s surprise bestseller *Capital in the Twenty-First Century*, with its basic claim that capitalism was reverting to a fundamental and

pernicious trajectory towards ever-greater inequality. At the start of 2015, releasing a report with former UK chancellor Ed Balls, former US treasury secretary Larry Summers wrote, “The ability of free-market democracies to deliver widely shared increases in prosperity is in question as never before.” Just this summer, Pope Francis’s hard-hitting encyclical *Laudato Si* connected economic inequality to the accelerating climate change disaster, laying the blame squarely at the door of the economic system: “By itself, the market cannot guarantee integral human development and social inclusion [...] the present world system is certainly unsustainable.”

Poll data confirms this shifting zeitgeist. A 2015 YouGov poll revealed that only 39% of Americans between the ages of 18 and 29 have a favourable view of capitalism. Moreover, 36% of this same rising generation views socialism favourably; one explanation, perhaps, for the surprising traction of self-declared ‘democratic socialist’ senator Bernie Sanders in the early stages of the US Democratic presidential primary race. The ongoing stalemate and decay of the existing system is itself generating calls for something new.

But while the breakdown of the current system may now be on the table in a serious fashion, systemic solutions are not. Despite growing gestures in the direction of possible alternatives and an explosion of promising small-scale experiments, a real conversation – in the mainstream and not just at the margins – on the nature of a ‘next system’ has yet to take place. Only by presenting specific alternative possibilities are we likely to engender real responses at the level of systemic design rather than rhetorical critique.

The key question that needs to be asked – and answered – is this: if we acknowledge that our current system is broken, then what do we want instead? If corporate capitalism, to say nothing of the traditional state socialist model, >>

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appears unable to sustain equality, liberty and democracy, or to avert planetary disaster, what is the alternative?

It is profoundly difficult for any society to come to terms with systemic challenges. As a historian, I know that far-reaching ideas do not usually matter at most points in time. What matters is entrenched power. But we are in one of those exceptional moments in history when the old ideas are demonstrably failing at a time when new ones represent a very great source of potential power and political energy.

WHAT'S NEXT?

It is imperative to take a long-term perspective that sees beyond the daily churn and business cycles. From this vantage point we can discern powerful trajectories over the past half-century that are drivers of many of our problems: steadily increasing levels of CO₂ in the atmosphere and, in the US, UK and elsewhere, a steadily increasing share of wealth flowing to the very top of the 1% and a steadily declining share of income for the rest of us. While the drama of the Great Recession has helped bring this all into focus, the real problem is deeper and much more fundamental.

One of the most important trends in the US, as in much of the advanced industrial world, has been the decline of organised labour, especially in the private sector. This is problematic not just because of the well-documented correlation between falling union density and falling wages,

but because labour's function in the capitalist system in the mid-20th century was to provide what John Kenneth Galbraith called "countervailing power". If it was possible, for a few brief decades between the end of the Depression and Second World War and the onset of a new crisis in the 1970s, to believe in a corporate capitalism that would deliver progressively better outcomes for the majority of people, this was in no small part due to the labour movement at the time. It was capable of providing a bulwark against corporate power, serving as the engine of regulation and creating the space in which other movements (like those around race, gender and sexual inclusion) could operate successfully. With labour now in significant decline in most parts of the advanced world, the current system offers ever-decaying pushback to the corporate agenda.

It is also distressing to note fractures in the vision of an inclusive society constructed in the post-Second World War period. Nativist sentiments are on the rise in the US and Europe, with a sense of optimistic openness giving way to a fortress mentality and revived fears of 'the Other'. Essentially, the model for inclusion in corporate society, involving a perpetually expanding economy whose benefits could be managed and channelled through a social-democratic or liberal nation state, is breaking down. Instead, globalisation is sharply undercutting former certainty about a secure place in the economy.

An important date in the onset of this process in America was the shuttering of Youngstown Sheet and Tube in 1977, one of the first big steel mills to close in what would become known as the US Rust Belt. At the time, the prospect of such a closure – with all the harm it would inflict on a community whose fabric depended on the presence of a particular corporation – was quite unprecedented, a topic for the national news. Today, such dislocations have become commonplace, with predictable consequences. Entire cities have been thrown away and communities dissolved in a process that results, ultimately, in the atomisation of our relationships to each other. If we want to restore community as an essential precondition for democratic life, we must build an economy that recreates its foundations. The task is no longer merely seeking to temper capitalism but rather to transform or displace it.

THE CULTURE OF COMMUNITY

Central to the project of building a next system is the role of culture. Far too often, proponents of economic alternatives assume that new models will thrive on their technical merits alone. In some ways, this is a symptom of our faith in technocratic intervention: we are far more likely to suggest solving a social problem with a new app rather than undertake the difficult work of forging new social relations. A next system, however, will need genuine participation starting in the community and in the workplace, coming together (to use Raymond Williams' helpful term) in a larger 'structure of feeling'; one in which cooperation, solidarity and long-term shared interest acquire real meaning in everyday life. The great Jewish theologian Martin Buber emphasised this need to build from the bottom up: "An organic commonwealth [...] will never build itself up out of individuals but only out of small and ever smaller communities: a nation is a community to the degree that it is a community of communities."

To truly develop a culture of participation and cooperation requires time, in two important senses. First, we need the patience and commitment to do such work on a timescale measured in decades. This is a very hard thing to grasp in a culture without any real attention span, addicted to 'disruption' and quick fixes. More importantly, we need economic arrangements that allow people the free time necessary to perform the work of teaching themselves a new way of living together as neighbours and citizens. In many ways, our current system is programmed to do exactly the opposite: chipping away at evenings and weekends with ever more work, forcing people to take two or three or more precarious jobs to survive, while millions upon millions remain jobless. Reducing the time we must spend on work is a key requirement of a next system; not just because it will make people happier, reduce unemployment and lower ecological impact, but also because without such reductions there is little chance to lay the new foundation of community and citizenship required to sustain it.

“IT IS IMPERATIVE THAT WE BEGIN TO BUILD SYSTEMS THAT VALUE HUMAN LIFE”

Building a next system also requires reimagining the spatial relations of the economy. The current system is based on expansion. Unwilling to countenance the democratisation of the ownership of wealth, it instead looks to endless growth and expansion for what David Harvey has termed a 'spatial fix'. New markets are constantly required; a rising tide is supposed to lift all boats; the pie, in theory, is supposed to continuously expand so that slices become bigger instead of more evenly cut. The large private corporation, currently the dominant form of industrial organisation, financed through capital traded on public markets, is dependent upon growth in order to return profits to shareholders and fend off competitors.

All this, besides threatening ecological disaster on a finite planet, leads to various forms of de facto interventionist global policies when taken to its geopolitical conclusion, almost always via policies genuinely believed to further idealistic goals. It was coming to terms with the historic expansionist as well as 'idealist' reasons that ultimately resulted in the deployment of the atomic bomb against the civilians of Hiroshima and Nagasaki – the 70th anniversary of which we remember this August – that forced me to confront the hard edges of the system problem in my own historical research. It is imperative that we begin to build systems that, unlike both corporate capitalism and state socialism, value human life over and above a self-perpetuating need to claim increasingly large spheres of influence geopolitically.

Rather than the endless abstract space of expansion, the turn to a truly community-sustaining system requires a commitment to place. Democratising ownership does not just mean equalising citizens' bank balances, it also means developing the cooperative and community structures that anchor productive capital at the level most appropriate for each sector. In this regard, Catholic economic thought has stressed the useful principle of subsidiarity, whereby one addresses a problem at the lowest possible level, although without being afraid to tackle things at higher scales when necessary. The same lesson can be found in the work of E.F. Schumacher. Mostly remembered for the titular claim of his book that 'small is beautiful', many readers neglect to read all the way to the end, where Schumacher insists that the hyperlocal must be complemented by publicly owned enterprises at various scales: "When we come to large-scale enterprises, the idea of private ownership becomes an absurdity."

We need to invent new ways of building a relationship between place and the larger economy. Instead of nostalgia for lost villages of a prelapsarian agrarian past or the idealised small town 'main streets' that figure so >>

heavily in the American popular imagination, we need models for transition that build the same connections and spirit of cooperation, but are suited for life in a technologically advanced, highly productive industrial society alongside millions of our fellow citizens. New models that do so are, in fact, already in development in many parts of the US and around the world. The community land trust, for instance, carves out spaces of democratic control and permanent affordability in housing markets otherwise prey to local gentrification and speculative insanity. Participatory budgeting is beginning (albeit at a small scale and to a limited extent in most places) to explore how to rebuild a sense of democratic ownership of and control over public spending.

A particularly powerful US model is to be found in Cleveland, Ohio, in the form of the Evergreen Cooperatives, a geographically oriented network of worker-owned cooperatives linked together in a place-based non-profit structure that facilitates connections between the outputs of these firms and the purchasing needs of the large local 'anchors'; principally, non-profit universities and hospitals. This model provides democratised ownership in a community-sustaining form that creates needed jobs in poor, deeply disinvested communities of colour. The adjacent larger quasi-public institutions have a combined purchasing power of over \$3bn per annum, a part of which, directed to the

FELLOWSHIP IN ACTION PILLOW POWER

While working at Save the Children, Fritha Vincent learned that 80% of the world's children were living in institutions, mainly due to their parents being unable to feed, clothe and educate them. As a dedicated charity fundraiser and social entrepreneur, she couldn't sit back and accept this statistic. "I truly believe that if women were more empowered, this statistic would drop," she said.

So, just over 18 months ago, she set up the Secret Pillow Project, a social business that sells secret pillows (pillows that fold out into blankets) made by women in India on the international market. The project currently has around 200 producers working from Tamil Nadu, Kerala and Karnataka in southern India.

Crowdfunding has been integral to the project's initial success. "We did a Kickstarter campaign that raised £17,000, our current Crowdfunder project has met its £30,000 target and the RSA's Catalyst Fund supported us with £7,000," she said. Fritha's overall vision is "that women everywhere will one day have the confidence and resources they need to make decisions for themselves and their children".

