

RSA

21st century enlightenment

Journal Issue 3 2014



Brave new work

Lynda Gratton explains how we can prepare for the labour market of the future

Theodore Zeldin argues for a reimagining of employment

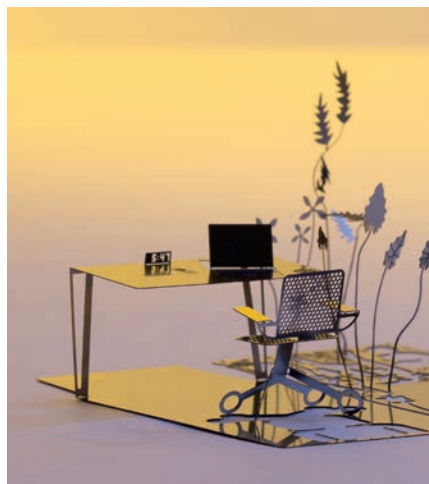
Charles Clarke questions how we tackle the toughest policy problems

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“OUR FUTURE WORKING LIVES WILL BE CHARACTERISED BY EMPOWERMENT, FLEXIBILITY AND COLLABORATION”

LYNDA GRATTON, PAGE 10

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“WHAT IF WE EXPECTED PLEASURE FROM PAID WORK?”



MATTHEW TAYLOR

As economic and social factors herald rapid changes in the nature of work, both organisations and individuals must take this chance to shape it

The meanings we attach to words can trap us like bars caging our imagination. So it is with ‘work’. Of all its many connotations, the sense of work as toil, something onerous that is required of us, is the strongest. Confirming this association is the fact that work’s most common adjective is ‘hard’. The corollary of work as diligence and effort is that those who don’t work, or don’t work sufficiently hard, are both inadequate and irresponsible.

But what if we expected pleasure or fulfilment from paid work? This is not to say that work would always be easy or instantly enjoyable, but overall might it be something we did for reasons that were intrinsic, not instrumental – “prosperity, promotion or power” as Theodore Zeldin said to me during our conversation for this *Journal*.

The aspiration of good work has been a recurrent feature of future-gazing almost ever since industrialisation and the emergence of mass wage slavery. As Carl Frey describes, smart robots threaten to make human intervention largely redundant for another huge swathe of activities. Yet, as we know from recent history, technological progress doesn’t necessarily mean either fewer jobs or better jobs.

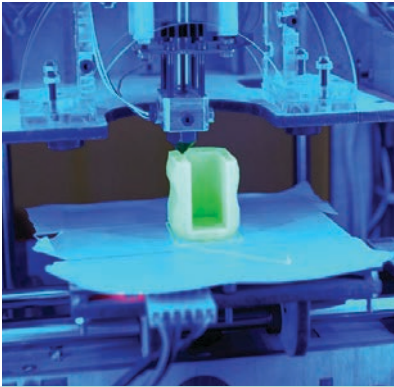
Of course, many people have had the luck or determination to find work that they love. As Ben Dellot explains, RSA research finds that many among the growing army of self-employed see a lower income and longer hours as a price worth paying for greater flexibility and autonomy.

But still the idea of work as suffering persists. Only a minority of workers report feeling fully engaged. What does it say about all the enlightened HR strategies and staff development programmes that, by common consensus, Monday morning is grim and Friday evening joyful?

Once we at the RSA started talking about the power to create, the question of how creative the Society is as an organisation was bound to become more pressing. A priority over the coming months is to find ways of working that more fully release the potential for creativity and fulfilment in our Fellows and employees. I ask myself why it has taken so long for this idea, which has frequently crossed my mind, to lodge there as an imperative.

So many people say they would like to change jobs, do something more enjoyable and fulfilling. Managers, too, aware of the evidence that more engaged and happy staff are more productive, are committed in principle. Yet, somehow we don’t get round to it or we pursue the ideal half-heartedly.

Making work no longer work may be hard work. Shouldn’t it also be a labour of love? ■



INNOVATION

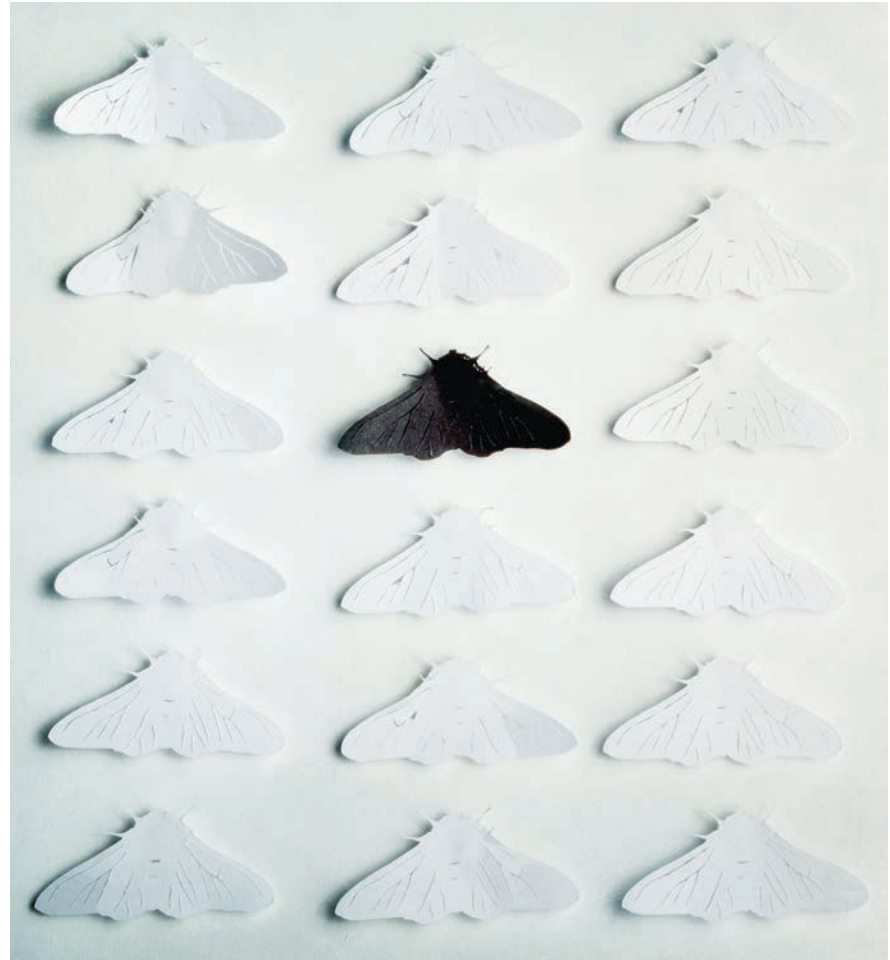
MAKER SPACE

The RSA Innovation Hub, in collaboration with Fab Lab London, opened on 19 September. The Hub, based at Bank in the City of London, is home to the Great Recovery project. As the RSA's first practical 'maker space', it will be a centre for circular economy innovation where industry groups and professionals can meet, collaborate and create.

The partnership with Fab Lab will accelerate the incubation of new ideas, with CNC machinery, 3D printers and technicians on hand to help prototype new products. The main workshop allows for tear-down and design-up activities, as well as being an exciting venue for networking and exploratory events. There is also a comprehensive materials library showcasing 'challenge' or 'opportunity' materials.

Nat Hunter, co-director of Design, said: "We are understanding what we are making, considering why we are making it and analysing the impact of the products we make. We are bringing together designers, technologists and entrepreneurs to redesign products and business models and to learn new skills."

Get involved and find out more at fablondon.org



VENTURES

BREAKING THE MOULD

Online craft marketplaces are an increasingly popular way for people to buy and sell handmade goods. The RSA's new report *Breaking the Mould* explores the reasons behind the growth of these platforms and examines what they might tell us about the changing nature of business.

Speaking of the findings, Benedict Dello, author and senior researcher at the RSA, said: "People selling on online craft marketplaces exemplify a new type of business owner: one who is driven to start up for creative reasons, has deep interactions with their customers and provides subtle peer support to fellow shop owners. Yet this is not a departure from capitalism but rather a return to its roots."

The report has several recommendations for how to help people running hobby-like ventures. This includes making business support part of the BBC's purpose, recognising smaller businesses in official government measurements, and tweaking search engine algorithms to highlight smaller firms to consumers.

“LACK OF FINANCE KEEPS THOUSANDS OF TALENTED CANDIDATES FROM THESE OPPORTUNITIES”

FELLOWSHIP

CENTENARY AWARD WINNERS

Young people who cannot bank on mum and dad are now banking on Student Funder, a peer-to-peer lending project that funds students looking to further their postgraduate education.

While the Student Loans Company does not fund master's or professional courses, it is estimated that only 2% of graduate students receive bank loans. Coupled with the advent of £9,000 tuition fees, this lack of funding is having a huge knock-on effect. The Higher Education Statistics Agency reports a 17% fall in the number of UK-domiciled students beginning postgraduate courses.

“Some master's and professional courses are required in certain professions, but the lack of finance keeps thousands of talented candidates from these opportunities,” explained Juan Guerra FRSA, the entrepreneur behind Student Funder. With RSA support, the project is addressing this gap, providing funding for more than 65 young people on professional and master's courses since 2012.

Founded by people who struggled to fund their own educations, Student Funder aims to help thousands overcome financial barriers to education and improve their career prospects. Now working for Rolls-Royce, Rehan Khan was one of those to benefit. “Student Funder helped me fund my master's when I most needed it,” he said. “Thanks to that, I finished my course and landed the job.”

In June, the RSA marked 100 years of Fellowship by awarding this successful Catalyst venture the RSA Fellowship Centenary Venture Award. The prize gives Student Funder a further £3,000, enabling it to start new collaborations and share progress at six Fellowship events across the UK.

The runners-up were 3-2-1-Ignition* and Incredible Edible, which each take away £1,000 to share progress at two Fellows' events across the UK.

Founded by Rick Hall, 3-2-1-Ignition* uses pop-up shops to bring empty retail spaces to life with a host of science, technology, engineering and maths activities. Catalyst funding helped launch the pilot in Nottingham last autumn, and the pop-up shop later made an appearance at the Barbican in London.

Incredible Edible is a Todmorden-based project that grows and raises awareness of local food. RSA Fellows Pam Warhurst and Mary Clear started the project in a bid to find an inclusive way of enriching their local community. Their theory was that food would inspire people to take action – and it worked. The UK network alone has more than 50 independent groups, while the worldwide movement stretches from Canada to New Zealand.



NETWORKS

CHANNELLING TALENT

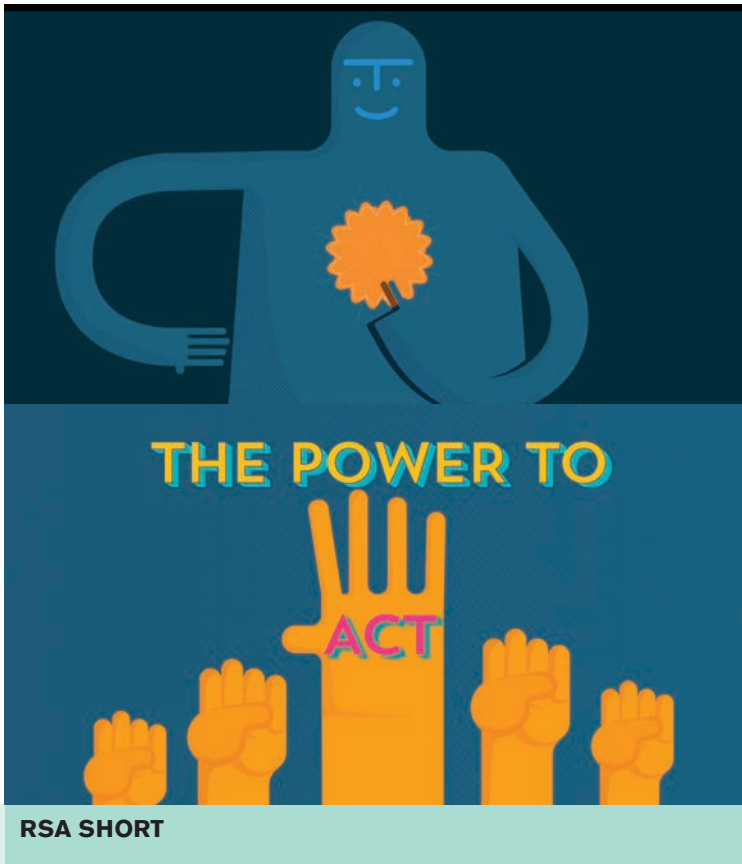
As the music industry faces a huge period of change, a new short film and accompanying report *Channelling Talent*, from the RSA's Action and Research Centre, shows that what we mean by 'talent' depends on the networks of information we participate in.

Set up to explore the role of social networks in recognising and rewarding talent within the music industry, the project brought together musicians, sociologists from the University of Manchester, journalists and educators to explore the role of networks in shaping not only our exposure, but also our definition of talent, arrived at through the influence of social interactions and relationships over time.

