Better by design?

John Mathers questions whether form always follows function

Sophie Thomas explores how design can kickstart the circular economy

George Monbiot asks where the wild things are in rural Britain

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> # "WHILE AESTHETIC APPEAL IS VITALLY IMPORTANT IN MANY DESIGN CONTEXTS, IT IS NOT AN ESSENTIAL OR DEFINING ELEMENT"
>

"BEING PRECISE, SELF-CRITICAL AND OPEN SHOULD SUIT THE DESIGN IMAGINATION"

MATTHEW TAYLOR

The RSA seeks to celebrate design's new-found status not just as a profession but as a deeper way of thinking about the world

I am delighted to see design, and particularly service design, featuring in the latest *RSA Journal*. Design has long been a priority and strength of the RSA. The Royal Designers for Industry (RDI) were established in 1938 to celebrate what were, at that time, the underappreciated skills of commercial designers. Now that the best designers get the recognition they deserve, we have encouraged the RDI faculty to focus on social benefit as well as excellent design in awarding coveted Royal status.

While Royal Designers have reached the peak of their career, the RSA Student Design Award programme, itself now in its 91st year, helps designers starting out. The RSA's Sevra Davis describes in this *Journal* how the programme is growing and becoming more aligned with the RSA's broader mission.

In the last issue I argued that design thinking is often more suited to today's social challenges than the more linear, top-down approach of the policymaker. Design Council chief executive John Mathers is right to call for some precision in what we mean by design thinking or design skills.

But, as design professor Jamer Hunt reminds us, even if we use the best design techniques, it doesn't exempt us from asking searching questions about the purpose to which we are putting those skills. Indeed, there is a link here with the piece by my former Number 10 colleague and now Pearson chief education officer Sir Michael Barber. Sir Michael's focus is Pearson's work on efficacy, based around the company's commitment only to sell services or products with a proven potential to "improve people's lives through learning". When I first heard about their work, I praised it in a widely read blog post. After various conversations, this led to a set of fascinating RSA seminars at which we debated the efficacy commitment alongside our idea of the power to create. Among the key themes was a recognition of how a consideration of efficacy can be a powerful catalyst for organisations to ask whether they are clear about their goals, whether they are reaching these goals or whether they even have the tools to measure impact.

But balancing this was a strong view that efficacy should not be seen primarily as a technocratic top-down tool of control. This is partly because it is an inherently political concept meaning different things to different people in different parts of any systems. As management scholar Timothy Devinney reminds us in the context of consumer products, there are many considerations and interests – some of them competing – that influence our choices.

I am an enthusiast of the design process, whether in relation to DIY as described by neuroscientist Kelly Lambert, buildings as journalist Henrietta Thompson and Arup deputy chairman Tristram Carfrae discuss, or services. As such, I feel emboldened to encourage the design community not to waste the status and goodwill it is enjoying. Being precise, self-critical and open should all be attributes suited to the design imagination. It is also important to be respectful of the skills of the rest of us. A wise colleague said that public sector service design ideas too often flounder because the designer hasn't bothered to think sufficiently deeply about the political constraints under which decision makers are operating.

It is great that the RSA prizes design, but it is also great that designers who work with us can draw on the RSA community – staff and Fellows – with their insights into research, policymaking, politics, enterprise, organisational change and community engagement. Putting design in the right context is the best way to make it transformational. ◾

EDUCATION

READING RIGHTS

The RSA's education team is working with Save the Children and a coalition of national charities to develop a national reading strategy that aims to ensure that by 2025 every UK child is able to read well at 11. Research shows that the reading gap is stubborn and wide: almost 1.5 million children risk falling short of the target over the next decade. Rather than relying on quick fixes, the national reading strategy will take a 'collective impact' approach to embedding long-term change, by looking to promote a common vision, clear metrics, mutually reinforcing activities and continuous communication. The Read On, Get On campaign is spearheaded by Dame Julia Cleverdon, who said: "Improving literacy is an urgent national priority, especially for the 40% of poorer children who currently leave primary school unable to read well. Our goal is to convince policymakers, business leaders and local organisations to come together, and turn warm words into concrete action to transform the life chances of poorer children."

■ *For more details about the national reading strategy, visit www.readongeton.org.uk*

EDUCATION

UNLEASHING CREATIVITY

Following the launch of the Power to Create as a guiding ethos for the RSA's work, the first of a new series of policy-focused papers was launched at the end of March. *Democratic Digital* by Anthony Painter and Louise Bamfield proposes major change for our education and lifelong learning systems.

The RSA commissioned Populus to undertake a survey on its behalf to assess how free people felt their creativity to be. It found that more than half of working-age respondents were either 'held back' or were 'safety firsters'. The report's conclusion is that much more can be done to give these groups a greater chance of realising their creative potential.

The report's authors argue that if new technology is to provide the greatest benefit possible, there needs to be concerted action to ensure that the social as well as economic benefits are maximised. "Technology constitutes an enormous change to our economy and society," said Anthony. "Unless we all respond in the right way new risks will be created and opportunities will be missed." This means schools applying the best evidence to see what works when it comes to new technology. It also means new 'cities of learning' should be established to take widespread spontaneous learning through new technology even further, as their findings show skills development is critical to greater adulthood creativity.

■ *The report is now available on the RSA website and in an online discussion space. For access, contact Anthony Painter at anthony.painter@rsa.org.uk*

FREE AGENT

Self-employment has grown by almost 40% since the turn of the century, with the result that a record one in seven of the workforce now answer to themselves. While substantial evidence shows the self-employed to be more satisfied at work and in their lives overall, a new RSA and Joseph Rowntree Foundation report *Boosting the Living Standards of the Self-employed,* calls for sweeping changes to boost their standard of living.

According to the authors, the key issue facing the self-employed is that they must deal with the burden of risks alone. Statutory maternity pay, statutory sick pay, paid holidays and employer pension contributions are just a few of the occupational protections that people forgo when they strike out on their own.

The report presents a number of policy recommendations to support the self-employed. These include establishing a collective income-protection insurance scheme, reforming how the self-employed are treated under universal credit, and creating a self-employment service to help people start, sustain and formalise a business. There is also a call to overhaul the national insurance system to help finance extra protection.

Commenting on the report, lead author Benedict Dellot said: "The fundamental message of our report is that self-employment needs to be taken seriously. Yes, this means extending protections in certain areas. But it also means asking the self-employed to contribute more in return. While not everyone will agree with the rights and responsibilities approach we outline, the reality is that it is only by having this more substantive conversation that the living standards of the self-employed will ever be enhanced."

BACK TO WORK

According to a new report by the RSA and Cooperative Councils Innovation Network (CCIN), the Work Programme is not successfully supporting those that are hardest to help.