■ To get involved, visit www.secretpillow.org.uk

"A CREDIBLE MODEL FOR A NEXT SYSTEM WILL NOT DEPEND ON A REVOLUTIONARY ALL-OR-NOTHING TRANSITION"

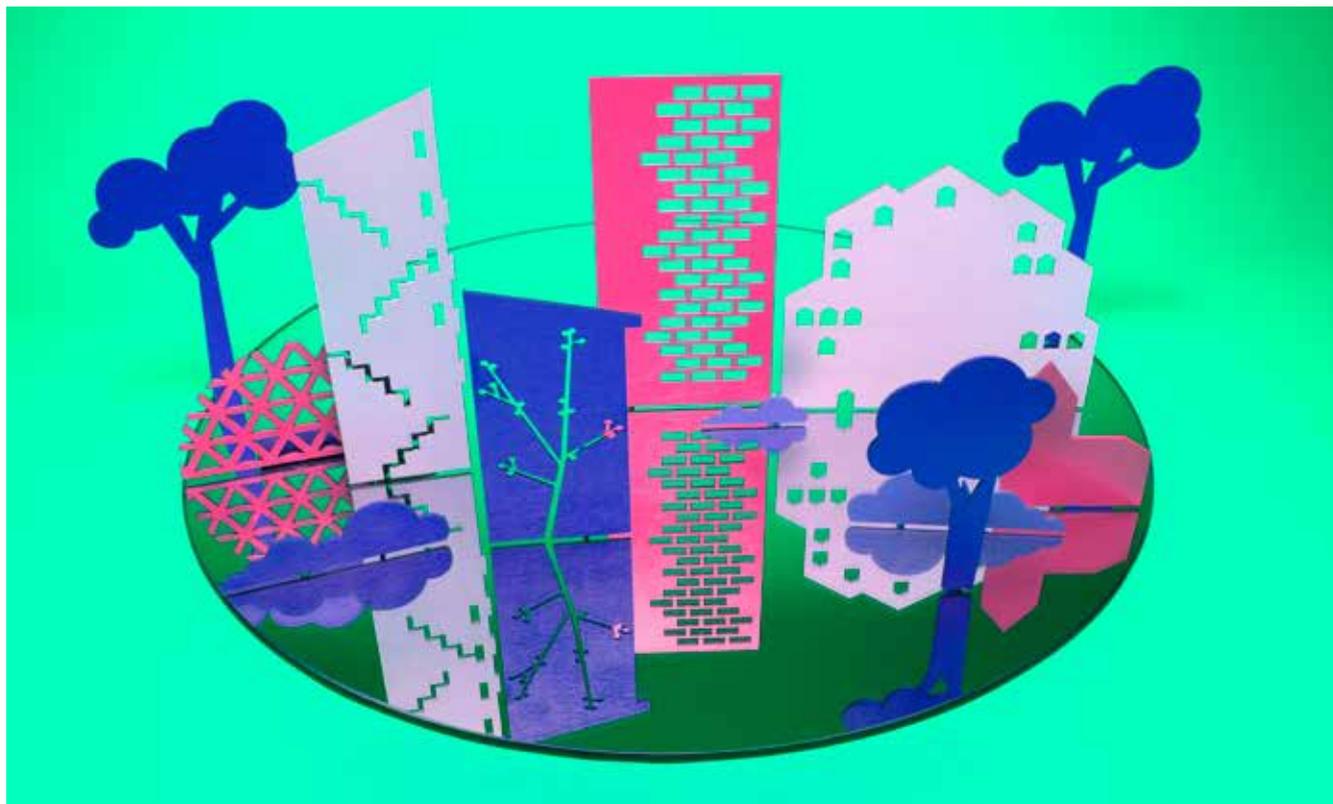
cooperative network, begins to articulate a form of place-based, decentralised economic planning.

By embedding community values into the flows of goods and services while maintaining the kind of efficiencies and checks on wasted resources that come with the pressures of (limited and circumscribed) competition, the Cleveland experiment represents the germ of something that's neither the straightjacket of the central bureaucracy nor the free-for-all of the supposedly unrestricted but largely corporate-dominated market. The point is to treat markets as one would treat fire, something that is very powerful but also very dangerous, a point the collapse of 2008 made perfectly clear. We need to design a system in which controlled burns replace catastrophic wildfires, in which the exchange of commodities facilitates the development of community, not its destruction. In our current system, exactly the opposite is true. As Karl Polanyi put it: "The running of society as an adjunct to the market [where] instead of economy being embedded in social relations, social relations are embedded in the economic system."

As we move to re-embed the economy in society and rebuild its ties to place, questions of geographic and demographic scale come to the forefront. Are there limits to the practice of real democracy at the scale of large nation-states? This question was implicit in the debate about the Scottish referendum and is lurking in the calls for Catalan independence. The continuing project of devolution points in the direction of smaller-scale regional decision-making units as a precondition for a revived popular sovereignty. This is equally, if not more, important in the US, a gargantuan nation of more than 300 million people on a continental scale: Germany could fit within the confines of the state of Montana, while the state of California would be, by itself, one of the ten largest economies in the world. In such a leviathan it is imperative to envision ways to decentralise decision-making if we are to preserve democratic control and accountability, however difficult such a transition may be politically and constitutionally.

MOVING FORWARD

Obviously, serious questions remain, highlighting the key role for research and experimentation. For example, experiments with participatory budgeting are encouraging but ultimately limited. We need much more work to develop robust participatory mechanisms not just for budgeting but also for democratic planning, especially at larger scales.



Other developing challenges underscore the importance of popular mobilisation to defend the spaces in which the next system might begin to unfold. For instance, the new generation of free-trade agreements threatens to strip away the ability to relocalise economies, with promising developments like that in Cleveland likely to be ruled illegal in unaccountable, corporate-dominated international courts. More fundamentally, the tremendous concentrations of wealth produced in the current system stack the political deck against the emergence of the new. In the US, it is estimated that the coming 2016 presidential election may involve campaign costs upwards of \$5bn, an astronomical sum.

But serious challenges should not be an excuse for inaction. Too often we have a vested interest in pessimism. After all, a conclusion that ‘nothing can be done’ absolves us of any need to seriously attempt to meet the challenges posed by our time in history. The next system is developing where opportunities to begin building it exist. In the US, with Washington deadlocked by partisan paralysis, there is far more space to move forward politically at the municipal level. New York City, for instance, has begun to fund worker cooperatives as an economic development strategy aimed at building wealth in low-income communities. In Boulder, Colorado, activists have successfully mobilised to begin the municipalisation of their electrical utility in order to transition to environmentally sustainable power. Local public banks are on the agenda in cities like Santa Fe and Philadelphia.

The various processes of local experimentation point towards a final important design feature of the next system:

pluralism. We must recognise that there are no magical single solutions to all the systemic problems we face; a credible model for a next system will not depend on a revolutionary all-or-nothing transition. Adopting a more pluralist vision helps us understand how the elements of a next system can be put in place as the necessary work of reconstruction unfolds over the decades to come. Nor is the next system likely to be a matter of localist change alone: General Motors and Chrysler were de facto nationalised by the US government in the recent crisis. What might happen in the next crisis – or the one after that – is by no means a closed question.

To confront the central issues, we need to begin a serious dialogue that is unafraid to admit that its aim is truly to change the system, not as a matter for the academic left but as a broad and practical discussion about the systemic crisis underpinning persistent racial and gender inequities, ecological threats and our current massive overconcentration of wealth and power. To help catalyse this conversation, I have recently launched the Next System Project, together with former presidential environmental adviser and climate activist James Gustave ‘Gus’ Speth. At this pivotal moment in history, we see this work, which has the potential to dramatically open up the space we need to envision the world we wish to see, as absolutely critical. Thousands have joined us, including leaders of major academic, labour, ecological and other institutions and engaged citizen groups. Our hope is that many more will join us in debating and constructing the next system as one in which outcomes that are truly sustainable, equitable and democratic are commonplace. ■



MARKET SHARE

The move towards a zero marginal cost society will transform our society for the better

by Jeremy Rifkin

Capitalism is giving birth to a progeny. It is called the sharing economy on the Collaborative Commons. This is the first new economic system to enter onto the world stage since the advent of capitalism and socialism in the early 19th century. The Collaborative Commons is already changing the way we organise economic life, offering the possibility of dramatically narrowing the income divide, democratising the global economy and creating a more ecologically sustainable society.

Like every parent-child relationship, the two economic systems often cooperate but on occasion are at odds. While the capitalist parent will need to nurture its child and allow it to mature, the child will also transform the parent in this unfolding relationship. We are already witnessing the emergence of a hybrid economy, part capitalist market and part sharing economy on the Collaborative Commons. To the extent that capitalism can create new business models and practices that will support the development of the sharing economy, it will prosper along with its offspring.

What is precipitating the great economic transformation is the unanticipated rise of the near-zero marginal cost phenomenon, brought on by the digitalisation of everything. (Marginal cost is the cost of producing additional units of a good or service, if fixed costs are not counted.) Private enterprises are continually seeking new technologies to increase productivity and reduce the marginal cost of producing and distributing goods and services so they can lower prices, win over consumers and secure sufficient profit for their investors. Economists never envisioned, however, a technological revolution that might unleash ‘extreme productivity’, bringing marginal costs toward zero; making communication, energy and transportation, as well as many other physical goods and services, potentially very cheap in the conventional marketplace, or nearly free, abundant and no longer subject to market exchanges in an emerging sharing economy. That is now beginning to happen.

To grasp the enormity of this economic shift, we need to understand the technological forces that have given rise to new economic systems

throughout history. Every great economic paradigm requires three elements, each of which interacts with the other to enable the system to operate as a whole: a communication medium, a power source and a transportation mechanism. Without communication, we can’t manage economic activity. Without energy, we can’t power economic activity. Without transportation and logistics, we can’t move economic activity across the value chain. Together, these three operating systems make up what economists call a ‘general purpose technology’ platform.