The report found that existing channels for talent within music are not serving society well. Ability is more evenly distributed than the resources to develop it and more widely than the concentrated financial rewards enjoyed by superstars and executives. Concentrations of power within social networks mean much of the UK's talent is neglected as a consequence.

The report recommends that music institutions support talent by publishing their definition of talent as part of their mission statement, and continually evaluating the effectiveness of initiatives that are supposed to support talent. Lead author Jonathan Schifferes said: “We should challenge the assumption that social connections will always provide a shortcut to success. We have a right to demand better, especially when public and charitable funding is involved in developing talent.” In a time of flux, music companies, colleges and media need to ensure their networks are efficient channels for talent, broadening the power to create for everyone's benefit.

Find out more at www.thersa.org



A MOVIE HIT

Since its release in September, Matthew Taylor's RSA short film, *The Power to Create*, has attracted over 31,000 views online.

The animated short asks how can we allow everyone the freedom and opportunity to develop their creative capabilities to the full and, in doing so, stand better equipped to tackle the complex challenges we face as a society.

Chief executive Matthew Taylor introduced the concept of the power to create at his annual lecture in July and we've run several events to disseminate ideas we are exploring around unleashing creativity to achieve collective goals. These include a panel discussion with senior leaders from the RSA's Action and Research Centre on what the power to create means for public services, communities and businesses; writer and adviser Charles Leadbeater on frugal innovation; and designer Alastair Parvin on design and democracy.

RSA Shorts is the sister series of the immensely successful RSA Animate. These compelling animated snapshots bring big ideas and inspiration to a broad and curious online audience. For *The Power to Create*, we reimagined Matthew's insights in collaboration with animators TOGETHER and sound designer Simon Field.

— Watch the film at bit.ly/powercreate

EDUCATION

LICENSED TO CREATE

Over recent years, teacher quality has been recognised as one of the most important factors in improving student outcomes. In a new report, *Licensed to Create*, Dylan Wiliam, deputy director of the Institute of Education, described this as “a shift from treating teachers as a commodity to regarding teacher quality as a key element in educational policy”.

While this shift recognises the importance of improving the quality of our teachers, there is little consensus on how we best achieve this goal.

Labour's Tristram Hunt recently proposed a teacher (re)licensing scheme as a way to improve quality; with *Licensed to Create*, the RSA has brought together a wide range of perspectives to explore this idea, with 11 authors offering insight from practice, academia and politics on how we could improve teacher quality.

The RSA offers its own take on how to use this licensing idea to explore the role of teacher creativity, with an animation that recasts teachers as designers. Headteacher Tom Sherrington's essay neatly sums up this approach: “Design is a form of creativity that suggests deliberate, planned innovation built on a foundation of research-informed professional wisdom.”

The RSA makes five recommendations, including empowering a new Royal College of Teaching to introduce a teacher licensing scheme, managed through a peer-reviewed portfolio process and involving the subject associations.

— See the animation and download the publication at www.thersa.org

PREVIEW



HUMANITY ABOVE BUREAUCRACY

Jos de Blok visits the RSA to receive the 2014 Albert medal for his work as founder of the Buurtzorg 'neighbourhood' model of health and social care, and to show how the model could work globally. The movement aims to simplify organisational structures and focus on developing meaningful and trusting relationships between nurses, patients and communities.

Where: RSA
When: Monday
17 November at 6pm



BUILDING NEW WORLDS

Alex McDowell RDI is an award-winning designer and storyteller working at the intersection of emergent technologies and experiential media. In this year's annual RDI address, he describes his work on the Rilao Project, a fictional city and narrative laboratory that allows us to imagine an alternative trajectory of social, political and technological development.

Where: RSA
When: Thursday
27 November at 6pm



THE POLITICAL ECONOMY OF CLIMATE CHANGE

Robin Hahnel, professor of economics at Portland State University, discusses what must be done, how it can be done and what political obstacles must be overcome if humans are to avoid the fate of lemmings.

Where: RSA
When: Thursday
4 December at 1pm



DERELICTION TO DESIGN AWARDS

Receiving the RSA Bicentenary medal at this event, Susan Woodward OBE, founder of the Space and Sharp Projects, explains how Manchester is redesigning urban environments to create more vibrant and resilient cities.

Where: RSA
When: Thursday
15 January at 6pm

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

SHIFTING LABOUR LANDSCAPES

Technological progress and demographic shifts are heralding a rapidly changing labour market. How can we prepare for the new world of work?

by Lynda Gratton

We exist in a landscape that is constantly and rapidly changing and our working environment is no exception to this. Let me begin by sharing with you two recollections of my own journey of understanding, through this fast-evolving landscape.

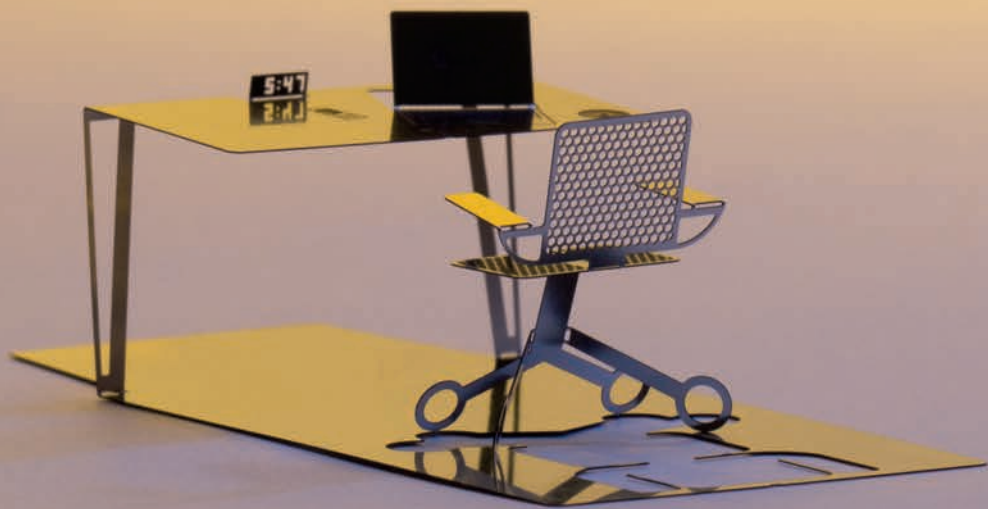
I began my working life in the 1980s, in a world without personal computers, mobile phones or the internet. I can vividly recall typing my doctoral thesis on a typewriter – the copious use of Tippex stands witness to my inaccuracies. At the time, the computer program I used to analyse the data for my thesis required hundreds of punch cards and took more than 24 hours to complete a relatively simple statistical procedure.

More than a quarter of a century later, in 2013, while attending the World Economic Forum meeting at Davos, I watched a 13-year-old student from Lahore in Pakistan sitting on a panel with Bill Gates and senior professors from Stanford, MIT and Harvard University. The topic of the session was



LYNDA GRATTON IS PROFESSOR OF MANAGEMENT PRACTICE AT LONDON BUSINESS SCHOOL AND LEADS THE FUTURE OF WORK RESEARCH CONSORTIUM

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“A POSITIVE ENERGY FLOW FROM WORK TO HOME IS MORE LIKELY WHEN THE DESIGN OF WORK ALLOWS WORKERS TO HAVE SOME AUTONOMY”

the impact of online technology on learning, and this young woman had secured her place on the panel by coming top in one of the online software engineering courses that the Stanford professor had created.

What strikes me about these two memories is how they underline the sheer velocity of technological innovation and the profound changes that we have seen and will continue to see.

SHAPING INDIVIDUAL EXPERIENCE

The rather slow-moving typing of my doctoral thesis took place less than four decades ago. And yet, growing up, my own children never saw a typewriter. My experience of personal computers began in my 30s, but my sons, now in their 20s, began using computers in their late childhood. Today, I see nine-month-old babies interacting with their parents' tablets and beginning to grasp how they function. What form will work take for these technologically savvy generations?

This is a question that my research team, the Future of Work consortium, is investigating through studying how teenagers think about the way they want to work. My guess is that the supreme confidence that these young people have with technology and social media will strongly influence the way in which they approach tasks and collaborate in a work context.

Given that we now work in an environment of 24-hour connectivity, the impact of technological advance bleeds into our home lives as well. When I started my own career – as a psychologist at British Airways – I left work between 5.30pm and 6pm and could look forward to a peaceful evening with no internet or mobile phone to distract me. My weekends were equally undisturbed. I know few working people who enjoy such peace today. While this has obvious benefits in terms of responsiveness, it has its drawbacks. The effects of ‘sleeping with your BlackBerry’ in terms of increasing stress and potentially decreasing creativity have been widely reported.

My own insight on this comes from a study I conducted with Professor Hans-Joachim Wolfram on how managers across Europe responded to the permeable boundaries that technology creates between work and home. We found –

and others have made the same observation – that there is a constant flow of energy between work and home. Sometimes this energy flow is positive. People gain a great deal from work; they learn new skills that can be transferred to the home environment and meet interesting people who excite them. At other times, the energy flow from work to home is profoundly negative. People leave work feeling frustrated and angry; they cannot switch off and feel guilty at home when they are not working. The differences between the two types of energy are determined both by the nature of the work and by the attitude of the person. A positive energy flow from work to home is more likely when the design of work allows the worker to have some autonomy over when and where they work, when they are prepared to use this autonomy and when they can build in times for recuperation.

The forces of technology and globalisation that we are seeing are not only changing the nature of work, they are also reshaping labour markets and the sort of work we can expect to be doing. Perhaps one of the most interesting changes is a phenomenon that labour economists have called ‘the hollowing out of work’. This effect sees middle-skill jobs disappear as they are outsourced or replaced by technology, leaving only jobs at the ends of the skill continuum: those that require either low-end skills or high-end skills. The remaining low-skill work cannot be easily outsourced (such as food preparation) or has a physical element (such as caring work). Because of its relatively low-skilled nature, it is always available to new arrivals to the labour market (recent immigrants, for example) and so the wages are generally low. High-skill work remains because it has not yet been replaced by technology and cannot easily be outsourced: most professionals and some management roles fall into this category. We can expect this work to become more complex, as the easy parts continue to be replaced by technology, leaving the components that require more complex human skills such as creative tasks and those that require collaboration or negotiation. Of course, in most developed economies, these jobs are the most attractive and highly valued, requiring lots of preparation and a focus on ‘job-ready skills’.



THE GLOBALISED TALENT POOL

And what of the Pakistani high school student at Davos? Her presence on that panel tells us of another fundamental shift in the landscape of work: it is indicative of the speed at which the globalisation of talent is taking place and knowledge can be shared, information absorbed and highly talented people identified. It gives us insight into the possibilities, for those who are able and motivated, of joining truly global working elites.

Advances in technology – particularly social media and the internet – facilitate this globalisation by giving greater access to world-class education. The trend towards increasing numbers of people engaging in tertiary education also plays a part. According to an OECD study, young people from China represented 17% of the world population of graduates in 2000, and this figure will rise to 28% by 2030.