The report from the Commission on Community Resilience, Jobs and Growth, found that our current system of employment, skills and business support is failing to recognise and respond to the needs of individuals and is too impersonal and centralised. It is also exacerbating skill shortages and constraining business engagement. As an alternative, the report proposes locally led and cooperative approaches which are co-designed, build on genuine partnership and unlock the assets of local places to achieve significantly better outcomes. If applied nationwide, these could cut the cost of employment support activity by £500m per annum, create 90,000 jobs and increase the contribution of private sector developers to employment and skills from £15m to £225m each year. The report calls for a series of deals with citizens, business and government to make this happen.

Councillor Lib Peck, leader of Lambeth Council and chair of the commission, said: "Our report shows that the same money would go much further if it were spent by local authorities who know the employment challenges in their patch. Cooperative councils are innovating, not waiting. But we need central government to recognise that the status quo isn't working."

ENGAGED LEARNING

The RSA's education arm is working to inspire schools in developing their engagement in research and use of evidence to inform teaching and learning. Building on the work of the British Education Research Association–RSA Inquiry on research and teacher education, the RSA Teaching School Alliance has been working with 13 other alliances from across the country on a project for the National College for Teaching and Leadership. The project aim was to produce a 'typology' of research roles

Mat Carpenter, joint project coordinator at the RSA Academy in Tipton, said: "Developing a collaborative typology has encouraged reflection on our own practice in R&D while providing inspiration through the endeavours of the other schools." Lorna Owen of Holyhead School, which has been involved with the project, said: "It has been empowering to debate the intricacies of research in school with colleagues across the country, and to create a robust and accessible framework through which to present our everyday work."

▬ *The typology is available on the Teaching Schools Council website at tscouncil.org.uk. The final report is available to download at www.bera.ac.uk*

FELLOWSHIP

OBITUARY

Sadly we lose several Fellows every year and are not always able to cover their passing, but every Fellow who has visited the House will be aware of the enormous debt we owe to Ron Gerard OBE KStJ, our honorary benefactor. He has been incredibly generous to the RSA over the years in so many ways – just to pick two examples: with the establishment, and later refurbishment, of the Gerard Bar (named in his honour), and the cleaning and restoration of the Barry paintings. We are hugely grateful to him and will be formally marking his passing at the AGM later this year.

FELLOWSHIP

GLOBAL REACH

The Society has appointed a new director of RSA Global, Natalie Nicholles. Over the course of its long history, the RSA has always had an international presence, whether through its relationship with Benjamin Franklin or through Corresponding Members. Today, outside the UK, it has 2,300 Fellows in 88 countries, including over 40 RSA Connectors, international affiliates in the US, Australia and New Zealand and global success with RSA Animates and Shorts.

Natalie joins the RSA after a career that has included working within an economics thinktank on social impact and prior to that, working for leprosy and tuberculosis charity Damien Foundation in Bangladesh. "I am delighted to have the opportunity to build on the RSA's growing presence and hope to increase our impact through working with Fellows around the world," said Natalie. "These are exciting times at the RSA, as we focus on exploring how creativity can be a driving force for change for individuals, organisations, places and communities around the world. Our breadth, independence and history uniquely place us to fill the often stifled or non-existent space between government, civil society and corporations."

▬ *To contact Natalie, please email her at natalie.nicholles@rsa.org.uk*

AFTER THE POLLS: PREDICTING THE POST-ELECTION LANDSCAPE

A panel of experts gather in advance of the general election to discuss potential outcomes and post-election landscapes. Featuring popular political commentators Janan Ganesh, Miranda Green and Tim Bale.

Where: RSA
When: Thursday 16 April at 1pm

THERE'S A WORLD BEYOND YOUR HEAD!

Do you find it easy to connect meaningfully with the people and world around you? Acclaimed author of *The Case for Working with Your Hands* Matthew Crawford argues that our dissatisfaction with ourselves and alienation from other people stem from long-held assumptions in Western culture that are at odds with human nature.

Where: RSA
When: Wednesday 22 April at 1pm

HOW GOVERNMENT AND BIG BUSINESS SOLD US WELLBEING

Sociologist Will Davies argues that the constant promotion of happiness and wellbeing has resulted in policymakers and businesses blaming individuals for their own misery, and conveniently ignoring the material and social context that has contributed to it.

Where: RSA
When: Thursday 7 May at 1pm

THE IMPORTANCE OF CHARACTER

Are you more focused on your value to the marketplace, or on the integrity of your inner life? In today's culture of achievement, the drive for external success is so fierce there's little time to cultivate inner depth. Renowned commentator and thinker David Brooks argues that we need to devote more time to cultivating our 'eulogy' virtues in order to be truly fulfilled.

Where: RSA
When: Thursday 28 May at 1pm

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

KNOWN UNKNOWNS

Intentionally or not, design solutions can have ramifications beyond their original remit. Are designers taking enough responsibility for their creations?

by Jamer Hunt

If you've met a designer then you've met an optimist. It goes without saying in the profession – though it is, in fact, often repeated – that designers embody a positivity that is future focused and generative. While critique and the questioning of new ideas is part and parcel of the design process, the outcomes of design resolutely point toward happier days. Not every designer you meet is blessed with a sunny disposition, but there is a widely shared belief within the community of practitioners that there is something inherent in the act of design that promises better things to come.

To make things, to give substance and material form to embryonic ideas, is to trust that those freshly born ideas will create a more prosperous, more pleasurable, more effective or more just future. Historically, designers have given beautiful or functional form to books, magazines, fire extinguishers, skyscrapers, dresses, interfaces and even cities; they have reshaped our material world in anticipation of our needs and wants and helped, in the process, to produce a booming culture of continuous surplus. But what sustains that bubble of optimism when one's view of the world is daily assaulted by political disintegration, staggering economic inequality, gruesome internet beheadings and catastrophic climate change? Or, to put it more sharply, how is that sunniness even possible when it is arguably the case that freshly born ideas can lead, directly or indirectly, to those

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devastating outcomes themselves? While the professional bodies of design and designers themselves have whistled past the graveyard, it is becoming increasingly difficult to ignore the murmur of the dead and the buried.

Consider the automobile: it bears the marks of a designer's touch in its curves and bevels, appointed interiors and brand-defining snouts. Designers have had an input on the shape of the highway system, too, and have contributed to the ease of navigating it as well. Many of us lead a life of remarkable mobility and geographical freedom as a result of the automobile and its attendant infrastructure. So while it is hardly immoral to design for Ford or Toyota or Land Rover, doesn't a designer bear some responsibility for the fact that the World Health Organization ranks "road injury" ninth on a list of leading causes of death between 2000 and 2012, or that the US Environmental Protection Agency estimates that at least 10% of global greenhouse gases are directly traceable to emissions from the transportation industry?