In the 19th century, steam-powered printing, the telegraph, abundant coal and locomotives on national rail systems meshed in a seamless general-purpose technology platform that gave rise to the first Industrial Revolution. In the 20th century, centralised electricity, the telephone, radio and television, cheap oil and internal combustion vehicles on national road systems converged to create an infrastructure for the second Industrial Revolution.

THE THIRD REVOLUTION

Now, the ‘communication internet’ is converging with a digitalised renewable ‘energy internet’ and a digitalised ‘transportation and logistics internet’, creating a super-Internet of Things platform for a third Industrial Revolution that is going to fundamentally alter the way we manage, power and move economic activity. Sensors are being attached to every device, appliance, machine and contrivance, connecting every thing with every human being in a digital neural network that will soon extend across the entire economy. Devices will be able to communicate with each other, as well as with everyone connected to the Internet of Things. Already, 14 billion sensors are attached to resource flows, warehouses, road systems, factory production lines, the electricity transmission grid, offices, homes, stores and vehicles, continually monitoring their status and performance and feeding big data back to the ‘communication internet’, ‘energy internet’ and ‘transportation and logistics internet’.

Connecting everything and everyone offers enormous economic benefits. It also raises risks and challenges, not least of which are guaranteeing network neutrality, >>

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“THE INTERNET OF THINGS ENABLES HUMANITY TO CREATE A LOW-CARBON SOCIETY AND MITIGATE CLIMATE CHANGE”

protecting personal privacy, ensuring data security and thwarting cybercrime and cyberterrorism. Every government will need to address these critical issues.

In this expanded digital economy, private enterprises connected to the Internet of Things can use ‘big data’ and analytics to develop predictive algorithms that can speed efficiency, increase productivity and dramatically lower the marginal cost of producing and distributing products, making businesses more competitive in the global marketplace. The marginal cost of producing some goods and services in the digital era will even approach zero, allowing millions of prosumers (consumers who are also producers) connected to the Internet of Things to share what they have made with others, for nearly free, in the growing sharing economy.

This phenomenon has already disrupted the ‘information goods’ industries over the past decade as millions of consumers turned into prosumers and began using the internet to produce and share their own music via file sharing services, their own videos on YouTube, their own knowledge on Wikipedia, their own news on social media and even their own e-books on the digitalised Collaborative Commons, all for nearly free. Meanwhile, six million students are currently enrolled in free Massive Open Online Courses (MOOCs) that operate at near-zero marginal cost and are taught by some of the most distinguished professors in the world, and receiving free college credits. The near-zero marginal cost phenomenon brought the music industry to its knees, shook the film and television industries, forced newspapers and magazines out of business, crippled the book publishing market and forced universities to rethink their business model. While many traditional industries suffered, thousands of internet enterprises reaped handsome profits by creating the new applications and aggregating the networks that allow the emerging sharing economy to flourish.

Economists acknowledge the powerful impact near-zero marginal cost has had on the information goods industries but, until recently, have argued that the productivity advances made possible by the digital economy would not pass across the firewall from the virtual world to the brick-and-mortar

economy of energy, transportation and physical goods and services. That firewall has now been breached. A new super-Internet of Things is evolving that will allow conventional business enterprises, as well as millions of prosumers, to make, store and distribute their own renewable energy on a digital ‘energy internet’ and share vehicles on an automated GPS and, soon driverless transportation and logistics internet. They will also be able to manufacture an increasing array of 3D-printed physical products and other goods and services at very low marginal cost in the market exchange economy – or at near-zero marginal cost in the sharing economy – just as they now do with information goods.

For example, within decades, the bulk of the energy we use to heat our homes and run our appliances, power our businesses, drive our vehicles and operate every part of the global economy will be generated at near-zero marginal cost and be nearly free. That is already the case for several million early adopters who have transformed their homes and businesses into micro-power plants to harvest renewable energy on-site. In Germany, over one million homes and small businesses are generating 27% of the energy powering the country. After the fixed costs for the installation of solar and wind are paid back – often in as little as two to eight years – the marginal cost of the harvested energy is nearly free. Unlike fossil fuels and uranium for nuclear power, in which the commodity itself always costs something, the sun collected on rooftops and the wind travelling up the sides of buildings are free. The Internet of Things will enable hundreds of millions of prosumers to generate their own green electricity on-site, monitor their electricity usage in their buildings, optimise their energy efficiency and share surplus green electricity with others on the energy internet.

Electricity-generating companies are coming to grips with the new reality of democratised energy and are changing their business models to accommodate the new energy internet. In the future, their income will increasingly rely on managing their customers’ energy use. The electricity companies will mine big data across each of their clients’ value chains and use analytics to create algorithms and applications to increase their

aggregate energy efficiency and productivity and reduce their marginal costs. Their clients, in turn, will share the efficiency and productivity gains with the electricity companies in what are called 'performance contracts'. In short, power companies will profit more from managing energy use more efficiently, and selling less electricity.

The meshing of the communication internet and the energy internet makes possible the build-out and scale-up of the automated transportation and logistics internet, transforming the very way we view mobility. Today's youth are using mobile communication technology and GPS guidance on an incipient automated transportation and logistics internet to connect with willing drivers in car-sharing services. Young people prefer access to mobility over ownership of vehicles. Millions of Americans are now using car-sharing services like Uber, Lyft and RelayRides. Each car-share vehicle eliminates 15 personally owned cars. It is very likely that future generations will never own vehicles again. The privately owned automobile, the centrepiece of the capitalist marketplace during the second Industrial Revolution, is falling victim to the distributed, laterally scaled opportunities of car sharing on a rising Collaborative Commons better suited to optimise the general welfare of society. The disruptive impact on the global transportation industry is going to be profound and far-reaching.

The long-term transition from ownership of vehicles to access to mobility in driverless vehicles on smart road systems will fundamentally alter the business model for the transportation industry. While auto manufacturers will produce fewer vehicles over the course of the next 30 years, they will increasingly reposition themselves as aggregators of the global automated transportation and logistics internet, managing mobility services and logistics.

THE RISE OF SHARING CULTURE

While the developing digital infrastructure is making the traditional capitalist market more productive and competitive, it is also spurring the rapid growth of the sharing economy. In the sharing economy, social capital is as vital as finance capital, access is as important as ownership, sustainability supersedes consumerism, cooperation is as crucial as competition and 'exchange value' in the capitalist marketplace is increasingly supplemented by 'shareable value' on the Collaborative Commons. Millions of people are already transferring bits and pieces of their economic lives to the global Collaborative Commons. Prosumers are not only sharing their own information, entertainment, green energy, and vehicles on the Collaborative Commons at near-zero marginal cost. They are also sharing homes, 3D-printed products, toys and games, sporting equipment and countless other goods and services with one another via social media sites, rentals, redistribution clubs, and cooperatives, at low or near-zero marginal cost. In New York City alone, Airbnb's 416,000 guests who stayed in houses and apartments between 2012 and 2013 resulted in one million lost room nights, delivering a devastating blow to the hotel industry.

Around 40% of the US population is actively engaged in the sharing economy. When asked in surveys to rank its advantages, respondents list saving money first, followed by impact on the environment, lifestyle flexibility, the practicality of sharing and easy access to goods and services. As for the emotional benefits, respondents ranked generosity first, followed by a feeling of being a valued part of a community, being smart, being more responsible and being a part of a movement.

According to an opinion survey conducted by Latitude Research, "75% of respondents predicted their sharing of physical objects and spaces will increase in the next five years". Many industry analysts agree with these optimistic forecasts. *Time* declared collaborative consumption to be one of its "10 ideas that will change the world".

ADDRESSING CLIMATE CHANGE

In a fully digitalised economy, extreme productivity – brought on by the optimisation of aggregate efficiency and the reduction of marginal cost toward zero across every sector of the economic value chain – decreases the amount of information, energy, material resources, labour and logistics costs necessary to produce, distribute and recycle economic goods and services, once fixed costs are absorbed. The shift from ownership to access in a growing sharing economy also means more people are sharing fewer items. This significantly reduces the number of new products sold – the circular economy – results in fewer resources being used up and less greenhouse gas being emitted into the Earth's atmosphere. In other words, the headlong push to a near-zero marginal cost society and the sharing of nearly free green energy and a range of redistributed goods and services on the Collaborative Commons is the most ecologically efficient economy achievable. The Internet of Things infrastructure enables humanity to create a low-carbon society and mitigate climate change.

A new smart infrastructure, made up of an interactive communications, energy and transportation internet is beginning to spread nodally, like Wi-Fi, from region to region, crossing continents and connecting society in a vast global neural network. The ability to connect every thing with every being is a transformational event, allowing our species to empathise and socialise as a single extended human family for the first time in history. This transformation is being accompanied by a change in the human psyche: the leap to biosphere consciousness and the Collaborative Age. Humanity is becoming aware that the biosphere is the indivisible overarching community to which we all belong and whose wellbeing is indispensable to assuring our own wellbeing, as well as our survival.

We are on the cusp of a promising new economic era, with far-reaching benefits for humankind. What is required now is a global commitment to phase in the Internet of Things platform and facilitate the transition to a digitalised, zero-marginal-cost society, if we are to create a more just, democratic, and ecologically sustainable world. ■



CASTING A NEW MOULD

Economics after the crash has failed to precipitate the sort of change many anticipated. Are we simply stuck, or is change possible?

by Anthony Painter

The shape of the post-crash economy is becoming clearer. For those who saw it as a historically disruptive event, the upshot will be surprising or, in a more loaded sense, disappointing. We are not talking change on the scale of the post-1970s, post-Second World War, post-Depression or even post-the collapse of the Gilded Age. Continuity and even intensification of the pre-crash world is rather more evident.