Of course, these numbers are less significant if the standard of education is poor. But again, technology enables the spread of ideas to students around the world. Some of the highest-rated university departments in the world – including Stanford and Harvard – now make their lectures available online

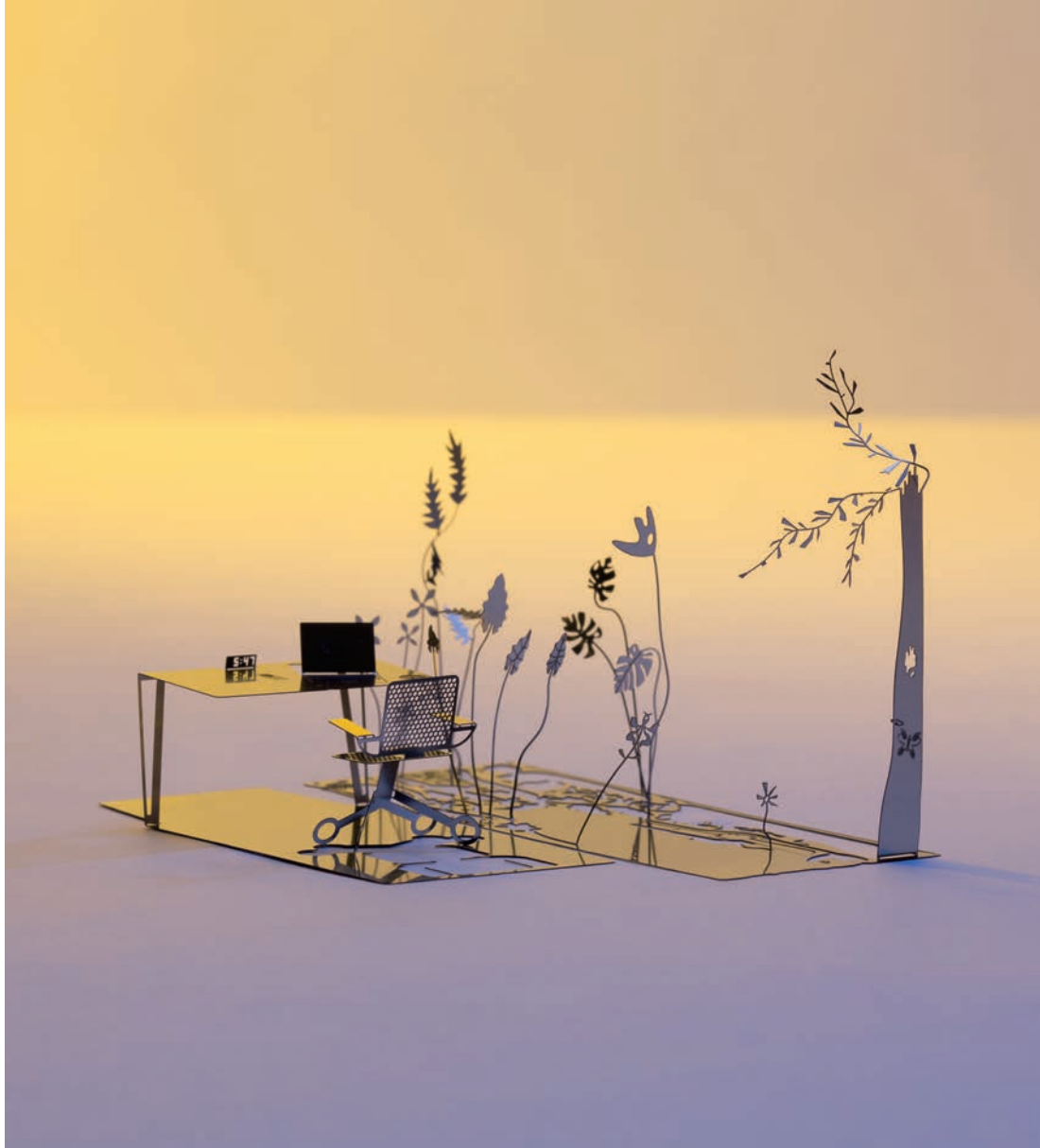
and, more importantly, provide an examination process for remote students.

SPECIALISE TO SURVIVE

How can workers and companies capture the incredible benefits of these technologically motivated cultural shifts while mitigating the negatives? I have three suggestions.

First, it is crucial we invest in competency development. The age of the generalist is over and specialist skills that require preparation and practice, and cannot be replaced by technology, are increasingly valuable. Working lives that begin at 20 and end at 80 could soon be the norm. In this context, becoming a specialist in one area will not be sufficient. People will need to retrain, refocus and relearn at various points in their careers.

Second, individuals and organisations need to be courageous about harnessing the collaborative benefits of technology. In a survey developed by my Future of Work consortium, the overwhelming proportion of respondents – all of them employed by large corporations – reported that their personal experience of technology was significantly more >>



advanced than their corporate experience. As individuals, we should be demanding more of the companies we work for when it comes to technology, encouraging them to implement the tools we use in our everyday lives with a view to making work more effective. In turn, companies need to have an open mind about technology and be prepared to embrace new ways of working rather than fearing them.

FACING THE FUTURE AS ADULTS

Finally, we need to acknowledge and reinforce a relationship between employer and worker that is less ‘parent to child’ and more ‘adult to adult’. Today, few people join a company believing they have a job for life, and many realise they need to take more responsibility for themselves. The changes, technological and otherwise, that I have discussed so far have accelerated the move from the parent-to-child model to the adult-to-adult model: one that is based on openness, trust and commitment-making.

It is impossible to behave in an adult way at work without understanding the consequences of your actions. That means

employers must be open about the real nature of the work at the outset. For example, some jobs require a great deal of attention and have little autonomy or flexibility. In her study of the US labour markets, economist Claudia Goldin gave investment banking and corporate law as examples of this. There, flexible working is almost impossible and long working hours are the norm. Corporations need to be open about this type of job so that people can make an informed decision about whether to take them and how to manage the trade-offs they entail.

Adult-to-adult relationships are built on transparency, but they are also built on trust. Trust is fundamental to adult-to-adult relationships in the workplace; specifically, the capacity of workers and managers to trust each other. Home-based working is an example of where trust can be tested. Technology offers the opportunity for many people to work from home, but often they do not, because they understand implicitly that once they are out of sight, they are not trusted to be working hard. There have been recent developments in collaborative technologies that create ways of recognising work and building reputation – even for those who are not in view.

“WITH A BIT OF IMAGINATION, IT IS POSSIBLE TO RECONCILE CONFLICTING NEEDS FOR FREEDOM AND CONTROL”

One such development is the advent of commitment-making: commitments are a means by which people in a company can communicate to one another about what they will do, how they will do it and how they will be held accountable for it. At Californian company Morning Star, all team members are self-managing professionals. At the core of this working model are personal mission statements: every year, each Morning Star employee negotiates a Colleague Letter of Understanding with the associates who are most affected by his or her work. It is essentially an operating plan in which

the employee takes responsibility for initiating communications and the coordination of their activities with fellow colleagues, customers, suppliers and industry participants. It demonstrates that, with a bit of imagination, it is possible to reconcile conflicting needs for freedom and control and create a highly effective and deeply human organisation.

Of course, there are some aspects of the world of work that never change. Work can be a source of excitement, purpose and productivity and also of frustration and exhaustion. In my view, tomorrow's workplace can help us develop the inner resilience that we need to tip the balance firmly in the direction of the former. Our future working lives will be characterised by empowerment, flexibility and collaboration, all of which will help us adapt to the combined forces of technology and globalisation that are shaping the world in which we work.

Across the world, there is much debate about who is responsible for supporting these profound changes. Is it up to corporations to reach out to train students, governments to support job-ready skills, or young people to jump into high-value occupations? In India, where tertiary education is poor, corporations including TCS, Infosys and Wipro are forming alliances to develop curricula, train teachers and build classrooms, thus affecting the lives of millions of young people. In Singapore, the government has created groups that include representatives from educational establishments, corporations and government ministries, to coordinate and 'signal' to the student community those skills that will be most valuable in the future, with a major focus on science, technology, engineering, and math (STEM) skills. In Germany, the well-oiled apprentice system places thousands of young people every year into craft-based training, often with a technology and engineering focus.

Looking back to my own stumbling response to technology and globalisation, it is clear that if individuals, families, corporations and indeed countries are to take their place in this new world of work, they will need a great deal more foresight, determination and coordination than we ever needed those four decades ago. ■

FELLOWSHIP IN ACTION

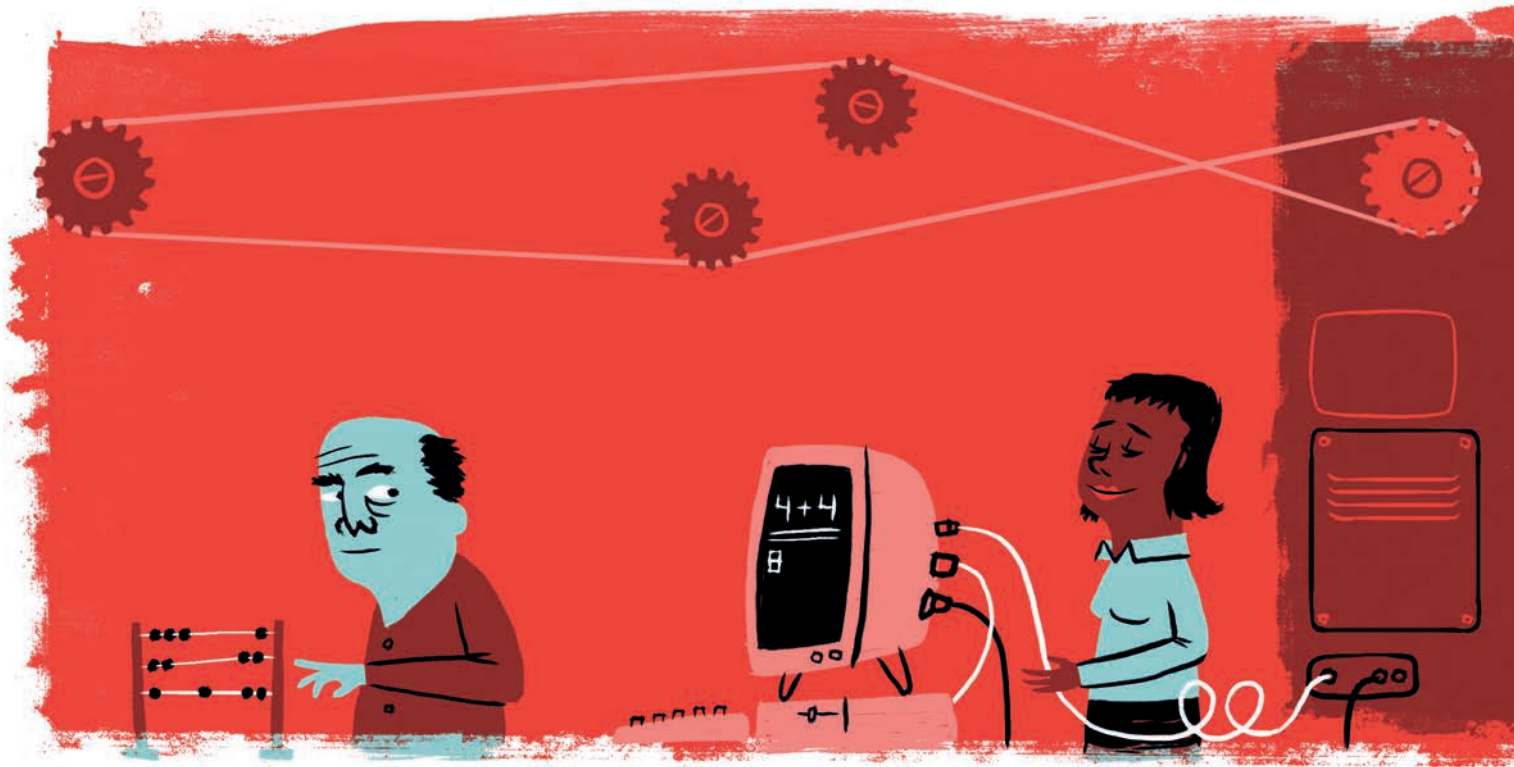
MEET YOUR MATCH

It was during a difficult period in 2009 while trying to change careers that Neil Bachelor was inspired to set up Omnifolio, a psychometric job-matching service which aims to help people identify their individual skillsets. "It's about trying to help people understand more about themselves and their transferable skills," said Neil. "We then match that against existing job roles, identifying any potential skill gaps so they can undertake formal training or whatever may appropriately fill those gaps."

With a background in occupational assessment, Neil hopes Omnifolio's data-driven approach will ultimately bring "Wikipedia-style disruption" to labour markets by helping employees understand better the sorts of jobs and working environments that will suit them, while giving employers more confidence when making hiring decisions.

Funding from the RSA to develop the website and create a video has been crucial. "The RSA has been fantastic at putting me in touch with people," said Neil. "Within a few days of me applying for the Catalyst programme, I was speaking to Tony Watts, one of the world's leading career guidance experts."

■ *To get involved, visit www.omnifolio.org*



WORK IN THE DIGITAL AGE

The future world of work promises a new age of automation. So where exactly do humans stand in a 21st-century labour market?

by Carl Benedikt Frey and Thor Berger

Over the course of the 20th century, technological advances translated into unprecedented increases in living standards for the vast majority of workers in each successive generation. Yet today, less than one in five workers in America believe that the generation currently entering the labour market will lead better lives than themselves. As formerly middle-class jobs have been automated away, the US economy has experienced stagnant wages and falling employment. While the digital age may have brought undisputable gains for consumers, there is increasing concern that innovation has taken a turn on labour. This raises questions about the US economy's capacity to create meaningful and self-fulfilling jobs for workers in the future.

In his famous chapter on machinery, published in the third edition of *The Principles of Political Economy and Taxation*

in 1821, the British economist David Ricardo argued that the substitution of workers by machines may “render the population redundant”. Although the idea of technological unemployment did not materialise during the 20th century, there is growing concern that Keynes’ prediction of mankind failing to find uses for its labour is now coming true.