Whether we choose to admit it or not, cars kill, and designers bear some responsibility. Directly or indirectly, children's toys also kill, maim or ruin lives, as do unsafe buildings, poorly printed instructions, mobile phones in drivers' hands, fussy medicine safety caps, flammable pyjamas, mortgage default swaps and bullying text messages. And now we are entering an era when we can 3D-print arsenals of lethal guns in the privacy of our home. We have designed the conditions and the implements for human and environmental tragedies to occur, but could we have stopped them? The outcomes are by no means solely the handiwork of designers, but

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certainly our fingerprints are all over them. Historically, a designer's influence within large-scale corporate environments has been minimal, outshone by more powerful forces from marketing, accounting and management. How we calculate that responsibility when it is diffused within larger socio-technical systems – comprising designers but also engineers, lawyers, marketers, managers, fabricators, assemblers, politicians, financiers, salespeople, advertisers and even drivers – is not self-evident. If everybody is accountable, does that mean that nobody truly is?

Hidden in relative obscurity, in print shops, factories or behind computer monitors – with Frank Lloyd Wright, Coco Chanel or Jony Ive to serve as the exceptions – designers have blended into the background of commercial production. Stepping out of the shadows today and into the glare of the spotlight, designers may not be fully prepared for the scrutiny. In the hothouse of 21st-century entrepreneurial culture, animated and confounded simultaneously by globalisation, connectivity and an information explosion, industries big and small are thirsty for new ideas and fresh thinking. At the same time, an evolution of management practices has intersected with the more intangible aspects of the design process (brainstorming new ideas, reframing perspectives, applying foresight, incorporating end users) to generate

a hybrid practice that has come to be known variously as 'strategic design' or 'design thinking'. Focused principally on the big picture rather than the small artefact, and embraced by a voracious new culture of business 'innovation', strategic design has vaulted enterprising designers into boardrooms, C-suites and government ministries. As a result, designers have moved from the kids' table up to the adults', wielding new levels of power and impact in contexts as diverse as business, government policy, healthcare and international development. Fuelled as well by the return on investment that design-led companies are showing – call this the 'Apple' effect – the organised creativity of designers is suddenly ever-present at the highest echelons. And with an increase in impact will come an increase in scrutiny.

In 2010 the US Military released its *Field Manual 5-0: The Operations Process*, and its opening passage reads: "The environment in which we conduct operations is characterized by four clear trends: growing uncertainty, rapid change, increased competitiveness, and greater decentralization… With the publication of *FM 5-0: The Operations Process*, and the introduction of design into our doctrine, we highlight the importance of understanding complex problems more fully before we seek to solve them through our traditional planning processes.

"MANY DESIGNERS STILL CLAIM THAT THEY ADHERE TO A QUASI-HIPPOCRATIC OATH TO DO NO HARM"

Design is neither a process nor a checklist. It is a critical and creative thinking methodology to help commanders understand the environment, analyze problems, and consider potential approaches so they can exploit opportunities, identify vulnerabilities, and anticipate transitions during a campaign."

Remarkable on many levels, the language could have been ripped from the prefaces to untold corporate and public sector annual reports. It echoes the language of 21st-century, Peter Drucker-style, management speak. The framing of our contemporary context for design, focusing on complexity, rapid change and decentralisation, sounds surprisingly close to things I have written about design for social impact. It is deeply unnerving, then, when the captains of war-making are as likely as the captains of industry to utilise the tools of design.

Design is as moral as a hammer. It is adaptable to whatever ends are necessary. Just as a hammer can build a house or break through a window, designers make choices with every act of design. Those moral choices do not ineluctably lead to morally defensible outcomes. How could they? We have been well aware, at least since Joseph Schumpeter's "gale of creative destruction", that design-led, market-driven outcomes destroy in the process of creating the new. It is a simple, accepted-as-fact characteristic of capitalism. It destroys ways of life (cobblers and repairers of typewriters); political ideologies (communism and socialism); and cultural belief systems (of indigenous populations, for instance). Even building a house – if it is inhabiting wetlands or making us more dependent on fossil fuel-based commuting – destroys as much as it creates.

Strategic design and war-making are not the odd couple they might seem at first glance, either. A quick genealogy of the term 'strategy' will show that the term has its origins in military planning. We often elide its more complicated history, neutralising the word to its more common meaning: marshalling resources towards a planned objective. We forget that it is a resolutely agonistic term, in many ways more deeply attached to figures such as Sun Tzu and Carl von Clausewitz than to W Edwards Deming or Walter Paepcke. The catchphrase "the art of war", as some define strategy, tightly knots together the more cunning objectives of military conquest with creativity, ingenuity and imagination. If hospitals, banks and disaster relief agencies are actively absorbing the lessons of design, we should perhaps not be surprised that the military would, too.

What is remarkable is just how little public handwringing there has been within the design community over its role – or not – in our modern messes. To the contrary, many designers still claim that they adhere to a quasi-Hippocratic oath to do no harm. Forty years ago it took the excoriating words of a design critic and rabble-rouser, Victor Papanek, to finally pry open the eyes of designers to the true impact they were having. Papanek wrote, in his scathing (though ultimately optimistic) book *Design for the Real World*: "There are few professions more harmful than industrial design." His point, at the time, was that designers were spending their energy on garnishing inessential luxury goods for the haves while recklessly ignoring the very real needs of the have-nots. The "real world" that Papanek championed included the economically underserved, the disabled, the ageing and the environment. Papanek condemned designers for their sins of omission: they neglected the unseen, the under-resourced and voiceless in favour of the affluent and the already advantaged. For these and other contrarian outbursts, the Industrial Designers Society of America blacklisted him. Since Papanek's polemic, there have been too few critical voices, and the profession and its journalists have reverted back to benevolent boosterism and Pollyannaish praise.

Ignoring the needs of the under-served, however, is still categorically different from designing things that wittingly or unwittingly lead to harm. What Papanek saw and lashed out against, the sin of omission, is only one facet of the problem. Are well-intentioned, problem-solving designers the ones to blame? Certainly, no individual can foresee all the potential outcomes of something that is launched into a complex and messy world. In his 1936 foundational essay, 'The Unanticipated Consequences of Purposive Social Action', Robert K Merton explored exactly this moral quandary. He identified five principal factors that lead to unintended or unanticipated outcomes: a lack of adequate knowledge about, or ignorance of, the possible impact; an error in judgement; the "imperious immediacy of interests", or favouring short-term over long-term objectives; fundamentalist values that press an actor into action with little regard for consequences; and self-defeating prophecies wherein the prediction of future behaviour changes the conditions. Leaving aside fundamentalism, self-defeating prophecy and error, which are less relevant for designers, we shall examine two explanations: ignorance and short-term thinking. Each explains in part the situation designers find themselves in.

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Eighty years on from Merton's essay, the world hasn't gotten any simpler. Actions and their reactions ricochet around the globe in microseconds now, amplified by dynamic networks and contagious social media. Tweets become rebellions that become revolutions. Mortgages become financial instruments that become global recessions. And code becomes malware that becomes cyber terror. The scales of impact, both temporal and spatial, bear little resemblance to those even 20 years ago. Change happens almost instantaneously and at an unpredictable remove. Short- and long-term vision is simply less clear in this climate of data smog. Small interventions cascade across the internet to unleash massive repercussions, in what chaos theorists refer to as 'the butterfly effect'.