Ironically, Keynesianism or variants thereof came to the rescue. When faced with financial meltdown and the economic cliff edge, it was to post-Depression economics that the world turned. For all the fulmination of purist Keynesian economists, the differences between them and the IMF and most national governments are of degree (with the exception of the Eurozone, which has administered real austerity economics on errant nations). Keynesianism is the ambulance service of economics, and it worked in the short term.

So the system survived with a dose of unorthodox monetary policy and some minor regulatory tinkering. The new orthodoxy has emerged over three to four decades, at different rates in different places, but fairly universally across developed economies. It contains a number of key elements.

The first is the decay of social institutions, in labour markets especially. The decline of trade unions is emblematic. The second is the growth of flexible labour markets with sanction-bearing or even a coercive welfare state. In recent books on welfare and work, John Hills and Tom Clark both outline the precarious nature of life for a significant minority of workers. This trend is seen as frequently in Japan and Germany as in the US and the UK.

There has been an expansion of top-level skills in the new orthodoxy. However, these skills have captured enormous benefits, while others, more subject to technological change, are more likely to have suffered. Technology in the new orthodoxy is seen as a mass consumer benefit, but only a minority benefit within the workforce (and highly concentrated benefit when it comes to capital ownership). As a consequence of the precariousness of work, mixed with huge global financial imbalances (savings gluts in some places, unsustainable credit booms elsewhere), indebtedness has risen for those in precarious positions. And finally, this has all led to greater concentrations of ownership of productive capital, though house price inflation has helped many who are lucky enough to be owners.

For a very significant minority of the population, the situation is not hopeless, but it is precarious. From a systemic point of view, one of the dawning realisations, accepted by bodies such as the IMF and the OECD, is that gaping inequality and precariousness is itself undermining the productive potential of the economy. However, the new orthodoxy has shown itself to be quite capable of limping on and, indeed, it is doing so.

The results of a recent RSA-commissioned survey indicated that there were two very significant groups who were struggling and frustrated with the current state of affairs. ‘Safety firsters’, comprising 30% of the population, are fairly dissatisfied with things but do not perceive things to be against them. But this is the group that is most at risk from economic change.

The ‘held back’ (20% of the population) are very conscious of the risks and barriers they may face and are even more dissatisfied with things. What is most interesting about this group is that they are entrepreneurially minded, creative and seeking to develop and learn. Failing to respond to >>

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THE RSA

the creative urge within this group creates a net loss to us as a society and to the economy, as well as to them as individuals.

An orthodoxy that both wastes the human creative potential of many and causes others to hunker down and hope the winds of change blow over is not meeting our needs as a society. Sure, the new orthodoxy is not entirely broken, and there is suspicion of any alternative. (Other than in genuine austerity societies such as Greece, orthodox politics has proved to be remarkably resilient, as epitomised by the UK election.) Just because an equilibrium can soldier on does not mean that it is the right one. A decisive shift to a new set of economic cornerstones would meet our collective needs much better. To achieve that, it is necessary to innovate a series of institutional bridges to a better system.

In an earlier piece in this journal, I defined institutions in the following way: “Institutions bring the public voice into decisions from which it would otherwise be excluded. Organisations have a single purpose. Institutions have multiple purposes, as is the nature of mediated outcomes. The key point here is not to replace the private with the public, but to provoke a conversation between them.”

Interestingly, the economist James Meade saw the purpose of institutions in similar terms: “In a modern complex economy, the State must set the background of institutions and policies

“JUST BECAUSE AN EQUILIBRIUM CAN SOLDIER ON DOES NOT MEAN THAT IT IS THE RIGHT ONE”

which will enable the system to harmonise social and private interests...” Meade is right to see the importance of the state but perhaps misses wider forces of institution-building in civil society or even in business itself. Nonetheless, the fundamental point remains. If we want to see different social outcomes (such as a more equal distribution of ownership and opportunity) alongside private interests (a more efficient economy), then deliberate acts of institutional cultivation are the bridge.

One element of the new orthodoxy that seems likely to accelerate is the economic impact of new technologies. When writing in the 1960s, Meade was seemingly premature in his concerns about technology, wage stagnation and unemployment. As median wages stagnate across developing countries, could it be that he was simply ahead of his time?

Work is shifting to low-productivity sectors such as personal services and retail. This is often more precarious and almost always lower-paid than high-skill, non-routine work. Productivity seems to have stalled, which may well be a hangover from the crash, as demand has been weak. A new wave of technological innovation could accelerate trends such as wage stagnation, precarious work and capital concentration.

A number of economists and influential commentators, such as Andrew McAfee, Erik Brynjolfsson, Carl Frey and Michael Osborne, see these risks. It is difficult to look at the coming wave of complex robotics, artificial intelligence, data analytics and algorithmic creativity and not see significant economic and social change on the way. The new orthodoxy could well be about to accelerate. When those on the political right, such as Steve Hilton [see his interview in this edition], as well as the left warn that our economic and public institutions are losing their human dimension, something deeper is taking place.

Looking back at past moments of institutional innovation alerts us to the fact that a whole raft of changes will be necessary. The New Deal in the US and the New Jerusalem of the post-war Labour government in the UK were complex webs of institutional innovation. If we are to shift away from the imbalances and insecurities of the new orthodoxy, a similarly pluralistic approach will be needed. There are particular cornerstones that will be required.

A basic foundation is needed for human creativity. This comes from the individual being embedded in supportive networks

FELLOWSHIP IN ACTION PEER TO PEER

After struggling to pay for his own MBA in the UK, Mexico-born Juan Guerra set up StudentFunder in 2013 to help improve the funding system for higher education. The peer-to-peer lending platform provides loans to students on masters and professional courses on clear and fair terms when government funding or other sources are simply not enough.

The UK's student loan market is in “pretty bad shape”, said Juan, but it's important to help people overcome income barriers and realise their full potential. “We have been pushing the envelope of financial inclusion as far as we could and we've come up with different innovations to get around the fact that many young people don't have a long credit history. This will be a small, niche industry, but I think it's crucial.”

The RSA's support through Catalyst funding and its networks have helped the platform go from strength to strength, he said. “They gave me the confidence and credibility to secure further investment; they turned it into a little snowball.”

■ Find out more at www.studentfunder.com



and having a basic level of resource to depend on, without accompanying bureaucratic coercion. Currently, the sanction state places individuals in the hands of state bureaucracies rather than giving them a foundation in life. The sooner a universal basic income or similar is in place, the better, though the politics of such a change needs serious thought. Much is made of the contributory principle in welfare. Basic income works the other way round by providing a basis for greater contribution, as it frees people from entanglement with state bureaucracies. Strong minimum and living wage arrangements support this foundation further. It's not either/or.

System change can't stop there. The institutional structure of companies – especially plcs – should be widened to ensure they pursue the public good. This will encompass banks that should change their approach to risky lending. Other types of financial institution that provide responsible capital could receive regulatory and taxation support. Companies that become 'B Corporations' (they exist for public benefit) might also receive favourable treatment in taxation, with others being left with a higher burden. New requirements for corporate capital to pass to employee trusts could strengthen the current voluntary approach to employee ownership.

Finally, state activity has to become more oriented around energising networks of support. In our recently published report 'The Digital Learning Age', the RSA argued that greater focus should be given to the emerging spontaneous learning economy, where peer-to-peer learning networks are rapidly growing. The Cities of Learning initiative in the US is harnessing this network power by linking learners to skill-enhancing opportunities. The architecture is built around open badges, an open-source online digital learning currency. It is a movement rather than a stolid

government initiative (albeit one backed by powerful mayors).

This is but one example of how the state can, with the aid of the very technologies that are driving some of the risks in the current system, become a social network provider. In health, we should see the NHS becoming a health and wellbeing network connector. In community safety, it will be about creating community-based networks of support and resilience. Local energy cooperatives could be encouraged to help create new cooperative solutions to fighting climate change. Welfare to work becomes about creating networks of trust, learning and information, rather than simply getting the individual into any job passing, no matter how dead-end or unsuitable.

At the core of this new system, people will be given ownership of the data that identifies their capabilities and needs, and they will share it with particular services and networks as needed. We might also look to extend personal budgets beyond social care into other areas of public service. In so doing, the state would become a capital and security provider. It energises and convenes networks, but individuals are free to use common resources to meet their needs as part of wider networks of support. Ultimately, this is of greatest benefit to 'safety firsters' and the 'held back'.

Such deep systemic change is beyond the gift of any individual leader or any political party. It can only be secured through a powerful social movement. Civic networks, of which the RSA is one, will be the forces for change that will challenge the new orthodoxy. Big politics will have to adapt or die. Political parties themselves are elements of the new orthodoxy. No element of civic, political, economic or social life can remain untouched if the new orthodoxy is to be dislodged. We are the people we have been waiting for. ■

THE LONG GAME

By failing to embed long-term perspectives into policy, we are building our futures on sand

by Jon Bright

Successive UK governments have approached policymaking with an overriding focus on the short term: on the urgent rather than the important. They are not alone. As a result, policy challenges from ageing, obesity and difficult social problems to infrastructure investment and climate change – all of which require longer-term planning and attention – are not addressed effectively.

There are several reasons for this. First, tackling some long-term problems is inherently difficult and happily deferred by busy people overburdened by urgent demands. Second, successive governments have not found a way of making the transition from treating problems to preventing them in the first place. It is difficult to invest in activities that will pay off tomorrow when spending has to continue today. Third, investment in prevention and early intervention may reduce demand for services, rather than lead to immediate cashable savings. Fourth, we often lack firm evidence to show that upfront investment will consistently deliver net long-term savings. Further, while evidence may suggest one course of action, public opinion may be very different. Finally, we have an adversarial political system focused on the electoral cycle and often suspicious of cross-party consensus. Meanwhile, a loss of trust in politicians makes it more difficult for leaders to take difficult decisions. So, the back burner beckons.

These issues are not easy to address, but they cannot be ducked. Governments must learn to plan for the longer term; failure to do so will be costly and have adverse consequences.