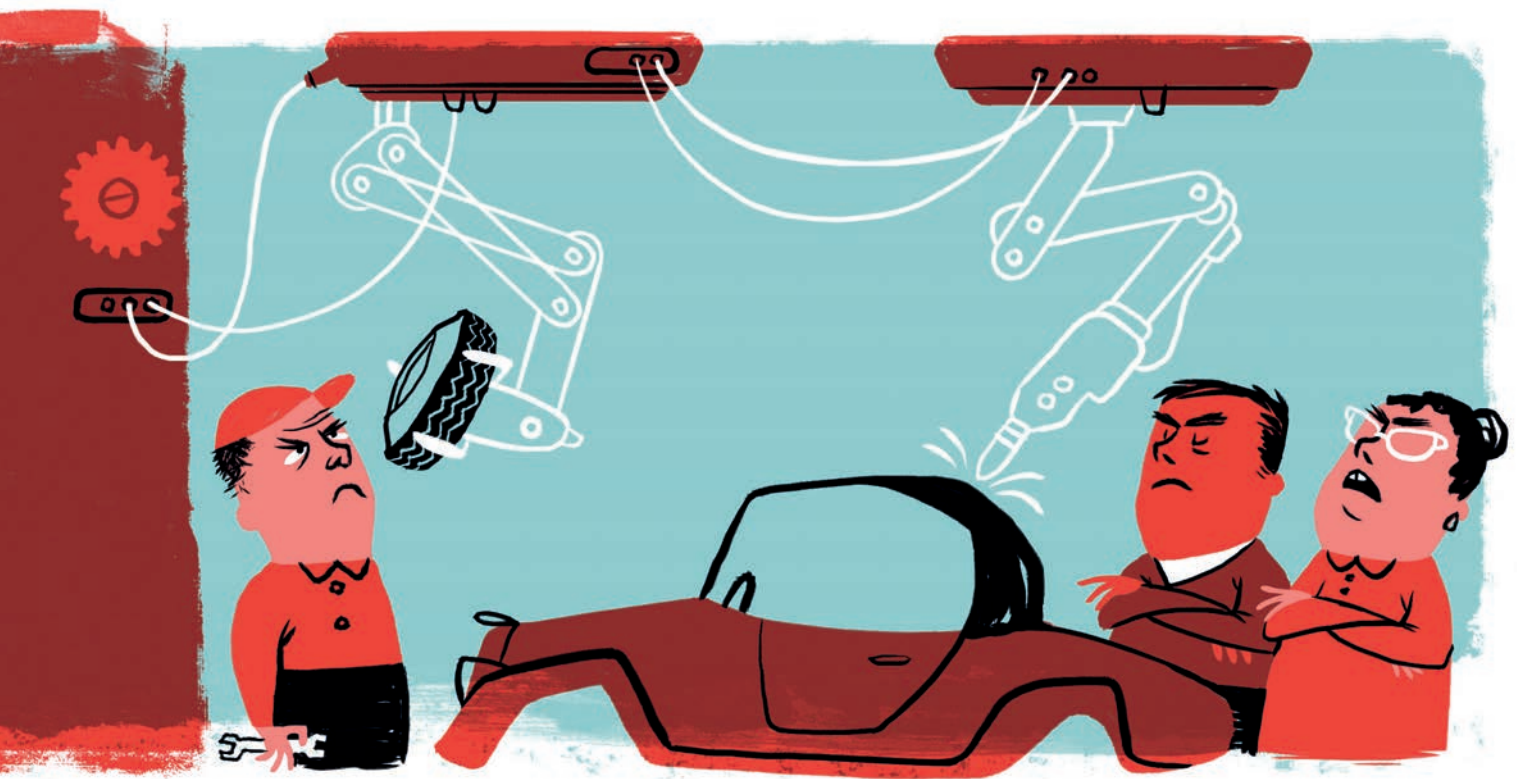
This concern reflects the expanding scope of work that computers are able to perform. In the past, they have been phenomenal at performing tasks that can easily be subdivided, routinised and expressed as a set of programmable rules, but less so where work cannot easily be simplified into rule-based activities. Hence, as industrial robots have replaced manufacturing workers in performing routine tasks along assembly lines, many low-skilled workers have been reallocated to jobs consisting of unstructured manual tasks, such as occupations in the services and transportation sectors.

Computers, however, are increasingly making inroads into domains not long ago perceived as inherently human. Rapid advances in machine learning and mobile robotics, associated with the increasing availability of big data, are making an increasing number of complex tasks automatable, by transforming them into well-defined problems.

Driving a car in rush-hour traffic, for example, was long seen as something a computer would never be capable of – emulating human perception has been a central challenge to programmers for decades.

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ILLUSTRATION: ADAM NICKEL



Yet, driverless cars are today roaming the Californian highways. Similarly, computers are increasingly encroaching on the jobs of physicians, most prominently exemplified by Watson – the IBM supercomputer that beat the human champions of Jeopardy! – which is now being retrained as a doctor. With the capacity to store all available medical information, digital diagnosticians may fundamentally alter the medical profession.

Even complex scientific processes of hypothesis generation and testing are increasingly within reach for computers. Recently, KnIT, a system that mines scientific literature, was demonstrated to be able to generate novel and experimentally testable hypotheses from existing data. Doctors and scientists are unlikely to be out of work soon, but the tasks they carry out may change dramatically in the near future.

Against this background, a 2013 Oxford Martin School study by Michael Osborne and one of the authors (Carl Benedikt Frey) shows that 47% of US workers could be replaced by computer-driven technologies over the coming decades. The study suggests that a wide range of occupations are susceptible to computerisation, including jobs in administration, transportation, logistics, services and sales. Workers in these jobs are typically less educated and earn lower incomes, suggesting that the next generation of big data-driven computers will mainly affect those in low-skill jobs, exacerbating already growing inequality. By contrast, the manufacturing technologies of the Industrial Revolution largely substituted for skilled labour, as the artisan shop was replaced by the factory system. The computer revolution of the

20th century, on the other hand, caused the hollowing-out of middle-income jobs once created by the Industrial Revolution.

Workers who see themselves replaced by machines will need to shift into jobs that are less susceptible to computerisation. As many of the safe havens for low-skilled workers are now disappearing, this will provide a challenge. Despite recent technological advances, work requiring human creativity and social intelligence – skills where humans will hold a comparative advantage – will be the jobs of the 21st century. For workers to stay competitive in the labour market, they will have to acquire social and creative skills.

NEW WORK IN THE 21ST CENTURY

While technological change destroys old jobs, it also creates employment opportunities in entirely new occupations and industries. Consider the example of the computer itself. With its origins in the 18th century, the term ‘computer’ initially referred to an occupation; literally, one who computes. The coming of the electronic computer meant that the routine activity of carrying out repetitive calculations by human workers gradually was transferred to machines, freeing up human workers to perform less dreary and mind-numbing tasks. Yet at the same time, the computer created many new occupations, such as computer programmers, database administrators and software engineers.

As computers have displaced secretaries, assembly-line workers and cashiers, a central question is to what extent are employment opportunities created by the digital revolution able to replace the jobs made redundant? >>



Historically, revolutionary technologies such as the automobile and the railroad have created vast employment opportunities. Relatively speaking, however, the technologies of the digital revolution have created little new work. A recent study found that less than 0.5% of the US labour force is employed in technology-driven industries created since the turn of the century, such as internet auctions, web designing and video and audio streaming. These industries have not created many jobs for ordinary workers: people working in digital industries are much better educated than the average population and earn more than twice the US median wage. Such high-skill demands make it unlikely that these jobs will provide the opportunities that the 20th-century factory floors did for the many.

RISKS AND OPPORTUNITIES

While the digitalisation of the economy poses a number of challenges, it also presents a wide range of opportunities. The concentration of entrepreneurial talent has been the engine of progress over recent decades, with Google, Facebook, Bloom Energy and Tesla Motors all based in Silicon Valley. Nevertheless, the digital revolution has reduced the cost of distance, easing interactions across locations. As a result, those in geographically distant places have unprecedented access to global markets and information.

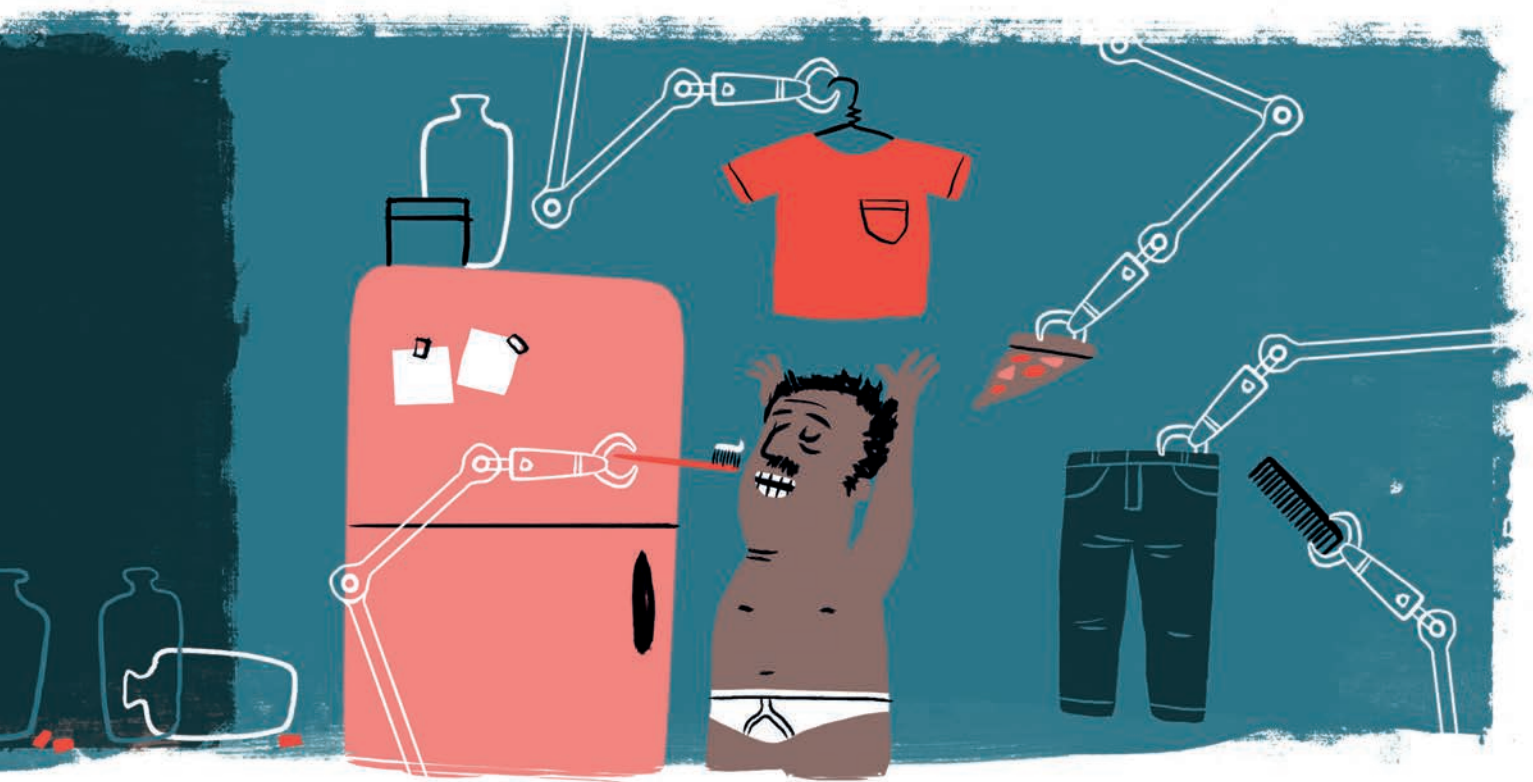
Most digital products can in principle be produced anywhere for a global market. Even more traditional goods have become increasingly mobile. Online marketplace Etsy, for example, allows small-scale artisans to reach customers

all over the world through its online marketplace. For the geographically isolated, the internet provides unparalleled possibilities for self-realisation and to apply their ingenuity to solving problems. Thus, while location is still important, geography is no longer the limiting factor it used to be.

Digital technologies offer the possibility of making education and training available more cheaply. Online training has grown exponentially, with the proliferation of Massive Open Online Courses (MOOCs), and many Ivy League universities provide free online lectures by the world's leading instructors. In this digital age, a high-quality education is available to anyone with a computer and internet access. Though it remains to be seen how these training programs can be made more effective, policymakers would do well to support the development of alternative ways of retraining and educating workers.

Similar advances in finance, such as peer-to-peer lending and crowdfunding, mean seed funding has become more available to entrepreneurs. Crowdcube, for example, provides an alternative to banks, business angels and venture capitalists, by allowing start-ups to access seed funding from 'the crowd'. Additionally, digital innovation requires less capital; according to a recent survey of mobile app developers, the average cost of developing an app was \$6,453. This makes becoming an entrepreneur open to more ordinary people.

Although these developments offer a wide range of opportunities, a number of challenges lie ahead. As the pace of technological progress becomes ever faster, lifelong careers are likely a thing of the past. Since the early 1970s, the average tenure of male workers has declined by 25%,



suggesting that while our parents had careers, in the future we'll have gigs. Moreover, within five years, Millennials – the generation in their late teens to early 30s – will constitute half of the workforce; a generation steeped in digital technology, with demands for more flexible jobs. To accommodate a more flexible labour market, welfare systems must be redesigned

to accommodate the changing norm away from full-time, lifelong employment. Social safety nets should encourage entrepreneurial risk-taking and ease shorter stints in the labour market, with more frequent shorter spells of unemployment.