There is, though, an analogous professional field that does take the repercussions of its actions seriously in a way that designers do not, and we could learn something from it. In the field of public health it is possible to discover a model for navigating the seas of uncertainty with at least a modicum of foresight and responsibility. Professionally trained public health practitioners have rigorous methods for keeping the effects of their interventions and innovations within a known realm of impact. Randomised control studies and multidisciplinary operational evaluation teams, comprising doctors, nurses, hospital administrators, business analysts,

"IF EVERYBODY IS ACCOUNTABLE, DOES THAT MEAN THAT NO ONE IS?"

and even ethicists or patient-advocates, seek to prove experimentally the effectiveness of change and ensure that the long-term impact aligns with the objectives of the intervention. To reveal biases, oversights, possible abuses of power and errors, the operational teams assess outcomes and evaluate the processes of experimentation and innovation. Public health practitioners also take courses in health ethics in order to develop anticipatory frameworks for thinking through 'impact'. The field of public health is not immune to its own snafus, but we cannot say that design has built an equivalent infrastructure to prepare its practitioners to minimise the ramifications of their actions. From developing ethics courses to creating regulatory and oversight bodies, there are concrete steps that the design profession could take right now to move from stubborn obliviousness to informed action.

Prediction is, however, a risky game. It is overly optimistic to believe that we can anticipate and control over time the repercussions of all of our actions. Few have captured this predicament more pithily than Donald Rumsfeld, former US defence secretary. In a now famous news briefing in the aftermath of deadly drone strikes and counter-insurgency efforts in Afghanistan during the aftermath of the September 11 attacks, Rumsfeld characterised the context this way: "As we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns – the ones we don't know we don't know." Leaving aside the ridiculous irony of quoting Donald Rumsfeld in an essay that attempts to reconnect design with moral purpose, we can admit that his soliloquy brings into stark relief the epistemological implications of knowing and not knowing. Designers must embrace the 'known unknowns' if we are to counterbalance the ignorance that Merton writes of, not to mention the biases that public health assessments work to undo. Designers must start admitting what we don't know when it comes to the impact of our work. It is only through the reflective, first step of admission that we will recognise that there are steps that we can take to minimise those unknown impacts. We can anticipate that an automobile will emit carbon emissions that will lead to further climate change, even if the extent of that climate change may be unclear. Or that the design of a more intuitive interface for large file sharing will lead to increased

digital piracy, even if we're unsure where we stand on the issue of digital rights. These are known unknowns. To profess unawareness, given the evidence, is immoral.

We may be able to outmanoeuvre our ignorance with prophylaxis, but the antidote for short-term thinking – Merton's "imperious immediacy of interests" – may be more difficult to locate. The half-life of bad decisions is long, and the myopia of designers can be acute. The temporality of design is future-oriented, which means there will be both known unknowns and unknown unknowns. In a series of books that probe the complicity of design in climate change, while positing modes for redirecting design practice, Tony Fry, an Australian design critic and philosopher, argues that design is an act of "defuturing". That is to say, the outcomes of design are not just things and their traceable repercussions. Designs keep designing, as he puts it. By designing certain objects or systems, we are also denying our future selves of the possibility that alternatives may present themselves in the meantime. There is an opportunity cost to designing. The particular design of a glass, steel and wood building, for example, is a decades- or even centuries-long commitment of labour, material, ecological services and space. Were we to discover another, more energy-efficient way to build in 10 years, we cannot simply undo the building without substantial additional investments in disassembly, disposal and waste

management. More significantly, the building as built will require an unknowable infrastructure of service commitments to keep it operating, and those cannot go away either, even if we wish they would. These unknown unknowns tie us to a regime of unsustainability well into the future.

It is tempting to want to hit the pause button, to stop all this activity, so that we can think our actions through before we do further damage to our health, our communities and our climate. Design is intimately tied to forms of violence, whether through the consumption of energy and resources necessary to make things or the disfiguring effects of a hyper-consumptive lifestyle. That, of course, is not the whole story. Design accounts for myriad small miracles that gracefully smooth over the rough edges of everyday life. Design saves lives, too. But that can no longer be the only story we tell ourselves. We demonstrate maturity in professional conduct, just as we demonstrate maturity in life, by acknowledging shortcomings, admitting mistakes and making consequential changes. Conceding that we make mistakes and that we are complicit in acts that go beyond our control will not get designers sent back to the children's table. A stronger, healthier design profession will be one that wrestles publicly and proactively with the ethical and existential quagmire that we create. What will that look like? That, naturally, is a known unknown. ◼

ROAD TO RECOVERY

Introducing circularity into our design processes could be the best way to a more sustainable future

by Sophie Thomas

It has become increasingly clear that the 'take, make and dispose' economy that is the side effect of commercialism and specialisation needs to be transformed into a means of production that promotes better use of resources and energy. That system is the 'circular' economy and for the last three years the RSA has been testing the role that design can play in supporting such a transition.

Our Great Recovery project has collaborated with a wide range of people and organisations: from UK and European government, to our network of designers, chemists, engineers, makers, large and small businesses, universities and others. While growing this 'circular network', we have investigated how design can most effectively play a role in supporting an economic transformation delivering wealth and growth, but that is decoupled from the environmental impact.

The inspiration behind the Great Recovery was a visit in early 2012 to a landfill site with industrial archaeologists. Our immediate reaction was obvious: how can society generate so much waste? This was quickly followed by a realisation that we – the makers – were part of the problem. Many of the products we were looking at were designed by us and fellow designers, engineers and manufacturers. Our initial response transformed from futility to asking how the design industry could do something to address this 21st-century blight.

Considering the redesign of even a fraction of the 600m tonnes of products we consume annually is daunting. Our 'linear' economy recovers only 19% of the materials we consume. Current best practice in electronics recycling is to sort, crush, then export the waste across the globe to be refined, sometimes illegally, in hazardous and unregulated conditions.

SOPHIE THOMAS IS CO-DIRECTOR OF DESIGN AT THE RSA AND FOUNDING DIRECTOR OF THOMAS.MATTHEWS

The more we looked at the problem, the more we realised that systemic change is required by everyone involved in the life of a product, from the suppliers of raw materials through the supply chain to the final manufacturer, retailer, consumer and end-of-life disposal company. But focusing simply on the design and means of production is not enough. Manufacturers and designers may be able to make a product that can be easily disassembled at the end of its life but with our current waste infrastructure there is a very high chance it will still end up on the e-waste mountain.

Having stood at the bottom of waste mountains of all types – electronics, textiles, food, plastics, glass and others – with hundreds of designers and producers over the past three years, we have discussed long and hard how we can address this issue. It has been sobering, but the response has been unanimous: we need to redesign our 'material to manufacturer to consumer' system so that it makes economic – as well as social and environmental – sense to design out waste.

Our investigations start with what happens to the stuff we consume at the end of its life. We reimagine and rethink products from a material flow perspective, whereby raw materials are borrowed for a period of time before being returned for reuse at the end of the product's useful life. Taking this closed-loop perspective and placing it at the heart of a product design brief generates very different design responses.