ROOM FOR IMPROVEMENT

The UK government has shown it can tackle some long-term problems very capably. The 2005 Turner Commission's report on pensions analysed the problem clearly and was authoritative about the key policy choices. It then engaged a wide range of stakeholders and, as a result, its recommendations were endorsed by successive governments.

JON BRIGHT IS CEO OF OXFORDSHIRE RURAL COMMUNITY COUNCIL AND FORMER DIRECTOR OF HOMELESSNESS AT THE DEPARTMENT FOR COMMUNITIES AND LOCAL GOVERNMENT

Yet in many policy areas, there has been a great deal of discontinuity and failure to plan for the longer term. Infrastructure, especially in transport and energy, is an obvious example where long-term planning is vital. One 2012 review recommended an independent commission, backed up by cross-party support that would develop a 25- to 30-year perspective. The review argued that “the current political process is almost the opposite of what you need to take long-term decisions”.

Other policies, such as worklessness and welfare reform, labour market policy, skills, local economic development, youth offending, neighbourhood regeneration, education and early-years' policies, have been subject to frequent change, with all the associated upheaval, cost and reduced effectiveness that follow. Since 1991 there have been at least 20 separate programmes dealing with labour market policy, with about 10 changes in the institutions managing them. ‘Fundamental’ reviews of the NHS and seemingly endless changes to schools policy are exhausting professionals and a long-suffering public who struggle to keep up.

Some argue that these policy areas are contested or that there is limited evidence of ‘what works’, but while acknowledging political differences (over the role of the state and the market, for example), there is often a good deal of common ground. So what needs to happen?

POLICY IN ACTION

In modern democracies, where political horizons are short and media ones even shorter, policies need to be forward-looking and future-proofed: forward-looking in that we identify trends, challenges and opportunities on the horizon; future-proofed in that we embed this perspective into current policies. For example, good long-term policy should be affordable under different fiscal outlooks. The key is understanding the strategic options and securing cross-party support for the policies that need continuity over the longer term. To bring about this shift in focus, we need action.

First, we need leaders and champions to think in the long term. Effective leaders demand good evidence, are clear about



goals, want to know what works and think about the future.

Second, we need our politicians to make time for non-adversarial, cross-party deliberation of longer-term issues. Parliament can legislate to reinforce ambitious-but-distant goals (for example, to reduce child poverty and carbon emissions) as well as holding ministers and civil servants to account. But we need to embed long-term, cross-party debate into the way parliament works. A starting point would be to ask select committees to think about how this might be done. They are democratically grounded and can link parliamentary and policymaking activity. This could be mirrored by citizens' juries locally and other deliberative assemblies. This would engage the public, strengthen democracy and improve long-term policymaking.

Third, we need new and better institutions to encourage long-term policy while not undermining ministers' role to set policy goals. In the UK, examples include granting independence to the Bank of England, creating the monetary policy committee and setting up the Office for Budget Responsibility. Most recently, 'What Works' centres have been set up to share evidence so policymaking becomes more 'evidence-based'.

Fourth, governments need to be capable of good strategy. This means having the skills to understand public policy problems and work up plans to tackle them. This capability needs to sit at the centre of government, within departments and sub-nationally. Devolution and decentralisation offer an unparalleled opportunity to strengthen governance at the right geographical level – using city-region mayors and combined authorities – and to better tailor policy to needs

and preferences, leading to improved outcomes over the short, medium and, crucially, the longer term.

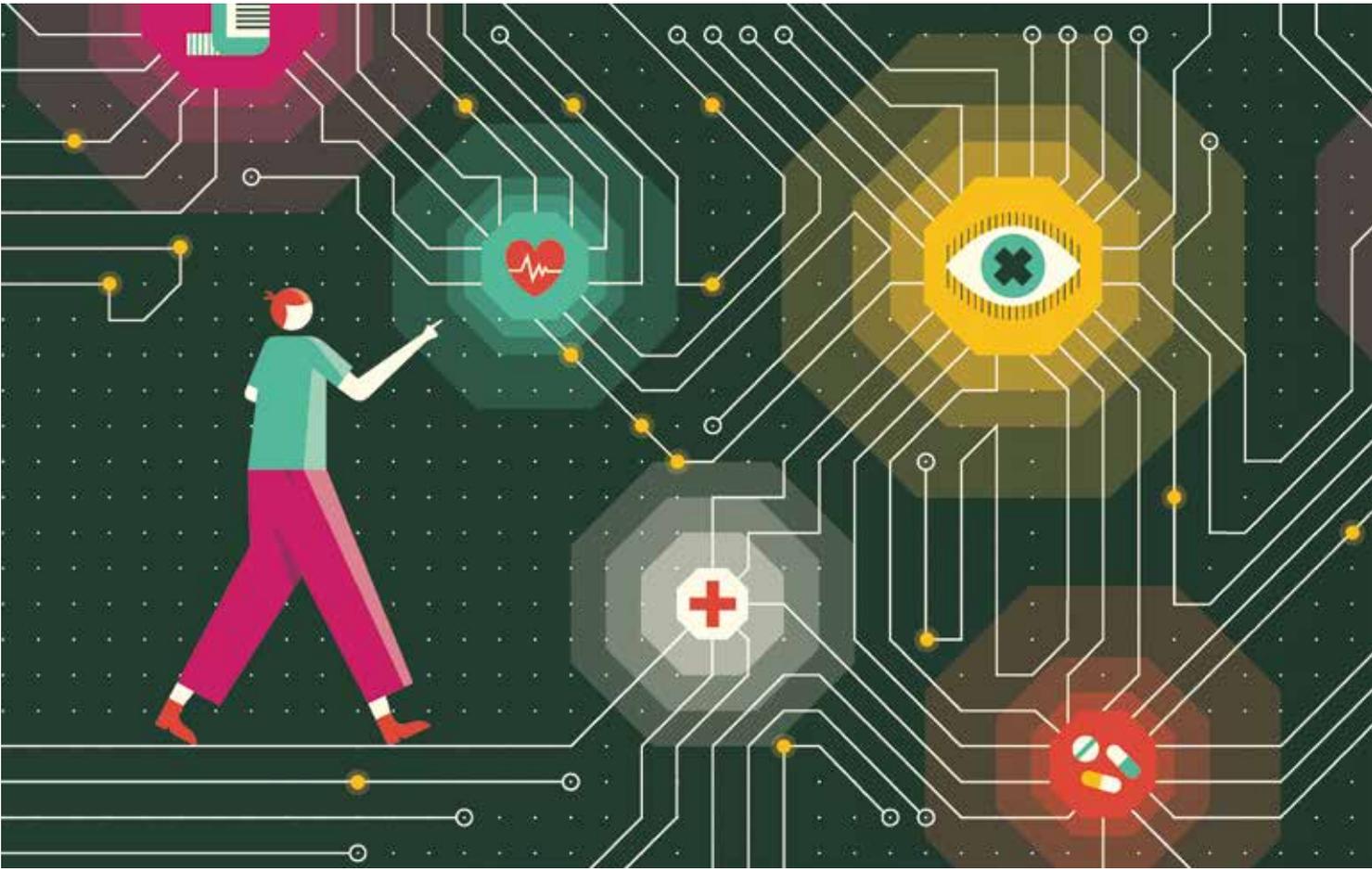
Fifth, good strategy needs to be linked to the way we manage money. Longer-term spending settlements make it easier to invest in interventions with long-term payoffs. At present, local authorities have two-year spending agreements. This should be extended five years or more. Pooling budgets makes it possible to share savings and support new approaches where one agency's spend leads to savings in another.

Finally, we need to increase openness and deliberation. Political leadership, new institutions, better strategy, open data and financial incentives should drive this change in culture. The power of robust evidence, thoughtful deliberation and fresh thinking shouldn't be underestimated.

In the UK, the public administration select committee has observed the tension between strategic capacity and an adversarial political system, noting that ministers are invariably diverted from their broader strategic goals. It argued for "institutions in government that are reasonably insulated from the very immediate pressures of the media and of politics".

Governments' capabilities to deliver good, long-term strategy that improves economic and social outcomes is vital if they are to meet the challenges we face and secure better value for money. We must resist our myopic tendencies and get better at staring at the horizon. ■

■ *With thanks to Stephen Aldridge, director of analysis and innovation at the Department for Communities and Local Government. This article draws heavily on his thinking.*



PATIENT POWER

New technologies could transform our health services and empower patients, but navigating the regulatory landscape will be a delicate balancing act

by Roger Taylor

ROGER TAYLOR IS CO-FOUNDER OF HEALTHCARE INFORMATION PROVIDER DR FOSTER AND THE AUTHOR OF *GOD BLESS THE NHS*

Vinod Khosla, the founder of Sun Microsystems and one of Silicon Valley's most successful venture capitalists, believes most of what doctors do will soon be done by machines. The job of providing medical care might appear to be primarily a human, hands-on job of talking to people, examining them and physically caring for them, whether that is nursing them in bed or operating on them in the theatre. Khosla takes a different view. In his paper *20% Doctor*