A more fundamental concern is the existing political, economic and social interests invested in maintaining the technological status quo. While legal and regulatory barriers to new technologies may protect jobs in the short term, these will reduce the long-term prospects for growth if they stifle innovation and arrest technological progress. It is time for a grand bargain that supports progress, while also addressing the related challenges through policy actions that build a more inclusive society.

Some 150 years ago, western societies began their economic transformation as millions left agriculture for a life in the bustling industrial centres. In the 19th century, 80% of US workers were employed in agriculture. Today, that number is less than 2%. Anyone predicting how the labour market would change over these 100 years would be hard pressed to envision the new work created. That droves of new jobs would be created in the industrial cities to soak up the millions who left the countryside would be nearly unthinkable.

Today, we stand at the brink of a similar technological revolution. The future of work will look very different to the factory floors of the 20th century. How we manage this transition boils down to how well we adapt and while the challenges today are no less daunting, history shows that where creativity and human ingenuity meet them, economic growth and wellbeing improve at an unceasing pace. ■

FELLOWSHIP IN ACTION

FILLING THE GAPS

Black Country Atelier (BCA) is a team of designers, engineers and scientists who visit schools and colleges to share their passion for smart technology with students. Designer and founder Jing Lu started BCA after realising there was a gap between industry practice and what pupils were learning. "The students were really hungry for modern design tools like computer aided design and manufacture," explained Jing.

Taught by industry specialists, students learn the practical application of modern design tools. "We want to develop these projects and lead interested students into work placements and real practice to stretch them," said Jing.

A generous grant from the Comino Foundation is supporting BCA's three-year 'Manual of Modern Making' project. Dedicated to working with four RSA Academies, it aims to transform students' learning of design and technology using the latest techniques in digital fabrication technologies.

■ Find out more at www.blackcountryatelier.com



OUT OF OFFICE?

More and more people are working for themselves, but are they choosing to leap or are they being pushed?

by Benedict Dellot

Self-employment is the economic topic du jour. Barely a week goes by without another news article or opinion piece lauding or lamenting it. The reason? The number of people working for themselves is booming. The self-employed community has grown by almost a third since 2000 and by more than half a million since the economic crash in 2008. One in seven people can now say they work for themselves.

Some have questioned whether this really is such a dramatic increase, given that the total proportion of the workforce that is self-employed has only grown from 13% to 15% during the recessionary period. But a couple of percentage points mean big numbers in a big economy. Indeed, since the start of this year, 220,000 more people became self-employed; the equivalent of all the residents of Brighton setting up shop in the space of a few months.

So what is behind the rapid increase? The answer, of course, depends on who you talk to and what you read. For those on the left, including many in

the trade unions, the growth in self-employment is indicative of a deeper malaise in our economy, with many people forced to create their own jobs in the absence of conventional ones. Here, the talk is mostly of odd jobbers who are scratching around for work and yearning for more secure employment.

The reality is a little more complex, and the notion that most of the newly self-employed have been forced into that position has little grounding. A recent RSA/Populus survey found that only 27% of those who started up in business in the past five years did so to escape unemployment; a considerable minority, but a minority nonetheless. Likewise, there is little to back the claim that the ranks of the self-employed are being swelled by droves of low-skilled jacks-of-all-trades. The largest increases in self-employment have actually come from the professional occupations.

This is not to say that the opposite is true. Many on the right believe that the boom in self-employment is testament to a resurgent entrepreneurial spirit, and will cite success stories of start-ups in Silicon Roundabout as evidence. But again, hyperbole does not always reflect reality. The vast >>

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“STUDIES SUGGEST THE SELF-EMPLOYED ARE HAPPIER IN THEIR WORK AND MORE CONTENT OVERALL IN THEIR LIVES”

majority of the newly self-employed run one-person businesses, and few will ever take on staff or become fast growing start-ups. The RSA’s segmentation of the self-employed community identified six tribes, only one of which – the ‘Visionaries’ – exhibits significant high-growth intentions.

UNDERSTANDING THE BOOM

The growth in self-employment lies as much in structural changes to our economy as it does in the short-term cyclical fluctuations of the past few years. The number of people working for themselves has in fact been growing year on year since at least the turn of the century. One reason for this is that the UK economy has continued to shift away from manufacturing towards service industries, where small businesses and their owners are better able to thrive.

Another major long-term factor is the increasing sophistication of technologies. Simply put, the advent of the internet and its related platforms have sent the cost of doing business into freefall, in part because of the diminished need for bricks and mortar premises and marketing spending. Not only has this been beneficial for those hoping to start conventional businesses, it has also made it viable to run a part-time business in just a few hours a week. The number of people running ‘5–9’ ventures on top of their day jobs continues to grow, aided in part by sites like e-commerce website Etsy and other ‘sharing economy’ platforms.

Shifting demographics have also had a noticeable impact on the self-employment figures. There is an emerging consensus among commentators, for example, that our ageing population is one of the biggest drivers of the boom. A greater number of healthier retirees means more people are able and willing to work past the age of 65, whether it be to keep their minds active or to top up their pensions. The number of over-65s in self-employment has expanded by 140% since 2000, more than double the rate of growth seen in any other age group.

Furthermore, the UK is experiencing a baby boom, with the number of births in 2012 reaching its highest level in more than 40 years. One of the by-products of this is a new wave of parents looking for working patterns that offer them greater flexibility in caring for their children. Another demographic



driver has been the sustained level of immigration into the country. The number of migrants entering the UK each year has rarely dipped below the half million mark over the past decade, and many of these will have started their own business upon arriving. Immigrants and their children are more than twice as likely as British-born citizens to work for themselves.

Important cultural changes in our society are having an impact too. The political scientist Ronald Inglehart argues there has been a gradual shift since the 1970s from ‘materialist’ to ‘post-materialist’ values, where people prize autonomy and self-expression over tangible possessions. Likewise, Moisés Naím has written of an ‘expectation revolution’, whereby increasing access to travel and communication tools has exposed people to new ways of living and working. This has fuelled people’s desires to escape the hierarchy and work for themselves.

A WELCOME TREND?

There is, then, no simple or straightforward explanation for the increase in self-employment – new mindsets, shifting demographics and changing consumer desires having all played a part. What is clear is that the trend is likely to stay with us for the foreseeable future. Indeed, based on the growth rates of the past few years, the RSA estimates that the number of people working for themselves could outgrow the size of the public sector workforce as early as 2018. Self-employment may soon become the new normal.



This raises the question of whether self-employment is really such a good thing, and a form of work we should encourage. A cursory glance at the statistics suggests that going it alone can be financially precarious. The full-time self-employed earn a fifth less than their counterparts in typical employment, and their income has fallen by 10% in real terms since the turn of the century. Even accounting for misreporting and undeclared earnings, deciding to be your own boss is likely to leave you out of pocket.

This is to say nothing of the wider benefits that self-employed people forgo, including employer contributions to pensions, sick pay, training and maternity cover. According to one estimate, the loss of employer contributions to pensions amounts to more than £90,000 over the course of a lifetime. Then there is the important, yet often overlooked issue of isolation: working for yourself can mean being cut off from the wider world for days at a time.

Nonetheless, studies suggest the self-employed are happier in their work and more content overall in their lives. The RSA/Populus survey found that more than 80% of people who work for themselves say they are more satisfied than they would be in a conventional job. Indeed, the government's wellbeing measurements show the self-employed are the happiest and least anxious of all labour groups, except retirees. One study suggests that the number of hours worked during the start-up period is positively correlated with job satisfaction.

A similar paradox applies to the attitudes of the self-employed to job security. Interviews conducted during the RSA/Populus survey indicated that, contrary to what one might expect, many of the self-employed feel they are more secure, not less. While working as an employee exposes you to the whims of management and shareholders, it seems that the self-employed feel that the degree to which they are successful depends largely on their own actions. Moreover, one of the benefits of self-employment is that you are likely to have multiple streams of income; if one dries up there may be others to tap into.

The fulfilment that self-employment can offer is of course partly explained by the freedom and autonomy it confers. Answering only to yourself, working on your own terms and setting your own hours are all inherently valuable traits of work that serve to boost wellbeing. But there are other tangible benefits to being self-employed, including the flexibility to care for your loved ones, more control over factors that affect your own physical and mental health and, in some cases, the option to live where you would like. It is not difficult to see how these benefits will become increasingly important as our society ages and chronic health conditions become more and more commonplace.

Then, there is the meaning that comes from working for yourself to consider: running a business is a very rich human experience. Beyond purely making a profit and earning a living, the real draw of self-employment lies in the sense of purpose it provides, and the opportunity to leave your mark on the world. The very act of selling your services can be a hugely rewarding and validating experience.

This speaks to a simple but fundamental truth: that the path to happiness comes from an active life rather than a passive one, even if the latter may be an easier option. For many, deciding to go it alone is a creative compromise. They forgo material benefits, often work very long hours and seldom take long holidays. But they are willing to endure this hardship – even revel in it – for the sake of greater freedom and meaning, or, in the words of John Steinbeck, for the chance to “bite deep into living”. The debate about the pros and cons of self-employment will doubtless rumble on, but we should not forget the basic human urge at the heart of it. ■



JOB'S WORTH

*When it comes to being happy, work is key.
But finding fulfilment may be more within our
control than we think*

by Sonja Lyubomirsky

“THE CAUSAL ARROW BETWEEN HAPPINESS AND WORK CAN RUN BOTH WAYS”

It is a well-known and oft-repeated ‘fact’ among psychological researchers that interpersonal relationships show the highest correlations with happiness. In other words, the most significant and striking attribute of a happy person is the strength of their friendships, familial bonds and intimate relationships. Thus, imagine my surprise when I discovered something quite different while doing a meta-analysis (a ‘study of studies’) of 225 investigations of wellbeing. What I learned was that one factor actually towered over social life in its connection with happiness. That factor was work.

Of course, it is not just any type of work that makes people happy; it is rewarding and successful work. Indeed, fulfilling jobs, a productive worklife and a comfortable salary contribute to a worker’s happiness in myriad ways. The cross-sectional evidence, for example, demonstrates that people who have jobs characterised by autonomy, meaning and variety – and those who show superior performance, creativity and productivity on the job – are significantly happier than those who do not. Supervisors are happier than those lower on the totem pole, and leaders who receive high ratings from their customers are relatively happier as well.

The income that a job provides is also associated with happiness, though perhaps not as highly as many of us would expect. Most surveys report correlations between income and happiness in the range of .13 to .24 (small yet statistically significant), but those correlations are higher for people whose financial situation is dire, uncertain or fails to meet their basic needs. In other words, money has more of an impact when it keeps us from being poor.

Of course, work affords us much more than income and the promise of prosperity. It offers a sense of identity, structure to our days and significant and meaningful life goals to pursue. Last but not least, work supplies us with close colleagues, friends and even spouses or partners. The loss of all these things – which we may often take for granted – is highlighted when an individual loses his or her job. For example, a 15-year investigation of 24,000 German residents revealed that those who became unemployed at some time during the study saw their wellbeing plummet and never quite recover.

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However, the causal arrow between happiness and work can run both ways. That is, not only do productivity and creativity at the office make people happy, happier people have been found to be more productive and creative, better organisational citizens and less likely to suffer burn-out. The most persuasive data regarding the effects of happiness on desirable work outcomes (as opposed to vice versa) comes from longitudinal studies. For example, those who rate themselves as happy at age 18 achieve greater financial independence, higher occupational attainment and greater work autonomy by age 26. Furthermore, the happier a person is, the more likely she will be to secure a job offer, retain a job and become re-employed if she ever loses it. Finally, as one intriguing study has revealed, those who show more positive emotions on the job receive more favourable evaluations from their supervisors three and a half years later.

The same point about causality applies to income. Not only does greater wealth make people happy, happy people appear to be more likely to accrue greater wealth in life. Research has demonstrated that the happier a person is at one period in her life, the higher income she will earn at a later period. In one of my favourite investigations, researchers showed that those who were happy as college freshmen had higher salaries 16 years later, when in their mid-30s.

Before we find yet another reason to be envious of very happy people – not only do they get to feel good, they get to have good jobs as well! – consider what the research on happiness and work suggests. It suggests that, when it comes to work life, we can create our own ‘upward spirals’. The more successful we are at our jobs and the better the work environment we have, the happier we will be. This increased happiness will foster greater success and an improved work environment, which will further enhance happiness, and so on and so on.

Many of us believe that we would be happier if we didn’t work, and many of us are wrong. No matter what type of work you do, know that it can provide a great deal of happiness and satisfaction, if you make it so. It is up to you to change how you perceive your work (for example, as a job, an important career or a true calling); how enthusiastically, creatively and productively you engage in it; and what you make of it. Research suggests people who are unhappy with their current job will likely be unhappy with their next one. ■

towards self-employment is a good thing? Could a world where many people are self-employed represent the kind of new approach to work that you advocate?