Since 2012, we have run many workshops in end-of-life waste processing plants. We take participants to packaging recycling plants, textile sorting centres, car recycling plants and electronic waste recovery facilities, where they can see the waste mountains in detail. We have spent days in engine remanufacturing facilities, material science laboratories and perhaps most dramatically, a disused tin mine

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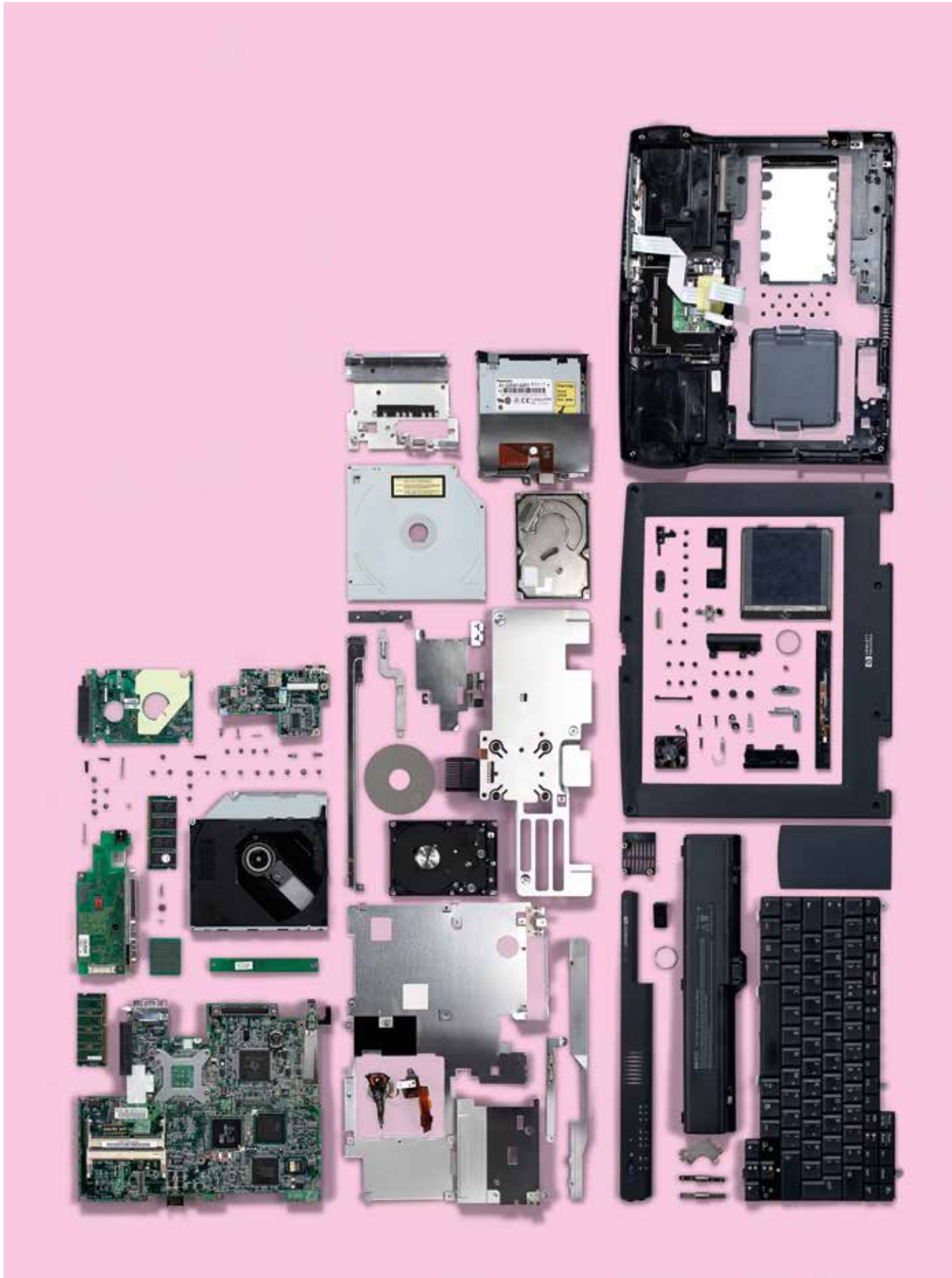
in Cornwall, learning from those responsible for managing our waste.

These places are a stark demonstration of the value of the resources that are locked up in the products we throw away. Importantly, they bring designers and producers together with specialists in end-of-life waste recovery and processing to understand the barriers that prevent greater levels of recovery, and to learn about current best practice in recycling and material reuse.

Through our investigation into different waste streams and industrial sectors, and discussions with policymakers, legislators and regulators, designers, manufacturers and end-of-life recyclers, it has become obvious that no single sector can tackle the problem or effect the radical change that is required, on its own. Collective action is needed through collaboration between the public and private sector, and across the whole supply chain including the waste industry. However, as 80% of a product's environmental impact is determined at the concept design stage, it is clear that designers have a critical part to play in a move towards a circular economy.

In September 2014, we launched our new innovation space in partnership with FabLab London, where we deliver a programme of lectures, workshops and seminars. Fab Lab brings together makers, hackers, designers, digital entrepreneurs and self-proclaimed innovators with business and government, creating new collaborations and conversations between groups of people who rarely meet. Since it opened, 7,000 people aged from eight to have visited the space.

What is new about Fab Labs is the focus on the rapidly emerging sector around circularity and redesign. The RSA's collaboration with Fab Lab London enables us to tap into a community of makers and entrepreneurs, and support start-ups as well as established designers in rethinking products and services based on circular economy models. It allows us to bring cutting-edge technology, such as 3D printing, into our work on the circular economy and for our collaborators to be able to access the machinery needed to rapidly prototype new ideas.

The rise of the Fab Lab supports the return of manufacturing to the city at a small or micro scale, as well as the development of local supply chains, local reuse of materials, rapid transfer of ideas into products and new connections between the virtual and physical world. One example of how the Lab can support innovation around the circular economy has been by hosting workshops on Arduinos (programmable circuitboards and software used in electronics projects) to see how these technologies can help track material flows. We have also worked with hackers in 'tear down' workshops, showing how redundant e-waste such as printers could be turned into new products like scanners. The Fab Lab supports the most promising ideas by introducing innovators to entrepreneurs who can help take a design to market.

In a world that is increasingly resource-constrained but better enabled by rapid advances in technology and information, businesses will increasingly look to reuse valuable materials at the end of their life and will have the means to do so. Some industries such as car manufacturing are already doing this, albeit in a limited way.

To support this evolution, the Great Recovery has started to think about tools that can help manufacturers and designers map materials from source (extraction) to end-of-life disposal and help them understand how that path can be disrupted so that materials can be reused. Our 'tear down' process allows us to understand what materials are in the everyday products

"TURNING A PROBLEM INTO AN OPPORTUNITY IS A FASCINATING CHALLENGE"

we use and our 'design up' methodology allows us to rethink product design for circularity using our four design models: design for longevity, design for reuse, design for refurbishment and design for material recovery.