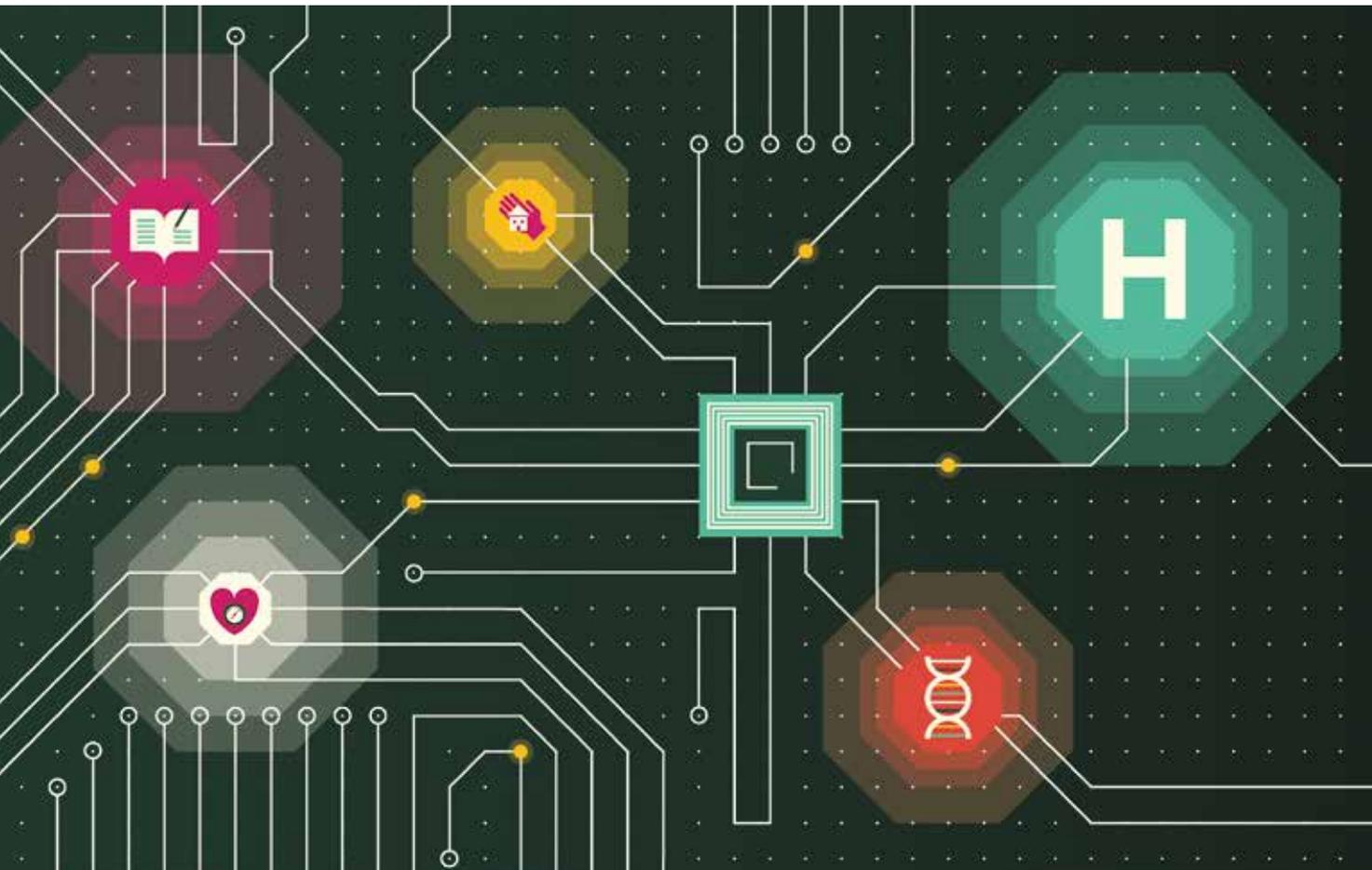


ILLUSTRATION: JAMIE JONES

Included, he says: “The majority of physicians’ diagnostic, prescription and administrative work, which over time may approach 80% of total doctor time, will be replaced by smart hardware and software.” In other words, most of medicine is information processing: trying to turn the raw information from the patient into a diagnosis and trying to identify the best possible treatment for that patient. And machines can do most of that quicker and more reliably than people.

Data science, he argues, will bring a rigour to medicine that it has always lacked, driven instead by sketchy, conflicting evidence and hotly divided opinions. Where the evidence is relatively unequivocal, professional views and practices still vary widely. And even where opinion on what to do is unanimous, working practices are so unreliable that there is a high likelihood it will not happen anyway. Technology, he argues, can deliver us from this.

Not everyone agrees. Some argue that technology is making medicine dumber not smarter. The 2014 documentary *Making Rounds*, directed by Muffie Meyer, follows two elders of medicine, Valentin Fuster and Herschel Sklaroff, respectively director and clinical professor of medicine at Mount Sinai Heart in New York, as they take junior doctors on rounds. They want to teach them the art of bedside diagnosis, an art they believe is disappearing. “Most of what you learn about a

particular patient is at the bedside... not from machines,” they explain. In case after case, we see them speaking with a quiet reassurance to patients, often holding their hand, and getting them to explain what led them to be in a hospital bed. This is not about ‘being nice’ but achieving better outcomes: with a combination of deep knowledge and a gift for insight, they quickly identify problems that previous doctors have failed to correctly diagnose, despite endless tests. The documentary tells us that \$700bn a year is spent in the US on tests that do not improve patient outcomes. Fuster’s advice to students is: “Don’t do something just because you have technology available. Your head should also be available.”

But whatever the future looks like for health technology, the good news is that you and I are going to get a vote. This is a new thing. Until now, medical technology has been designed for professionals and organisations, resulting in two consequences. First, technology has had almost no impact on the institutions of medicine. Industries like travel, banking and media have been reshaped by new ways of communicating, but the institutional structures of medicine have been largely unaffected. Second, medical technologies are extremely expensive. Indeed, technology has been one of the biggest causes of rising healthcare costs, more than the rise in illness and infirmity brought on by our long and unhealthy lives. >>



That is starting to change. Consumer-facing companies are moving into medical technology and packaging it for the public. For example, 23andMe provides people with information about their propensity to illness based on their genetic code. The Hello Heart app on the Apple Watch will monitor your vital signs, and the HealthTap app puts you in touch with doctors (68,000, no less!) to answer your questions. You can now run an ECG on an iPhone and, since June, you can conduct tests for cataracts and other eye disorders. Your mobile phone can even monitor your behaviour for signs of depression.

This will create headaches for the established providers of medical technology, which produce highly calibrated diagnostic machines that can cost thousands of dollars, and which are now facing competition from iPhone devices that cost several orders of magnitude less. The new devices may not be as reliable, but the advantages of convenience and cost – combined with the fact that volume of data is often a faster route to accuracy than more calibrated instruments – mean the odds must be that the cheaper technology will win out.

Then there is the headache for regulators. In 2013, the FDA stopped 23andMe providing health reports in the US. It said that telling people they had a particular genetic pattern associated with a particular illness was providing an unproven diagnostic test. Doctors argued that to make a proper diagnosis, they might want to do a more complete genetic screen and then consider the results alongside other factors such as family history. 23andMe was forced to stop sending out health reports and instead just give people the raw genetic information.

Forbes suggested the medical establishment was acting like teachers objecting to charter schools and pointed out that the public had seen through professional defensiveness and come to a more balanced view. Others pointed out that the intervention was futile, as people could simply take the raw genetic data, cross refer to other sources such as SNPedia and get exactly the information the FDA was trying to ban. The FDA shifted its position, but not much. Earlier this year, it approved one diagnostic test from 23andMe, saying: “The FDA believes that

in many circumstances it is not necessary for consumers to go through a licensed practitioner to have direct access to their personal genetic information.”

It is a remarkable statement. The idea that in some circumstances I might *not* be allowed my own genetic information without regulatory oversight is bizarre. But there is a real regulatory problem: the distinction between regulated ‘diagnosis’ and unregulated ‘information’ is starting to break down as patients have access to more and more clinical information about themselves. Similar problems will occur in relation to decisions about treatment options as personalised medicine makes such decisions increasingly data driven.

This presents doctors with the problems that all patient-empowerment programmes have encountered. There is the ethical concern as to how they exercise their responsibility for the patient’s health while allowing the patient greater control, when the patient may well decide things the doctor disagrees with. Then there is the fear that more informed patients will be more demanding patients.

One of the complaints made against 23andMe was that the health reports would cause people to demand tests they did not need. Perhaps, but the evidence for this is all anecdotal. What studies we do have indicate that better-informed patients seek less intervention, not more. It is the doctors who err on the side of action over inaction. Furthermore, the evidence suggests that where patients are distrustful of the diagnosis given them by a doctor, they tend to be proved right by second opinions. And a wrong diagnosis is much more wasteful of medical resource (and human life) than a second opinion. Either way, this is not an argument for restricting access to information; it is at best an argument for more transparent management of demand.

The wariness of many in medicine about the potential for technology to empower patients makes a contrast to the enthusiasm of governments. Unlike those providing healthcare, those paying for it have always favoured patient choice and patient empowerment. This is, in part, because they believe that, like the airline industry, some of the administrative work of sorting out appointments and medications can be passed over

“IN REALITY, HEALTHCARE IS NOW A RELATIONSHIP BETWEEN A PATIENT AND A SYSTEM”

to us, saving the public purse money. More importantly, there is evidence that the patients who are given more knowledge and control over their healthcare enjoy better health. They are more likely to adhere to treatment plans and less likely to pose unnecessary burdens on the system.

As Vincent Deary pointed out in a previous issue of this journal, this has its own dangers. “We are not good enough patients, and we are barely adequate as people,” he wrote, and “if we fail to shoulder the burden of treatment adequately, our own ignorance and ineptitude becomes part of this causal pathway of medical failure.” Governments have increasingly committed themselves to achieving better population health outcomes. It is a fine ambition and has been used to target resources and hold underperforming parts of the health system to account, with stern treatment for those who fail their targets. But what happens if we, as patients, are part of the machinery for producing good outcomes? Will we be subjected to the same stern treatment? If we fail the system, will it publicly condemn us, pressure us to change or simply wash its hands of us?

We tend to think of healthcare as the relationship between a patient and a doctor – a reliable, expert, wise and compassionate doctor. But in reality, healthcare is now a relationship between a patient and a system. This is partly because the complexity of healthcare means that care is beyond the capabilities of any individual, and partly because doctors, ‘broken’ like the rest of us, can be inconsistent and unreliable. But while systems might be more reliable than people and sometimes more expert, they are rarely compassionate or wise.