ZELDIN: It is interesting that the desire to be self-employed is higher in the US, Britain and other wealthy countries than it is in, say, south-east Europe. When people are emerging from centuries of precarious poverty, they place greater value on the payment of a salary at the end of each month and will do anything to earn that regular income. Then, of course, they feel that regularity chains them down too much and they want to escape. I have been doing some work in London, where I observe how it is increasingly difficult to sustain a small independent business providing a local service. Rents are too high and price competition from multiple chains and the internet too severe. Immigrants in particular are helping to revive the traditional, more sociable idea of a small business, offering personal relationships to customers who often come in just for a chat, not necessarily to buy, in search of a community spirit. It is the very opposite of what supermarkets offer, but poor communities have little money to spend to keep such shops alive. Middle-class young people who try to earn an independent living by offering personal services to those who have money often have a hard time too.

My answer is that self-employment on the margins of dominant big organisations is a temporary and partial solution. So too are legislative or financial encouragements to self-employment. I am investigating what each occupation, and each sub-profession, can do. I am inviting firms in each industrial and commercial sector to investigate how their own speciality can pioneer new practices that would be

FELLOWSHIP IN ACTION

PAINTING A PORTRAIT

Could you help change the way we think about work? During his conversation with Matthew Taylor, Theodore Zeldin laid down a specific challenge for the Fellowship: "The RSA has people with interesting jobs in different professions and they are interested in how else things could be. I'd like to invite each to explain their aspirations in the light of what experience has taught them and to collaborate with the Future of Work programme at Oxford University to see how those aspirations could become reality.

"Our project involves people creating self-portraits by talking to a student who will record it and submit a text. The benefit for students is that they visit people in a variety of occupations and discover what work is really like, supplementing the narrow focus of their academic speciality. We then invite firms to carry out small experiments alongside their main activity, so that they can say 'Look! This is how things could be.' The RSA Fellowship could be doing what Robert Owen did in New Lanark: trying out something different."

■ To get involved, email info@oxfordmuse.com

attractive to the next generation. In science and technology, it is normal for firms to devote substantial sums to research and development, even though only a minority of their efforts will be successful. Research and development is also needed into new kinds of interaction with workers and customers. I am trying to get firms to establish such experimental units on a small scale, side by side with their normal activities. We cannot invent solutions out of our heads; we have to try things out.

TAYLOR: I want to move on to the topic of conversation. What do you see as the relationship between interpersonal conversations and the national conversation? It feels at the moment that the national conversation in politics and the media is shriller, more negative and more polarised than ever before. How does that relate to the kind of conversations we are having in pubs, in shops, at home and in workplaces?

ZELDIN: I think the word 'conversation' is being misused. There is no genuine conversation when people speak but ignore or misunderstand what others say. One vote for every person is only a beginning, particularly when 49% of an electorate may not be listened to. The great hunger today is to feel recognised, appreciated and understood as an individual, which requires intimate personal knowledge. I have organised face-to-face conversations in innumerable organisations and enterprises, bringing together people in pairs who know each other only superficially or not at all, and I am constantly astonished by how they lament the rarity of opportunities to discuss what matters most to them and value the guidelines of the 'Menu of Conversation', which prevents them lapsing into gossip or repetition of bee-in-the-bonnet obsessions. As for pubs, a brewer's survey revealed only a fifth of pub-goers had satisfying conversations there.

TAYLOR: We have a new worldview that we call the power to create. At its heart is the idea that we have an opportunity for all citizens to live lives of which they are the authors. That Aristotelian notion of the good life has, until recently, been something only the elites of society could aspire to, but we now can imagine a time when it is available to all. We are acutely aware of the barriers to this in the existing concentrations of power and wealth, in our institutions and in the continuation of elitist notions such as the idea that only a certain number of jobs can be creative. Do you broadly subscribe to the idea that we could reach a point where all citizens can live that kind of rich, substantive life?

ZELDIN: I don't think that one can be the sole author of one's own life; one needs the input of other people. It is not only poets who need a muse. We have so far believed there are only two choices: collective action or individual initiative. I have been exploring the role of the couple, not just those who fall in love, but also couples of the mind who develop the skill of drawing inspiration from one another, in conversation or from reading, including



“WE CANNOT INVENT SOLUTIONS OUT OF OUR HEADS; WE HAVE TO TRY THINGS OUT”

from people with whom they disagree. Dividing people into supporters and opponents is not the only way to get nearer to the truth.

TAYLOR: If you had to choose one idea of yours to put up in lights in Piccadilly Circus forever, which idea would it be?

ZELDIN: I would put one word in Piccadilly Circus, and it would be ‘think’. We have developed a great resistance to thinking. Thinking is a social activity; it is allowing other people’s ideas to come into your head, mashing them up with your own and therefore becoming a more sociable person. ‘Reason’, the word that I would have put up in the 18th

century, has discredited itself by making so many mistakes, and so we have replaced it with ‘feeling’; we aim to ‘feel good’ no matter what we think. But we have brains – that is what makes us uniquely human – and we are capable of doing amazing things with them, so I would like to restore thinking to its place of honour. ■

Theodore Zeldin’s new book, The Hidden Pleasures of Life, linking the evolution of work with new perspectives on relationships, national and religious loyalties, gender and generational challenges, will be published in March 2015. To pre-order a signed copy of the book, email info@oxfordmuse.com

SPEED TRAPS

Our modern-day obsession with speed is putting both our minds and the world's resources under unparalleled pressure – is it too late to get off this ride?

by Mark C Taylor

Call waiting, endless conference calls, mandatory Skype meetings no matter where you are or what time it is, urgent weekend business trips to deal with what could have waited until Monday, just-in-time everything, sleeping with the smartphone beside the bed, checking email at night, longer and longer workdays week after week, without a break.

In 'real' time, everything speeds up until time itself seems to disappear; fast is never fast enough, it has to be done now, instantly. To pause, delay or stop is to miss an opportunity and give a competitor the edge. Speed becomes the measure of success: faster chips and computers, faster networks and transactions, faster product cycles, brains and kids. Faster lives.

The cult of speed is a modern phenomenon. In his Futurist Manifesto, Filippo Marinetti declared: "We say that the world's magnificence has been enriched by the beauty of speed." A profound shift in cultural values occurred with the advent of modernity and modernisation: with the emergence of industrial capitalism, the primary values governing life became work, efficiency, utility, productivity and competition. When Frederick Winslow Taylor took his stopwatch to the factory floor to increase the efficiency of workers' activities, he began a high-speed culture of surveillance so memorably depicted in Charlie Chaplin's *Modern Times*. Then, as now, efficiency was measured by the maximisation of rapid production through the programming of human behaviour.

With the transition from mechanical to electronic technologies, speed increased significantly. The telegraph, telephone and stock ticker liberated communication from the strictures

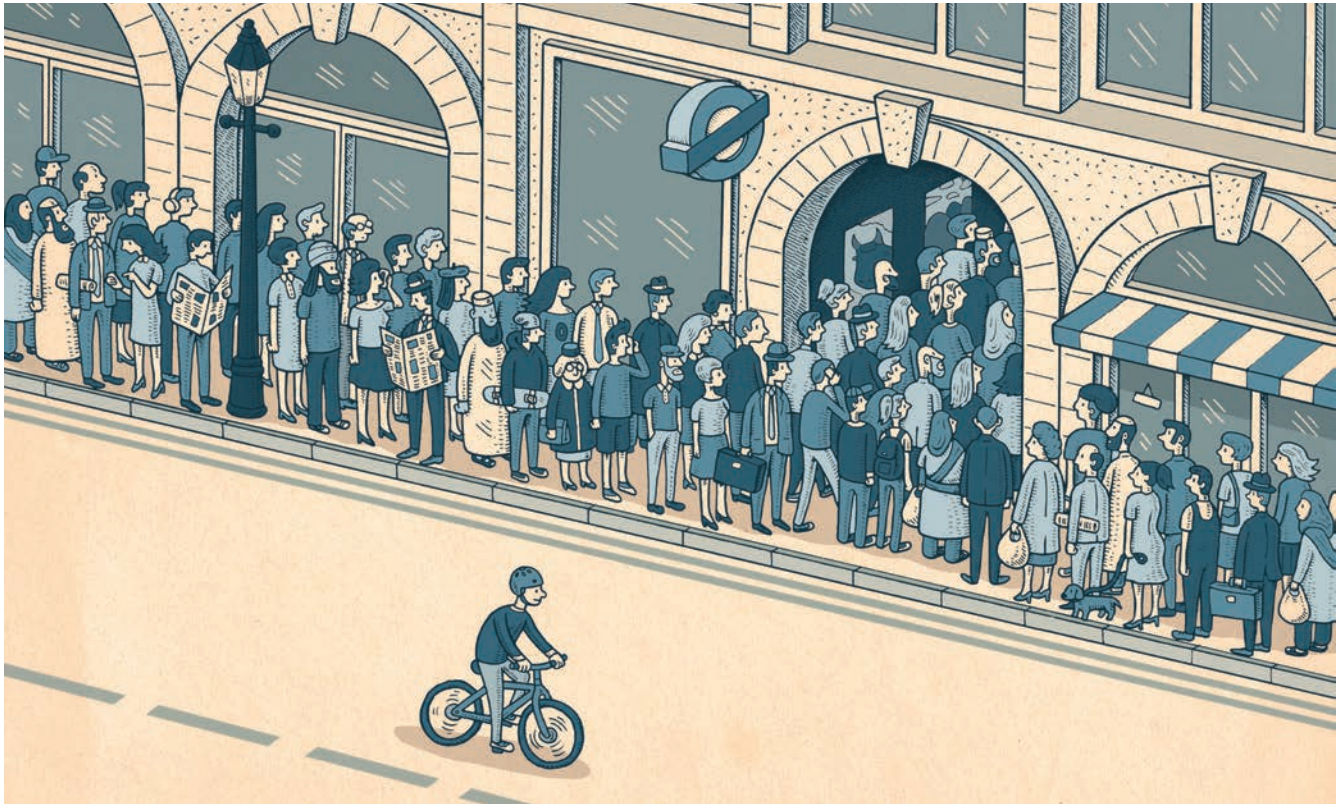
imposed by the physical means of conveyance. In previous energy regimes, messages could be sent no faster than people, horses, trains, ships, automobiles or airplanes could move. Immaterial words, sounds, information and images, by contrast, can now be transmitted across great distances at very high speed. During the latter half of the 19th century, railway and shipping companies established transportation networks that became the backbone of national and international information networks. Once the transatlantic cable (1858) and transcontinental railroad (1869) had been completed, the foundation for the physical infrastructure of today's digital networks was already in place.

Fast-forward 100 years. During the latter half of the 20th century, information, communications and networking technologies expanded rapidly and the transmission speed increased exponentially. But it wasn't just data and information that were moving faster. Moore's Law – according to which, the speed of computer chips doubles every 18 months – now seems to apply to life itself. The faster we go, the less time we seem to have.

There is a profound irony in these developments. With the emergence of personal computers and other digital devices in the late 1960s and early 1970s, many analysts predicted a new age in which people would be drawn together in a 'global village', where they would be freed from many of the burdens of work and would have ample leisure time to pursue their own interests. This was not merely the dream of misty-eyed idealists but also the prognosis of sober scientists and policymakers. In 1928, John Maynard Keynes delivered a lecture to impressionable undergraduates at the University of Cambridge in which he confidently predicted that: "For the first time since his creation, man will be faced with his real, his permanent problem; how to use his freedom from pressing economic cares, how to occupy the leisure, >>>

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which science and compound interest will have won for him, to live wisely and agreeably and well.” In 1956, Richard Nixon forecast a four-day work week in the near future, and a decade later, a Senate subcommittee heard expert testimony that, by 2000, Americans would be working only 14 hours a week.

Obviously, things have not turned out this way. The technologies that were supposed to liberate us now enslave us, and Henry Ford’s policy of eight hours’ work, eight hours’ leisure, eight hours’ rest seems a quaint memory of a bygone era. Where, once, social status was measured by how little a person worked, today, it is often measured by how much a person works. If you willingly unplug to recuperate, you become an expendable slacker.

While these changes are driven by social, political, economic, and technological forces, they are also inseparable from a new form of financial capitalism that has emerged in the past several decades, at the heart of which lie three interrelated values: individualism, growth and speed.

Financiers from the Gilded Age of the late 19th century up until the Reagan/Thatcher and Clinton/Blair eras have been committed to the ideology of competitive individualism, which encourages competition at the expense of cooperation. Increasing competition is supposed to lead to greater economic growth. And there are three ways markets can expand to create this growth: spatially, through opening new factories and stores in new places (more than 35,000 McDonalds in 119 countries); differentially, by creating a variety of products to increase consumer choice (48,000

different items in the average American grocery store); and temporally, through accelerating the product churn (three-week product cycle in Zara stores). When spatial expansion and differential production reach their limits, the dominant strategy for growth becomes increasing the speed of economic transactions. We have been conned into the addiction to speed by a financial system that creates endless desire where there is no need.