A key barrier to innovation is specialisation so that very few businesses have an interest in the whole life cycle of a product and profit margins are driven by turnover and the ability to sell as much product as possible. However, the conventional business model is changing as end-of-life producer responsibility legislation kicks in and as volatility and security in materials affect price. Businesses are becoming increasingly interested in finding ways to cost-effectively recover and reuse materials.

As these types of models gain popularity, manufacturers will be incentivised to minimise the cost of recovery and maximise the value of the materials at the end of life, which in turn promotes new approaches to design for ease of maintenance, repair and reuse. In a washing machine, for example, the three biggest causes of failure are the pump, the circuit board and the motor. Designing for rapid replacement of these components begins to make sense if the manufacturer is also responsible for repair and replacement. These contracts also encourage manufacturers to build long-term relationships with their customers, which is more cost-effective for them.

The natural progression from a leasing arrangement is to sell your customer a service rather than a product. In this situation, being able to sell a service that is cheaper and more efficient to deliver becomes a valuable business driver. The RSA ran a workshop for a major battery producer that wanted to create an environmentally friendly battery for the African market. Cost was a factor, but the most interesting business model that came out of the workshop was to lease customers solar photovoltaic cells and batteries and charge on an 'as-used' basis.

Another example is the work that the Agency of Design (a design studio that focuses on the circular economy) has done since attending a Great Recovery workshop. We introduced them to other companies, which resulted in them collaborating and winning funding to create a 'closed-loop' LED light bulb that could be taken into a service business. The new service model takes back the bulbs and uses a design where only the LED itself is changed, allowing for technology upgrades, and designing out obsolescence.

As we test these ideas it has also become clear that there are hundreds of opportunities across many different sectors to use design to create products and business models that support circularity. However, very few designers are thinking about end-of-life issues or the circular economy, never mind designing for these scenarios. We do not currently design or produce for ease of demanufacture. This becomes obvious when you take objects apart and try to split out the components. Toothbrushes, disposable coffee cups, books, TVs, houses; all are designed and manufactured with endless lists of materials that are moulded and fused together by machines on efficient production lines, but in doing so, they are impossible to disassemble such that materials can be recovered. This is specialisation taken to its ultimate state.

In order to highlight this issue and understand the ways in which product design can obstruct material recovery and reuse, we have been working with resource management company SITA UK to run an exploratory and pioneering residency that brings designers together with waste recovery experts to take a deeper look at different waste sectors. Following this research, the team designed a series of prototype ideas that were presented to stakeholders at the Great Recovery's Fab Lab hub.

Most recently we have started working with Zero Waste Scotland, a Scottish government-funded initiative to promote resource efficiency. We have started to look at opportunities to exploit waste arising from the oil and gas industries and the fish, whisky and beer industries. Decommissioning of the North Sea oil and gas rigs is estimated to be worth £31bn between now and 2040. Around 20 North Sea rigs are due to be decommissioned by 2017 at a cost of £2.5bn. This represents over 250,000 tonnes of structure and, while the industry recovers and smelts 97% of the material coming out of a typical rig, the reuse potential is huge. The industry is cautious about reusing products, largely for safety reasons, but the opportunity to use these high-spec pipes, pumps and piles in other sectors to generate jobs and value is great. We are currently looking at service ideas and building a network of designers who can think creatively about reuse.

Generating new industries, jobs and economic growth from waste and turning a problem into an opportunity is a fascinating challenge for some of our best systems and process designers. Of course, there are complexities to unpick. For example, we have done work looking at the legal and legislative barriers to circularity. We are trying to change the whole economy, and as designers we are only one small part of a bigger machine.

The challenge set by the RSA's founder, William Shipley, in 1754 – to encourage innovation and excellence in manufacturing, chemistry, polite arts and trade – is as relevant today as it was then. The challenge then was to use innovation to shape an industrial revolution, which gave rise to consumer society and its attendant benefits. We now need a new revolution that delivers greater equality, protects and enhances the environment while supporting economic growth. The circular economy offers such an opportunity and design thinkers can be at the vanguard of this new enlightenment. ◾

For more information, contact us at www.greatrecovery.org.uk. Our report Investigating the Role of Design in the Circular Economy *is also available to download online. Twitter: @Great_Recovery*

DO OR DIY

As depression rates increase, getting hands-on with our environment may be the best thing we can do for our mental health

by Kelly Lambert

Although brains are most often associated with generating thoughts, a close examination of our neural maps reveals a different story. In reality, most of the brain's real estate is devoted to movement. A generously sized strip of the brain's outer layer, known as the motor cortex, enables us to move specific muscles; the large central area called the striatum is responsible for the effortless initiation and execution of movement sequences; and the large structure on the back of the brainstem, known as the cerebellum, is involved in motor coordination. In fact, nearly 80% of all the brain's neurons are located here. Why such an investment in movement? Before philosophy and calculus occupied our human neural timecards, survival depended on

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animals moving through their environments and interacting with their surroundings in adaptive and effective ways.

With so much of our brain's resources devoted to movement, it is interesting to consider the impact of our increasingly sedentary lifestyles on these pervasive neural circuits. As our activity levels have decreased throughout the past century, rates of depression have drastically increased. Considering that antidepressant use increased by a whopping 400% from the '90s to the '00s, it is becoming increasingly clear that our brains are not functioning at optimal levels. Sadly, the increased antidepressant rates also suggest that the traditional pharmacological treatment strategies are not providing relief for millions of individuals.

As alternative approaches to treating the debilitating symptoms of depression are considered, it may be wise to go back to our neural roots and consider the role of physical activity in the lives of our ancestors. Anthropological evidence reveals that our hunter-gatherer ancestors had extensive skeletal musculature, suggesting that they exerted more physical effort than required in modern societies to obtain necessary quantities of food and other life resources. As we have worked towards a more prosperous lifestyle, have our neural circuits been downsized in a similar manner as our forearm muscles?

The first clues about the importance of using our hands for crafting, handiwork and chores emerged from epidemiological research suggesting that individuals born before the first third of the 20th century are up to 10 times less likely to report suffering

from depression than individuals born in the middle third. Although many lifestyle and cultural changes have occurred over the past century, one notable difference is the diminishing role of physical effort and work as time-saving appliances and service-oriented businesses have emerged. When the *New York Times* reported on the introduction of the television at the 1939 World's Fair, the narrative confirmed that the average American family was too busy to sit in front of this new entertainment box and it would never be a serious competitor to radio broadcasts. This example serves as a vivid reminder of how quickly and dramatically our lifestyles have changed. Whereas it is unlikely that a rapid-onset genetic or biochemical modification has accompanied the increased rates of depression observed throughout the past century, research suggests that diminished physical effort has neurobiological impacts that could lead to the emergence of depressive symptoms.