Regulating how technology shifts the balance of power between patients and doctors will be a challenge. Vested interests will make exaggerated claims of the dangers, while governments will fall for hype about new ways of delivering care. Regulators will err on the side of caution but still fail to prevent unscrupulous businesses taking advantage of the uncertainty to misinform patients. On the positive side, we will see the growth of not just technology businesses but exciting new ventures such as Holding Your Hand, which aims to provide new forms of support to patients, and PatientsLikeMe, which creates communities of patients to share data. In addition, we will see new healthcare institutions develop.

Two touchstones should guide us. The first is to make information more accessible. This is, in the end, the only

defence against the claims and counter-claims of defensive vested interest, overbearing government or opportunistic business. Preventing governments, businesses or professional institutions claiming preferential access to data, either because of ‘commercial confidentiality’ or ‘professional privilege’ will put us all at risk.

Consumer health applications need strong requirements imposed on making data accessible in machine-readable formats and being transparent about algorithms. Regulators will need to ensure that institutions exist within the regulatory environment or civil society that have the capability to interrogate such data. Some businesses will complain that it makes their business models untenable. That is not a reason to hold back. Indeed, if anything, it makes it all the more important to act now, before large amounts of capital are tied up in proprietary consumer medical information systems.

The NHS must ensure that aggregate data is open to external scrutiny and will need to create an environment in which I have access to my own healthcare data from whatever source; that I can consent to its use by individuals, organisations and even computer applications; and that regulation ensures that all such organisations are subject to transparency and scrutiny.

The second touchstone should be to trust people, not institutions. In practical terms, that means when the evidence is balanced on risk versus safety, do not take the safe path of seeking to restrict public access, but choose instead to err in favour of allowing it. For any regulator, this is a risky strategy, as you only get blamed for the bad stuff you missed and never for the good stuff that you let happen.

But trusting people is not so very risky as it might seem, since, in the main, people trust doctors. Even if Khosla is proved right and we need fewer doctors to make routine diagnoses or book appointments, the value of what Valentin Fuster and Herschel Sklaroff do will only increase. The ability to empathise with a patient, to understand what is happening to them both medically and in their life, and to provide advice that is rooted in deep knowledge and human warmth is not something that any application is going to be able to do anytime soon. Technology may be able to do 20, 40, or perhaps even 80% of a doctor’s work, but it will never do the bit that people value most. That puts doctors in a very privileged position. But if that position is used to try and halt access to knowledge, it will ultimately undermine that trust. ■

NEW FELLOWS

KIRSTEN SYDENDAL



As founder of community initiative Quality Lolland-Falster, Kirsten Sydendal is a passionate advocate for these two islands

in Denmark, her homeland. The project is a network for local women to meet and combat the region's reputation as an unattractive place to live.

"The media has been very tough on this area," she said. "Even if we have a success story, we only hear about our challenges; they focus on the unkempt houses and lack of jobs. And we find this coverage unfair." Although the region has suffered from a 'brain drain' as well-educated citizens leave for Copenhagen, the media's reluctance to show its positive aspects was leaving residents frustrated. To tackle this, Kirsten started the Lolland-Falster Lovestorm Facebook group, asking locals to share the region's success stories. "We love our area and we wanted to send this love out to the rest of Denmark. People just loved this description of the group and it exploded," she said. The group gained 22,000 members in four days and continues to attract positive stories.

Having been inspired by several of the talks, she envisions using the RSA as a source of discovery. "I get a lot of inspiration and find ideas that I haven't found in Denmark yet," she said. "It's very appealing to be a member of a global network like this."

ROY GREEN



Roy Green is dean of the Business School at the University of Technology Sydney (UTS). After various academic, consulting and government roles in the UK and Ireland, he returned to his native Australia in 2005. With much of his work focusing on innovation within business, Roy was well placed to initiate the university's latest undertaking: the construction of a new business school designed by Frank Gehry. The building began as a project to transform business education and equip graduates with the skills they will need in the changing world of work.

"Future graduates will embody integrative thinking and develop boundary-crossing skills, such as creative problem-solving and communication, in addition to specialised knowledge," said Roy. The building's design tries to encourage this cross-pollination of skills. "Gehry calls it his porous building, in the sense that it breaks down boundaries internally and is porous to the outside community that we connect with the creative digital precinct around us."

As a Fellow, he now hopes to play a part in the life of the RSA in Australia. "It probably isn't as central to intellectual life here as it would be in the UK, but the people who are part of it are very committed," he said. "I'd like to find out more about them and hopefully contribute."

IN BRIEF

Here are a few more new Fellows who are working to drive social progress:

Libby Dangoor is portfolio director at Social Business Trust, a venture philanthropy organisation looking to scale UK social enterprises. She is keen to bring her experience as a governor at Westminster Academy to help support the RSA SkillsBank.

William Page is director of economics at Spotify, providing analytical support and economic insight to the organisation. He hopes to use his knowledge of intellectual property disruption in digital media to benefit other Fellows.

Graham Woodruff is technical director of the Bristol Pound and set up the Bristol Drawing School four years ago. He is excited by how the RSA's cross-disciplinary agenda aligns with his own. Graham would like to contribute to and benefit from the RSA's large network of talented individuals and help bring future social enterprise projects to fruition.

Adelina Comas Herrera is a research fellow in the economics of dementia. She also chairs the Westgate Community Trust Canterbury and is committed to helping older people remain active and involved in their communities. She hopes the RSA will help her gain support from people who are working to transform and enrich our communities.

YOUR FELLOWSHIP: ENGAGE WITH THE RSA IN FOUR MAIN WAYS

1 Connect online: Search for Fellows online at our brand new website. Visit www.thersa.org/new-website for details of how to login. You can also follow us on Twitter @theRSAorg, join the Fellows' LinkedIn group and follow our blog at www.thersa.org/blogs

2 Meet other Fellows: Fellowship events and network meetings take place across the UK and are an excellent way to meet other Fellows. Visit our website to find an event in your area.

3 Share your skills: Login to the website to update your Fellowship profile and let other Fellows know about your skills, interests, expertise and availability.

4 Grow your idea: RSA Catalyst offers grants and crowdfunding support for Fellow-led new and early-stage projects that aim to tackle a social challenge. Visit the Project Support page on our website.

Explore these and further ways to get involved at www.thersa.org



PREVENTABLE ERROR

The state of the NHS and UK cancer care raises many design issues. Billions has been spent on cancer research, and we have little to show for it. Yet the UK could easily become the leader in fixing another embarrassing cause of death: preventable error. In hospitals, it is the third-leading cause of death, behind heart disease and cancer. Preventable harm, rather than death, is about 20 times worse.

I suspect the true figures are much worse, since the estimates of death from error are based on analysis of patient notes, which are hardly likely to freely admit errors. My father died from a preventable error in a hospital last year, and his patient notes and death certificate of course don't say as much.

In my laboratory at Swansea University, we can significantly reduce error using novel design techniques, in some cases by factors of two or more. So far, sadly, nobody has been interested in funding this research because attention focuses on disease and fancy technology (such as big data and going paperless) rather than rethinking design to make healthcare safer. Cancer is tragic, but error more so, because it is obviously preventable.

Why is your iPad wonderful, but your infusion pump or dialysis machine a disaster? Why are cars safer than they were in the 1950s? In both cases, market pressures drive manufacturers to produce better things. But the market pressures that make consumer technology continually improve has yet to gain traction in hospitals. Still, if there was more awareness, we could save more lives than, say, an advance in treating breast cancer.

After thalidomide, we learned that drugs have side effects. Technology does too, but who is taking any notice? Until there is more research, patients across the NHS will be dying unnecessarily from preventable errors that could have been fixed by better design and the research that informs it.

In the UK, a third of cancer patients die within a year. My father died only a few hours after a preventable error. It's time to take error and design seriously.

– **Professor Harold Thimbleby FRSA**



HEATHERWICK HERO

A great special issue on design in its many facets – thank you. Design is a deeply intuitive process wrapped up in various layers of social, functional and technical authenticity. Its results reflect the preoccupations of its time.

Tristram Carfrae damns Thomas Heatherwick with faint praise ('Blurred Lines', Issue 1, 2015). The reason Heatherwick creates what he does is not, as Carfrae says, because "he is fully informed of the technical issues by the people who are actually going to make it", but because he has a clear picture in his head about the outcome he is aiming to deliver and ensures that he sticks to this despite being told it can't possibly work. His is the creative vision.

I saw him turn ingenuity into reality on the Shanghai Expo Pavilion (we wrote the brief and ran the design competition). He wasn't told how to build it by others; he kept on prototyping until it worked. Heatherwick is a special type of designer; crudely speaking, one who starts from the end point and works back. Most of the rest of us are stuck at the start point, anxiously looking forward to the myriad potential decision points on the journey.

– **Malcolm Reading FRSA, chairman, RIBA**

Please send us your thoughts on the *RSA Journal* by emailing editor@rsa.org.uk or writing to: Editor, *RSA Journal*, Wardour, 5th Floor, Drury House, 34–43 Russell Street, London WC2B 5HA.

WHY INFORMATION GROWS

4 June 2015



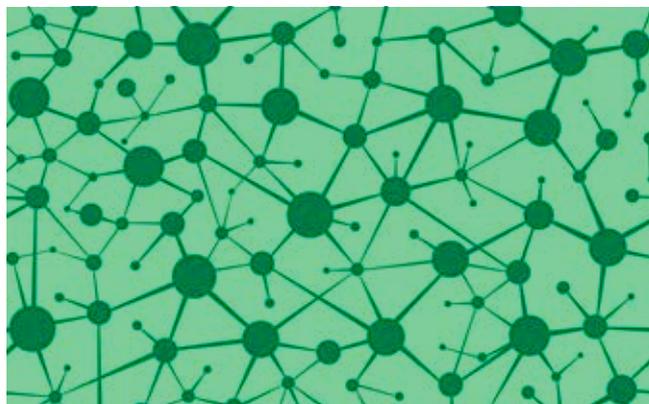
César Hidalgo makes the case for the power of data

The universe is made of energy, matter and information, but information is what actually makes the universe interesting. People tend to think of it as messages or something ethereal, but information is physical; it's the arrangement of physical things. When you shuffle a deck of cards, you're not changing the mass but changing the way in which they are arranged – you're actually changing information.