The social, economic, psychological and environmental consequences of this are profound. The much-discussed wealth gap is, in fact, a speed gap; different economies operate at different speeds. In previous forms of capitalism, wealth is created by selling labour or stuff; in financial capitalism, wealth is created by trading signs that are financial or monetary signs of other signs such as options, derivatives, swaps, collateralised mortgage obligations and Bitcoins. With the advent of algorithmic trading, such virtual assets grow much faster than real assets. A worker can produce only so many motorcycles and a teacher can teach only so many students but, in high-speed, high-volume markets, billions of dollars are won or lost in nanoseconds. Wealth begets wealth at an unprecedented rate. No matter how many new jobs are created, the wealth gap created by the speed gap will never be closed unless there is a fundamental change in values.

Changing demographics in the coming decades will compound these problems. While the financial economy grows at an accelerating rate, there will be increasing demands for human services like education and healthcare. For the past several decades, the best and the brightest students have

“THE VALUES THAT HAVE ALLOWED WESTERN CAPITALISM TO THRIVE NOW THREATEN ITS FUTURE”

headed to Wall Street rather than the classroom and, with a growing elderly population, the healthcare system faces similar problems. In both sectors, digital and networking technologies can help meet these demands, but cannot replace the vital role of human beings whose labour does not scale at the rate of virtual assets. Financial incentives will have to be increased and supplemented by greater government support.

In addition to the economic and social effects of speed, it is important to stress the psychological consequences. The stress and anxiety of managers trickles down to workers, and the anxiety of parents trickles down to children. As new technologies continue to invade our lives, the list of maladies attributed to their use continues to grow. Nowhere is this problem more evident than in what can only be described as an epidemic of attention-deficit-hyperactivity disorder (ADHD), especially in children and young people. Physicians, concerned about the inability of their patients to concentrate, freely prescribe Ritalin, which is speed, while students staying up all night to study take Ritalin to give them a competitive advantage. Rather than resisting these pressures, parents exacerbate them by programming their children for what they believe will be success, from pre-kindergarten.

Finally, commitment to endless high-speed economic growth creates unsustainable pressure on the earth's limited resources. Expanding the market by accelerating product cycles creates an enormous amount of waste, much of which is toxic and cannot be recycled. Many western countries 'solve' their e-waste problem by exporting it to China and Africa, where environmental restrictions are more lax and, therefore, the pollution is much greater. In addition, the rapidly expanding virtual economy requires a continuous supply of precious metals, sources of which are dwindling, and consumes vast amounts of energy, most of which not clean. To guard against the possibility of even an instantaneous delay, companies operate huge server farms, which use only a fraction of their capacity, to back up their systems. Since these facilities run on fossil fuels, this massive waste of energy is contributing to the acceleration of climate change at an alarming rate.

It is now necessary either to slow down or face systemic collapse. The values that have allowed western capitalism to thrive for two centuries now threaten its future: growth, individualism, competition, utility, efficiency, choice, consumption, adaptability and, above all, speed. And the values it has repressed now need to be cultivated: sustainability, community, cooperation, generosity, recollection, reflection, deliberation and, above all, patience. The redistribution of resources and wealth among nations and peoples is neither a free option nor a socialist dream; it is a practical necessity forced upon us by unavoidable parameters of constraint.

A growing awareness of these problems has led to the emergence of the 'Slow Movement': slow food, slow cities, slow design, slow living. While these initiatives are encouraging, they operate at the local rather than the systemic level and they are too slow to meet the growing problems speed creates. Paradoxically, speed must be arrested quickly.

The most effective and efficient way to move from the personal to the systemic level is to encourage sustainable practices by adjusting the financial disincentives and incentives in the market. Economic disincentives include taxes on carbon emissions or eliminating subsidies that hide the cost of unsustainable practices. For example, water scarcity is one of the most urgent problems of the 21st century, but water is not priced properly in many locations, resulting in a misallocation of this precious resource. Taxing water use and eliminating subsidies that encourage sub-optimal consumption will encourage the most efficient use. Similarly, a carbon tax that requires individuals and companies to pay the government for the carbon emitted would provide a known price for carbon.

Economic disincentives can also be used to slow down high-speed, high-volume financial markets. The institution of a transaction fee for every trade executed would both increase the cost of this practice and create an additional revenue stream that could be used to subsidise other programmes to slow growth. Economic incentives, on the other hand, can be used to encourage the development of sustainable technologies and practices. For example, the use of subsidies in alternative energy projects has enabled the rapid development of technologies that reduce the cost of generating emission-free energy to the point where it is cost competitive with traditional energy sources in some markets, even without subsidies. Another example would be extending the policy of 'cap and trade', where emitting companies and plants are allocated 'credits' from the government that allow them to emit a certain amount of carbon each year. If they need to emit more, or have excess credits, they can trade with other industry participants. While some regional cap-and-trade systems have been launched in the US, the current economic and political climate is, unfortunately, not favourable to taxation and regulation, which makes the timely enactment of these measures difficult, if not impossible.

Within the long arc of history, our obsession with speed is a recent development that reflects values that have become destructive. Complex systems are not infinitely adaptive; when they collapse, it happens suddenly and usually unexpectedly. It might still be possible to develop tactics and strategies to adjust interactive networks in ways that make it possible for them to function effectively within their unavoidable limits. But time is quickly running out. ■

SCHOOLED FOR LIFE

In an increasingly competitive global workplace, young people do not just need more qualifications but a truly 21st-century education to equip them for a changing world

by Andreas Schleicher

If there is one lesson the global economy has taught us over the past few years, it is that we cannot simply bail out, stimulate or print money to get out of an economic crisis. However, all over the world, skills transform lives, generate prosperity and promote social inclusion, and many countries have significant scope to equip more people with better skills to collaborate, compete and connect in ways that drive their economies forward.

The central message emerging from the OECD's new Survey of Adult Skills, is that what people know and what they do with what they know has a major impact on their life chances. Around the world, the median hourly wage of workers scoring at Level 4 or 5 in literacy – those who can make complex inferences and evaluate subtle truth claims or arguments in written texts – is more than 60% higher than for workers scoring at Level 1 or below (who can, at best, read short texts to locate a single piece of information identical to the information given in the question). In the UK, these effects are almost three times as large as the average across countries, signalling the strength of the UK labour market in extracting value from skills but also the risks of exclusion among those who are not prepared. Those with low literacy skills are also more than twice as likely to be unemployed.

These relationships go far beyond earnings and employment. In all 23 countries surveyed, individuals with poorer foundation skills are far more likely than those with advanced literacy skills to report poor health, to believe they have little impact on political processes, and not to participate in volunteer activities. At the aggregate level too, the distribution of skills relates closely to how the benefits of economic growth are shared among individuals and social groups.

However, the co-existence of unemployed graduates and employers who say that they cannot find people with the skills they need underlines

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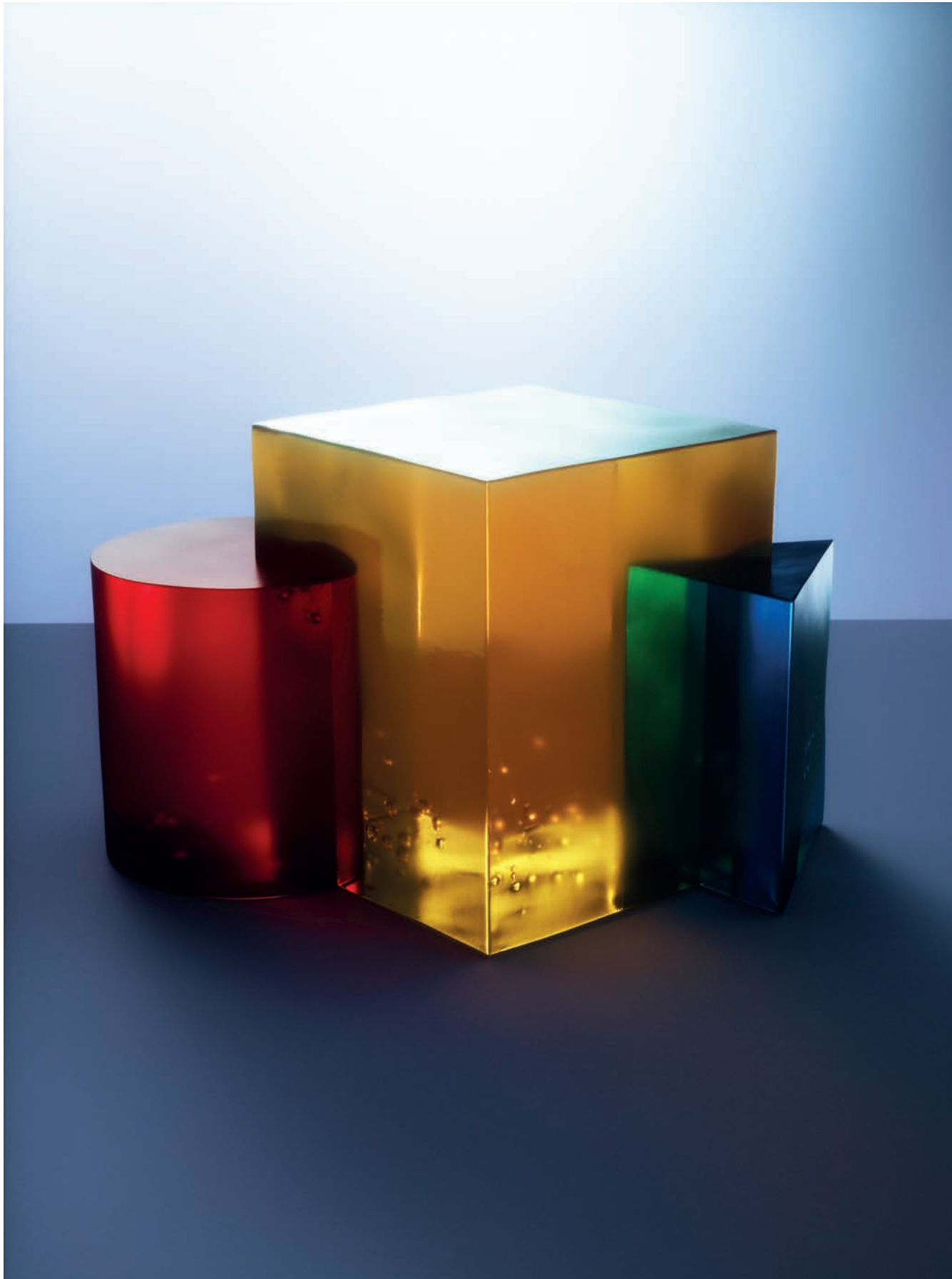
the idea that more education does not automatically translate into better economic and social outcomes. In the UK, this is also reflected in an above-average share of young people who are neither in education nor work. To succeed in converting education into better jobs and lives we need to better understand which skills drive outcomes, ensuring that the right skill mix is being learned, and help economies to make good use of them.

It is also noteworthy how much information literacy and numeracy skills vary for individuals with similar qualifications, both within the UK and when comparing the UK with other countries. While the Survey of Adult Skills only assesses some components of the knowledge and skills certified by educational qualifications, proficiency in literacy, numeracy and problem solving represents outcomes that are expected to be developed through formal education. The UK ranks much higher internationally in the proportion of 25–34-year-olds with university degrees than among the literacy or numeracy skill in the same ages. Even more striking is that a large share of Japanese 25–34-year-olds who have only completed high school do as well as a large share of UK graduates.

The essential starting point is to better anticipate and respond to the evolution of skill demand. Government and business need to work together to ascertain present and future skill demand, and use this to inform education and training. As economists Autor, Levy and Murnane have shown, there have been major shifts in the economic underpinnings of industrialised countries over the past decades. In many countries, the steepest decline in demand is no longer in the area of manual skills, but in routine cognitive skills.

When we can access the world's knowledge on the internet, routine skills are being outsourced and jobs are changing rapidly, accumulating knowledge matters less and success becomes more about ways of thinking that employ creativity, critical thinking, problem solving and judgement; about ways of working using collaboration; about tools for







“SUCCESS WILL COME TO THOSE WHO MASTER THE NEW FORMS OF COLLABORATION”

working, including the capacity to recognise and exploit new technologies; and, lastly, about the social and emotional skills that help us live and work together.

Conventionally, our approach to problems was to break them down into manageable bits and pieces, and then to teach students techniques to solve them. But today we create value by synthesising the disparate bits. This is about curiosity, open-mindedness, making connections between ideas that previously seemed unrelated, which requires being familiar with and receptive to knowledge in fields other than our own. If we spend our whole lives in the silo of a single discipline, we will not gain the imaginative skills needed to connect the dots; and that is where the next invention will come from.

The world is no longer divided into specialists with deep skills and narrow scope, and generalists with broad scope but shallow skills. What counts today are versatilists; those who can apply depth of skill to a widening scope of situations and experiences, gaining new competencies, building relationships and assuming new roles. They are capable not only of constantly adapting but also of continually learning, growing and repositioning themselves in a fast-changing world.