If our drive to create a prosperous society requiring minimal physical effort to produce our valuable resources has negatively impacted our brain's optimal engagement levels, then this lifestyle choice may be one of the single most regretful 'advancements' for our species. We may be in the midst of an experiment of our own making, in which we are systematically removing the valuable interactive behavioural responses that enabled our brains to maximise their problem-solving ability. Although many of us complain about working too many hours each week, we seem to have a lot more time for resting and entertainment these days, with fewer of us holding jobs that require any form of mastery over our physical world. Considering that the hands are, arguably, one of the most potent activators of the brain's circuits, a hands-free lifestyle focused on virtual, rather than actual, worlds may ultimately translate into disengaged, anaesthetised neural networks. Philosopher Matthew Crawford argues in his book, *The Case for Working with Your Hands,* that our motivation to build a knowledge-based workforce may have produced less challenging contexts for our brains and mental functions than more traditional manual labour workforce settings. This is also true of our homes. Just a few generations ago, most individuals took pride in repairing appliances, mending torn clothes and cooking meals for large family gatherings. Today, we have appliance repair workers, seamstresses and caterers on speed dial to ensure that we avoid these annoying, mundane tasks.

After obtaining his PhD in political philosophy and working in a thinktank, Crawford quit his job and opened a motorcycle repair shop. Interestingly, he felt that his brain was more engaged following his transition from a knowledge worker to a manual worker. It seems the dichotomy between manual work and knowledge work is inaccurate, as it is very likely that more of the brain is engaged in many physical jobs that require the use of one's hands, forcing us to re-evaluate perceptions that manual careers are less cerebral than knowledge-based ones.

As we bypass opportunities to repair, create and design our environment, we may be losing valuable »

"A LITTLE EFFORT SEEMS TO BE THE PERFECT INGREDIENT FOR LIFE'S SWEET REWARDS"

opportunities for perceived control, in a world that seems to be spiralling out of control. With newsfeeds constantly projecting images of gloom and doom, it is easy to feel our sense of control diminishing. Being deprived of opportunities to interact with our material worlds in ways that produce positive tangible results may leave us with a sense of passivity and learned helplessness, a perfect formula for the emergence of depressive symptoms. Before we all quit our office jobs, however, there may be a compromise that enables us to frequently remind our brains that we have some degree of control over our environments. Intertwined in our daily career routines, even small doses of household chores, gardening or crafts should be embraced as necessary components of our recommended daily behavioural diets for maintaining optimal mental health.

Neuroscience and psychological research are beginning to confirm that recent trends of increased DIY projects and hobbies may constitute a more comprehensive brain therapy than the traditional pharmacological approach. Although the pharmaceutical industry has targeted the neurotransmitter serotonin, depression symptoms are also related to compromised levels of dopamine, a neurochemical involved in movement, pleasure and anticipated rewards, as well as increased levels of the stress hormone cortisol. While neurotransmitters cannot be easily measured in the brains of living patients suspected of suffering from depression, research indicates that up to half of individuals diagnosed with depression have increased stress hormone levels. Accordingly, keeping stress hormones and neurochemicals such as dopamine at healthy levels via behavioural measures such as crafting or meaningful work may ultimately have a significant impact on preventing and treating depression.

The notion that crafting may facilitate emotional wellbeing is not new. During the 19th century, physicians used to 'prescribe' knitting for women to counteract anxiety and discontent. Based on what we now know about the anatomical and chemical functions of the brain, the efficacy of crafting for the treatment of depression makes a lot of sense. Engaging in tasks such as knitting involves the integrated use of our hands, which activates large portions of the brain. Repetitive tasks are known to activate the serotonergic system, the system targeted by antidepressants that is involved in mood regulation

and many other functions. Counting stitches may distract the knitter from anxiety-provoking thoughts. Anticipating the final product, and the accompanying sense of accomplishment, engages the dopaminergic system, leading to a sense of pleasure. If knitting is done in the context of a supportive social group, social neuropeptides such as oxytocin may decrease stress hormone levels.

A recent study in the *British Journal of Occupational Therapy* confirmed that the theory behind the effectiveness of knitting is well-founded. When 3,500 women were surveyed, a positive effect was observed between knitting and variables such as happiness, calmness and higher cognitive functioning. Additionally, research published in the journal *Psychosomatic Medicine* indicated that patients with chronic disorders such as asthma, arthritis and diabetes report fewer symptoms of depression if they have gained a sense of mastery over some type of hobby or crafting. Although the data are still being collected, Stephanie Westlund recently described the beneficial effects of gardening in veterans suffering from treatment-resistant post-traumatic stress disorder in her book *Field Exercises*.

The work with gardening is an extension of research conducted on rats in my laboratory. Rats trained to dig up their coveted sweet cereal rewards each day exhibit healthier levels of stress hormones and enhanced evidence of emotional regulation than their rodent counterparts that are merely given the same number of rewards, regardless of their efforts

(dubbed the 'trust fund rats'). We refer to the positive associations between invested effort and positive outcomes as effort-based rewards.

Unlikely lessons about the reinforcing properties of effort-based rewards may also be learned from the history of cake mix sales. The first cake mixes did not require consumers to add any ingredients but to simply pour the batter in the pan and bake. However, it was the subsequent marketing decision to require the consumer to make the extra effort of adding eggs and water that was credited with higher sales. In a recent issue of *Bon Appétit* magazine, journalist Michael Park described how another successful modification in cake mix marketing was literally the icing on the cake. Around the 1950s, emphasis was placed on adding a personal signature to cakes via the incorporation of various icing designs. It appears that allowing consumers to add this extra effort solidified the long-term sales success of these mixes. As observed in my laboratory rats, a little effort seemed to be the perfect ingredient for life's sweet rewards.

Observations in the lab and in the real world are helping us understand why the more engaging cognitive-behavioural therapeutic approaches for depression are around 50% more effective than their pharmacological counterparts. As many contemporary societies require less hands-on work and activities, recent trends in hobby shops and DIY stores suggest that these activities may serve as the antidote to the hands-free,

knowledge-based society that we have created. If decades of increasing passivity have redesigned our brains toward a profile of enhanced susceptibility to emotional disorders, recent trends towards what may be viewed as compensatory crafting may also redesign our brains towards a learned resilience. The recent boom in neuroscience research confirming the pervasive existence of neuroplasticity (the production of new brain cells or restructuring of existing neural circuits), even in adult brains, provides a putative neurobiological mechanism for how lifestyles and behavioural training can change our brains.

An additional benefit of crafting may be that it combats the toxicity of boredom that has become a by-product of our efficient, technologically driven culture. As described by Harvard anthropologist Richard Wrangham in his book *Catching Fire: How Cooking Made us Human*, when our ancestors started cooking their food, providing calorie-rich meals that could be eaten faster than raw foods, the time requirement for foraging and hunting was drastically reduced. With more time available, our ancestors are likely to have benefited from the creation of constructive ways to occupy their time to keep their brains engaged at a healthy level. I recently returned from taking my comparative animal behaviour class to observe semi-free ranging java macaque monkeys at the DuMond Primate Conservancy in Miami. As primate behaviour goes, these animals exhibit virtually all the behaviours observed in healthy monkeys living in the wild. Even so, I was struck by what appeared to be excessive stretches of time when the monkeys were doing nothing, just sitting and resting. I could not help but imagine them filling this time with macramé or woodworking; anything to keep them busy and engaged. Could their brains be redesigned towards increased complexity if they incorporated more handiwork into their behavioural repertoires?