The story starts by trying to understand how information is related to the physical embodiment in which it always needs to exist. I was browsing a newspaper, and it said: "Chilean buys the world's most expensive car." The car was a Bugatti Veyron, costing \$2.5m. Imagine that you crash it against a wall. The crash doesn't change the physics of the particles; it just rearranges the way in which the atoms are connected. So, the physical order and information of the car is destroyed in the crash, which devalues it. This teaches us that the car was actually made of information, and that the value of the car was connected to its physical order.

However, products such as cars are not just made of physical order. They're also made of crystallised imagination. The physical order of objects is originally formed by mental computations or imagination, before being embodied into a project by a network of people. Therefore, understanding products as embodiments of information can help us interpret interesting macroeconomic processes. A macroeconomic process starts by a human's capacity to access the practical uses of knowledge through objects. The next question is: how do we get to do all of this? What are the social and economic mechanisms that allow us to perform this computation, and what are the limits to our ability to compute?

Our ability to compute is increased when we work in a team. For example, building a complex object like a car is difficult because it cannot be done alone. It has to be done in a social context, and embodying computation in a network of people is not easy. This is because our capacity to accumulate knowledge is finite; if we're going to do things that require a lot of know-how, we have to divide it up within a network of people. However, as our society increases its computational capacity, at some point we're going to cross a limit, which is



the 'person byte' limit. A person byte is the maximum amount of knowledge that you can embody in a person; therefore, computation in society is equal to the finite capacity of humans.

The question is, how big are these networks, and what determines their size? Mark Granovetter suggests society comes with pre-existing social structures, arguing that people are not born into markets; they are born into families. So, the social interactions that you have are predetermined by sociological processes. That, consequently, determines the networks that we form. Eventually, the economy is constrained to these pipes that are generated by sociological processes. Granovetter created the theory of embeddedness after finding in the late 1960s that more or less 50% of all people got jobs through a friend of a friend. Basically, that social network was determining 50% of the allocations being done in one of the most important markets, which is the labour market, which is the market by which people grow their networks of people who they use to compute things and make products. These findings show that pre-existing social structures form the networks that we use to compute collectively because they are embodiments of trust.

Trust reduces the cost of transactions, because if you trust someone, you can complete fluid transactions with them. You don't need to develop that relationship anymore, so you can be quick in communicating. Francis Fukuyama also interprets this transaction cost theory by determining that some societies have a low level of trust, and some have a high level. In low-trust societies, familiar societies, people form relatively small networks made mostly of kin. In a high-trust society, people can form large networks, and that helps determine the mix of products that different locations make.

Ultimately, the story is all about the re-embodiment of computation in ever more complex structures. The units have a finite capacity to compute, so the only way that they can transcend themselves is by creating social structures that allow them to compute at an even higher level of complexity. Yet, when you think about the world in these terms, the natural sciences and the social sciences are all part of a continuum, because the human is just one step on the ladder in which we are embodying computation in ever more complex structures. ■

INEQUALITY: WHAT CAN BE DONE?

20 May 2015



Sir Tony Atkinson outlines the positive steps we can take to tackle inequality

In 1965, 1.9 million children in Britain lived below the poverty line. Today, the figure is close to 4 million. Child poverty is due, in part, to increased inequality. Children are growing up in poverty because their parents do not earn a living wage or cannot get jobs. Yet only recently has inequality come to be acknowledged. Barack Obama has said that “rising income inequality is the defining challenge of our time”, but world leaders have not yet said what they would do about it.

In my book *Inequality: What Can Be Done?*, I make 15 proposals on how to reduce inequality. Some of the measures I discuss are familiar instruments of taxation, although it’s not a question of the level of taxation; it’s a matter of the structure. I propose a major reform of wealth transfers through gifts and bequests. Equally, I propose that the revenue from wealth transfer tax should be used to fund a minimum inheritance for all, upon reaching 18. People would then receive a capital sum, which they could use to pay for their education, for a down payment on housing or to set up a small business.

Our social security system needs radical rethinking. Imagine the possibility of a citizen’s eligibility for a welfare benefit to be based not on citizenship but on participation; participation that includes employment, self-employment and caring for those who are in need. In this sense, everyone who participates in British society would receive an income. I would also argue that child benefit should be paid for all children. A generous child benefit is an essential ingredient in any campaign to tackle child poverty. Ultimately, the key message is that it’s not feasible to reduce inequality just by taxation.

Another proposal is that the profile of unemployment should be raised by establishing an official government target for unemployment. Indeed, the government should act as an employer of last resort. However, jobs are not enough; the level of pay is also important. Most economic textbooks suggest that the widening pay gap is due to the demand of educated and skilled workers rising faster than the supply. Today’s story also includes the effects of globalisation, meaning that many jobs in which low-skilled workers are engaged are disappearing. In the spirit of the RSA, we need to invest in human capital... but that’s only part of the story.



The first reason it’s only part of the story is that we’re not powerless in the face of technological changes. Most of the advances we’ve seen, like smartphones, reflect decisions. These decisions determine what direction progress takes and whether it favours skilled or unskilled workers. It raises the question of who makes these decisions and whether they reflect the interests of all stakeholders.

The second way in which I depart from the textbook view is that I don’t believe the labour market should be understood purely in terms of supply and demand. I propose the implementation of a social and economic council. I would see a wide body with representation from NGOs and groups such as the RSA, as well as workers and employers. This council could advise on important issues as far as inequality is concerned, a subject on which we need a national conversation, not decisions behind closed doors. ■

MORE FROM THE EVENTS PROGRAMME

In July, **Matthew Taylor** delivered his annual lecture on ‘The Human Welfare Economy’ as part of our series on new economic thinking, which has included anthropologist **David Graeber** and the *Economist’s* **Adrian Wooldridge**. **Varun Gauri**, author of the *World Development Report*, spoke about applying behavioural insights to development policy. Journalist **David Brooks** and philosopher **Theodore Zeldin** gave moving talks on living life fully. And our series on the Seven Dimensions of Climate Change featured original work by poets, musicians and spoken word artists including **Ruth Padel**, **Alice Oswald** and **George the Poet**.

For highlights of forthcoming events, **see page 9**

These highlights are just a small selection of recent RSA events. All of these, and many more, are available as videos on our popular YouTube channel: www.youtube.com/user/theRSAorg

Full national and regional events listings are available at www.thersa.org/events

LAST WORD

They say, when you're at a critical juncture, a good idea is to write yourself a letter from the future detailing your success. It's a great motivational tool, so here goes...

Isle of Lewis. 1 July 2030.

Dear Paul,

You were completely wrong about the crisis of the late 2010s. Globalisation survived, free market capitalism is still here and the world made a peaceful transition to low-carbon energy. What's more, the two key institutions you doubted are also going strong: Great Britain and the EU.

I'm writing this from a Scottish island that still sends an MP to Westminster, and the man who brings my breakfast each morning is still a Lithuanian on the minimum wage.

Here's how it went, consigning your doom-laden books quickly onto the remaindered shelves and ensuring a permanent majority for centre-right politics across the developed world.

First, the technology. The fifth Kondratieff wave, which had most definitely stalled around the time of Lehman Brothers, came surging back around 2020, driven by the rapid deployment of automation technologies into healthcare, education, genomics, retail and services, including corrective services. The rapid automation of both low-paid drudgery and repetitive mental labour, which you feared would collapse both employment and demand, has happened.

But a new human microservices economy grew up, almost exactly as your intellectual hero André Gorz said it could not. Ours is, at bottom, an Uber-ised economy: when my Lithuanian service provider is not needed here, he can trade his services online with other institutions. With the price of menial labour now collapsed towards subsistence level, the top 25% of society enjoys levels of luxury and freedom on a par with Edwardian times.

Globalisation, which you feared would fragment as the west defended human rights, national sovereignty and the rule of law against a newly aggressive Russia and China, survives, albeit in a different form. Around 2018, as inequality widened, and in the 12th year of quantitative easing, the western elites opted simply to copy the Vladimir Putin-Xi Jinping approach to governance. Western claims on Estonia were set aside, the Black Sea demilitarised and the world's major powers signed the 'Multilateral World Peace and Harmony Treaty' at Munich in September the same year. Those who scoffed at the parallels, on the 80th anniversary of Chamberlain's visit to Munich, have been proven wrong: we are now in the second decade of the Pax Putiana. And human rights remain constrained in Russia, but no more so than in Europe. Here, postwar constitutional arrangements did not survive the levels of austerity demanded to turn the single market into a fiscal union.

Even as unemployment rose, demand was sustained by the near-unlimited creation of money. Asset wealth now completely dwarfs wealth created in the productive economy. As for climate change, we are on track to hit the two-degree target on time and to budget. Every day our state broadcaster announces new conquests in the fight to reduce global temperatures, despite the efforts of a few deep-green naysayers who claim that the official science is 'bogus'.

Demographically, ageing remains a challenge. However, mass migration waves from the south were no longer an issue once the western democracies adopted the Australian model of asylum deterrence.

Capitalism has, in short, survived. Democracy is a little weaker, repression by the standards of 2015 is high and inequality is through the roof. But the essential mistake you made was to believe automation would be delayed by collapsing wages. Most people were content to transition to the status you disparagingly referred to as 'fake tan Downton Abbey'.

Yes, we have the refuseniks. But what surveillance and predictive law enforcement cannot handle, the private corrective services sector – as I know all too well – can.

I must sign off now, as it is 3.30pm and 'bang up' time. Yours aye.

Attendee 230160, HM Indefinite Detention Centre Stornoway.

Paul Mason is economics editor at Channel 4.

This book, Postcapitalism, is out now, published by Allen Lane

Why not try something new for your next event?



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