Equally important, the more knowledge we can access, the more important it is that we have the capacity to make sense of this content and question or seek to improve the accepted knowledge and practices of the time. In the past, we could tell students to look at an encyclopedia when they needed information and they could generally rely on it to be true. Today, literacy is about managing non-linear information structures, building our own mental representation of information, dealing with ambiguity, interpreting and resolving conflicting information that we find on the web.

Perhaps most importantly, in today's schools, students typically learn individually and at the end of the school year, we certify their individual achievements. But the more

interdependent the world becomes, the more we need great collaborators and orchestrators. Innovation today is rarely the product of individuals working in isolation but an outcome of how we mobilise, share and link knowledge. Success will come to those who master the new forms of collaboration.

The OECD's Programme for International Student Assessment (PISA) is an attempt to measure schooling outcomes in those terms. It looks at the ability of 15-year-old students not just to reproduce what they have learned, but to extrapolate from what they know and apply it to novel situations. The UK is an average performer. In contrast, 55–64-year-old Britons score much better than their peers on the Survey of Adult Skills. It seems young Brits are entering a far more demanding labour market not much better prepared than the generation leaving for retirement.

One area where the UK could learn from countries like Denmark, Germany or Switzerland is to strengthen the relevance of education to the world of work. The OECD's Learning for Jobs analysis shows that skill development is far more effective if learning and work are linked. Compared to government-designed curricula taught exclusively in schools, learning in the workplace allows people to develop 'hard' skills on modern equipment, and 'soft' skills, such as teamwork, communication and negotiation.

The experience of these countries also suggests that hands-on workplace training is an effective way to motivate disaffected youth into re-engaging with education and smoothing the transition to work. They succeed in reducing school dropout rates by offering work experience, more relevant education and second-chance opportunities. Employers have an important role in training their own staff, while trade unions in these countries protect the interests of workers, ensuring that those in work use their skills adequately and see that investments in training are reflected in better-quality jobs and higher salaries.

Preparing young people for their entry into the labour market with upfront education and training is, of course, only one facet of skills development; working-age adults also need to develop their skills so that they can progress in their careers, meet the changing demands of the labour market and maintain skills they have already acquired. Activities including work-related employee training, formal education for adults, second-chance courses to obtain basic literacy and numeracy skills, language training for immigrants and labour-market training programmes for jobseekers, are all important. There may be more that can be done to dismantle barriers to participation in continued education.

First, making the benefits more transparent can help increase the motivation of users to invest in adult education and training. Governments can provide better information about the economic benefits (such as wages, employment and productivity) and non-economic benefits (including self-esteem and increased social interaction) of adult learning.

Second, less-educated individuals tend to be less aware of opportunities or may find the available information confusing. A combination of easily searchable online information and personal guidance to help individuals define their own training needs and identify the appropriate programmes is needed, as is information about possible funding sources.

Third, clear certification of learning outcomes and recognition of non-formal learning are also incentives for training. Transparent standards, embedded in a framework of national qualifications, should be developed alongside reliable assessment procedures. Recognition of prior learning can also reduce the time needed to obtain a certain qualification and thus the cost of forgone earnings.

Fourth, programmes should be relevant and flexible enough in content and in how they are delivered, to adapt to adults' needs. A number of countries have recently introduced one-stop-shop arrangements, with different services offered in the same institution. This is particularly cost-effective as it consolidates infrastructure and teaching personnel and makes continuing education and training more convenient. Distance learning and the open educational resources have significantly improved users' ability to adapt their learning to their lives.

And yet, building skills is still the easier part; far tougher is providing opportunities for young people to use their skills. The Survey of Adult Skills shows that use of skills is a strong predictor of productivity. Employers could offer greater flexibility in the workplace while labour unions may need to reconsider their stance on rebalancing employment protection for workers. Enterprises need reasonably long trial periods to enable employers to give those without work experience a chance to prove themselves and gain regular employment. Unused human capital represents a waste of skills and of initial investment in them. If unused, skills are bound to atrophy over time and, as demands change, may become obsolete. Conversely, the more individuals use their skills and engage in demanding tasks, both at work and elsewhere, the more likely it is that skills decline due to ageing can be prevented.

However, even developing skills and making them available to the labour market will not have the desired impact on the economy and society if not used effectively. The OECD Skills Survey shows that, in countries such as the UK, the mismatch between skills and qualifications is a challenge mirrored in people's earnings prospects and productivity.

Successful entry into the labour market at the start of a career has a profound influence on later working life and the 'scarring effects' of a poor start can make it difficult to catch up. Strong basic education, along with vocational education and training programmes relevant to the needs of the labour market help to smooth the transition from school to work; so do employment rules that do not penalise young people compared with other groups, and financial incentives that make it viable for employers to hire young people who require on-the-job training. Such policies can help to prevent skills mismatch and unemployment later on.

High-quality career guidance services, complemented by up-to-date information about labour market prospects, can also help young people make sound career choices. Some countries also have effective active labour market measures, such as counselling, job-search assistance and temporary hiring subsidies for low-skilled youth and they link income support for young people to their active search for work and their engagement in measures to improve their employability.

None of this will work unless skills become everyone's business: from government, which can design financial incentives, and education, which can foster entrepreneurship and offer vocational training, to employers, who can invest in learning, labour unions, whose demand for investments in training begets better quality jobs, and individuals, who can take greater advantage of learning opportunities. ■

FELLOWSHIP IN ACTION BREWING UP A STORM

"What are the big problems facing the planet? How are they going to be solved? The answer is bound to come from the creativity of young people," said Andrew Hadley, CEO of Momentum World, the organisation behind 2020 Education. A platform for schools to share best practices and inspire others, 2020 Education won a £7,000 RSA Catalyst grant in 2012, helping it attract further funding from the EU. "We are asking schools 'what are you doing that is interesting and you're proud of?'" said Andrew. More recently, the group launched Time for Tea, a project to help young people air the issues that matter most to them. The idea is that groups conceive their message and send it, along with a packet of tea, creatively packaged, thus encouraging the receiver to have a cup of tea while mulling over the message. Although it is still early days, the project has already drawn the involvement of groups as far afield as India, Kenya and Zimbabwe.

■ To get involved, visit www.momentumworld.org

UNLEASHING METRO GROWTH

Giving our cities the power to run themselves is the best way to boost the UK's economy

by Charlotte Alldritt

While global competitors are free to invest in their major cities, UK metros are at the mercy of central government, permanently bidding for a share of a fixed pot of national expenditure.

The UK has the most centralised system of public finance of any major OECD country; sub-national taxation accounts for only 1.7% of gross domestic product (GDP), compared with 5% in France and 16% in Sweden.

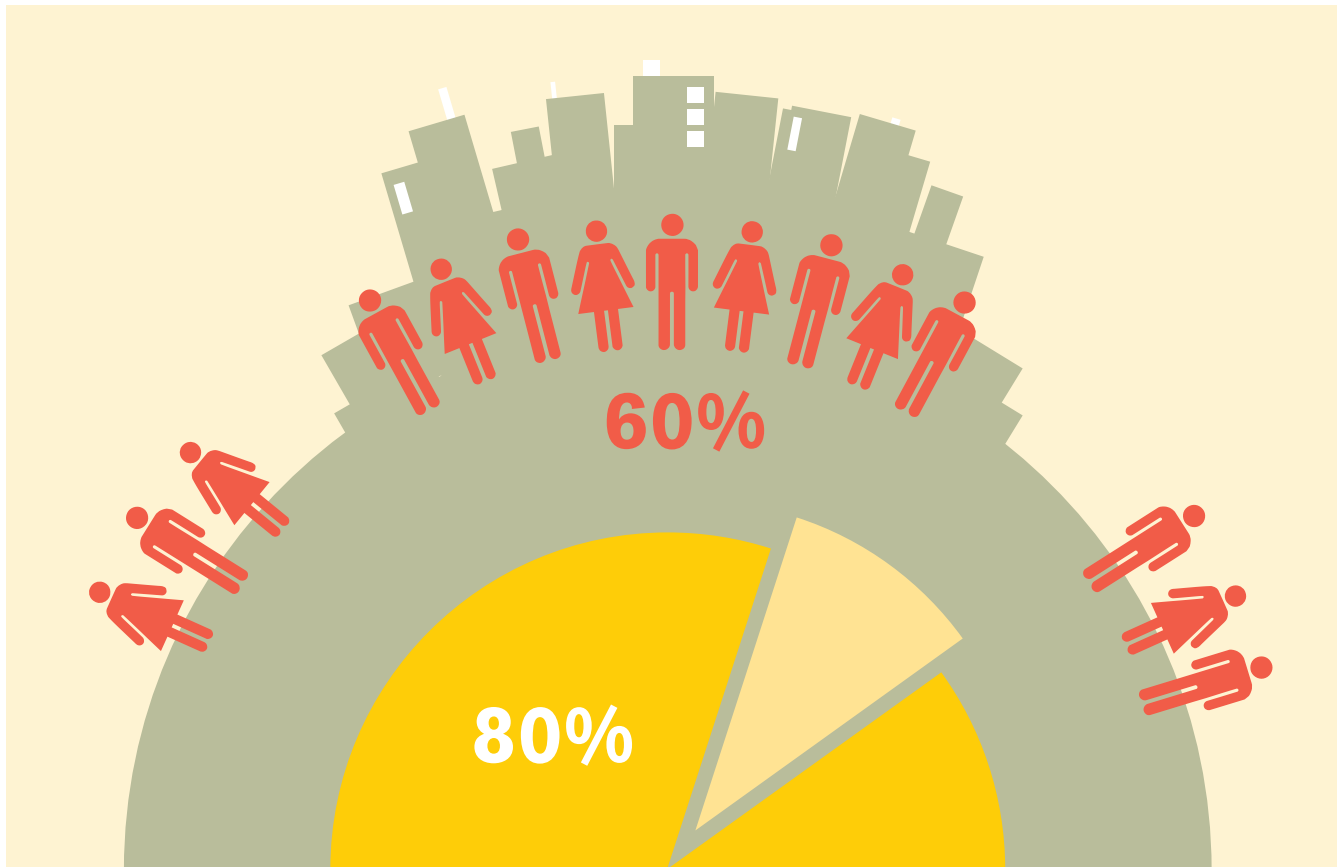
Yet, as centres of economic activity, attracting investment, skills and capital inflows, the scale and connectivity of city-regions, or 'metros', means that urban economies are the beating heart of growth. Even as fertility rates decline, cities are growing, fuelled by domestic and international migration. By 2030, urban areas are expected to house 60% of the world's population and generate up to 80% of global economic growth.

While, increasingly, our working lives are lived online – whether in

accessing emails on the move, seeking new job opportunities or using social media to engage with customers – physical connectivity in business matters more and more. When Google relocated its European headquarters, it looked to London's concentration of art galleries, creative talent and design colleges, as well as the capital's transport links to the Continent and the wider world. Other places, including smaller cities and rural counties, make a significant contribution to the economy. However, in considering how to lift the UK's long-term trend rate of growth, we have to look to our major metros first.

Over the past 12 months, the RSA City Growth Commission has considered how we can capitalise on the power of our metros to put the economy on a more inclusive, sustainable footing. Over the course of our inquiry, we heard time and again from city leaders, business and academics that the UK economy is falling short of its potential because our cities are stifled by the centralised decision-making in government.

CHARLOTTE ALLDRITT
IS SECRETARY TO THE
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URBAN AREAS ARE EXPECTED TO HOUSE 60% OF THE WORLD'S POPULATION AND GENERATE UP TO 80% OF GLOBAL ECONOMIC GROWTH

To compete on the global stage, the City Growth Commission argues, UK metros need sufficient decision-making powers and flexibility to become more financially self-sufficient. We cannot continue to rely upon redistribution from the most productive parts of the economy – Greater London and the South East – to meet the rising cost of public services. Instead, the question is how we can empower our cities to grow and start to close their fiscal ‘gap’ (the difference between their attributable tax revenues and their level of public expenditure).

Scale is an important part of the answer. UK cities need to be free to strengthen their networks across the breadth of their travel-to-work areas, integrating transport links, fostering innovation, tailoring skills to meet the demands of the labour market and building partnerships between the public, private and civil society sectors. We need our major cities outside the capital, such as Manchester, Leeds and Birmingham, to do what London does for the South East, attracting investment, creating jobs and generating growth.

The Commission makes a series of recommendations designed to nurture the positive forces of agglomeration. These include: improved transport connectivity within and between metros (for example, enabling a ‘northern Oyster card’ to build on the ‘One North’ proposal from five northern cities); giving metros powers for strategic planning (so aligning housing, transport and related development); better-quality data for more informed decision-making and evaluation; and stronger links between universities and their local economies, such as launching a scheme to encourage graduates to work or set up businesses in the metros where they studied.

The Commission argues that an ambitious process of decentralisation and devolution to cities further empowers metros to respond more dynamically to the needs and opportunities of their economies. In particular, we argue that those metros with sufficiently robust governance and accountability mechanisms should be recognised as having ‘devolved city status’. This would grant them the same consultation rights as the devolved administrations >>

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