From the time our human ancestors started sketching images on the caves, their creative and fine-tuned motor responses merged to explore endless methods of manipulating environments. According to University of California, Davis neuroscientist Leah Krubitzer, the hands provide a tool that enables humans to determine the boundaries of their physical world and how elements of the environment can be manipulated. With each crafting endeavour, an enhanced understanding of the complex world emerged, leading to a stronger sense of self-efficacy and mastery. Tweaking our environments through DIY activities and crafts may redesign our brains towards responses that build a buffer against the emergence of depression. All this, and yet no known side effects? That's difficult to capture in a single pill. ▪

DESIGN INTERVENTION

The remit of designers now stretches beyond traditional categories. So what is design?

by John Mathers

Asked recently what she saw as the single greatest driver of social change, Melinda Gates of the Bill & Melinda Gates Foundation replied, "Design." How has design, which many still associate largely with style and consumerism, come to be something one might look to for solutions to the most complex and challenging problems facing humanity today; problems requiring not just local fixes using clever design objects, but solutions that reimagine systems themselves? Are we, at this point, even still talking about the same discipline?

To begin to answer this, perhaps we need first to play the Socratic fool and risk the naive question: given the widely varying disciplines that make up the design profession (fashion, furniture, product, industrial, instructional, interaction, services and so on), what are the core elements that mean that design, in each of these contexts, is always design? In the protean blur of these varied and multitudinous design types, what is the golden thread running through them all?

The 2005 *Cox Review of Creativity in Business* puts it like this: "Design is what links creativity and innovation. It shapes ideas to become practical and attractive propositions for users or customers. Design may be described as creativity deployed to a specific end." This is an excellent general definition, but we still need to dig a little deeper to see how it works in practice.

At the Design Council, we itemise design's basic roles as 'framing', 'problem solving', 'form and function' and 'style'. These have different weightings depending on where you are on the spectrum of design disciplines, but problem solving and form and function are arguably the core. There is, of course, something of a popular stereotype associating design largely or even solely with style. However,

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given the long pedigree of, say, instructional design, it is not particularly radical to observe that, while aesthetic appeal is vitally important in many design contexts, it is not, in fact, an essential or defining element. What we might venture, at least to give us a working definition, is that design arranges largely physical elements to fulfil some specific function (which may include or even primarily be style).

In order to achieve this, designers over the years have developed a formidable arsenal of tools for framing and solving problems. For the uninitiated, a necessarily short and simplified primer follows.

Much, if not all, design process concerns itself with what designers call user needs. It is by examining these closely that designers fulfil the Cox definition's function of shaping "ideas to become practical and attractive propositions for users", and not simply by concerning itself with style. A product designer, for example, wanting to work out the shape and functions of a vacuum cleaner, might map what is known as a user journey. This describes the steps a person would go through from storage to plug in, to all the various possible tasks – cleaning of floors, stairs, lampshades, picture rails and beyond – up to the point where the machine is unplugged and put away. In order to construct such a journey, a designer might engage in what is called 'shadowing', observing a real person in action. Close observation like this has proved vastly more useful over the years than just interviewing users, as people are often unaware of what they themselves do.

Similarly, designers often design for extremes. Our vacuum cleaner designer might, for instance, take into account the needs of wheelchair-bound or partially sighted potential users. This kind of thinking often results in solutions that are optimal for all users. For instance, in the recent, much lauded design of gov.uk, the UK Government Digital

Service, the design team looked at the needs of dyslexic users and duly created a bold, simple, large-font interface. They then realised this would simply work better for everyone, and thereby set a new global standard for public service websites.

These and many other tools tend to be employed in an overall process of what is known as 'divergent and convergent thinking'. In divergent thinking, a great number of possibilities are considered, while in convergent thinking, the possibilities are whittled down to one or a few. This tends to happen twice: first, many ways of defining the design problem are considered before being narrowed down. A brief can then be written and many solutions considered, then narrowed down to deliver a final design. In the course of this, the options will tend to be visualised and partially realised using diagrams and prototypes at varying levels of complexity, allowing design teams and other stakeholders to review and test solutions.

Approaches such as these have repeatedly proved effective in more and more contexts, giving rise to a proliferation of new design disciplines, especially in response to changing technological conditions: user experience (UX) design, interaction design and service design, to name a few, pioneered by agencies such as Frog, IDEO, Smart Design and, in the UK, Livework, Engine and Participle.

As their titles suggest, the nascent disciplines often presented a challenge to fundamental design notions by delivering work that did not necessarily take the form of individual physical objects. Nevertheless, the core activity remained the one we have defined. Even a service, as understood by designers, is still an arrangement of physical elements, or touchpoints as they are known within the discipline. Service touchpoints might include websites, telephone helplines, brochures, signage, instruction manuals, help desks and card readers, to give a few examples.

We have come a long way, then, from our notional vacuum cleaner, but we are still very much talking about the same discipline. For example, the notion of touchpoints shows how design can be used to innovate and re-engineer not just objects, but entire systems with a core focus on how people operate in practice.

But this begs the question: to arrange such touchpoints and to think systemically, do we really need designers or design skills? Well, one answer is to look at what happens without them. Most of us, sadly, know first-hand the phenomenon of TV digiboxes that require some combination of divine insight, a three-day training course and Holmes-like powers of deduction just to be turned on. Such aberrations are

sometimes described as 'engineer-designed'. This is not to impugn the expertise of engineers, but to correct the tendency to impugn designers by leaving them out of the process entirely, or confining their remit to style.

Design's contribution is not to supplant other areas of expertise such as engineering, but to link up all the necessary disciplines so they can be channelled towards the real needs of the end user. The three main areas of activity involved are systems, user engagement and multidisciplinary teams, and they are inextricably linked. Designers must understand how all parts of the system feed into the final product or service. To do that, they must work with experts from all parts of the system and, ideally, get them talking to each other so they can align their activities. And this multidisciplinary team-working will be even more effective if end users are also part of the conversation, so everyone has a clear picture of what they are working for.

As noted by Christian Bason in his book *Design for Policy*, this co-creation or co-design approach is now seen as increasingly important. In this process, which could so easily descend into herding cats, design's techniques of visualisation and prototyping provide focus, clarity and opportunities for testing so everyone can see what works and what does not. Further, prototyping addresses the problem of major change implemented too drastically. The faults with a new approach can often be discovered using very simple, small-scale prototypes, thereby saving the expense of discovering them during a large-scale pilot. The invaluable principle of design prototyping is 'fail early and cheaply'.

Such a rapid run through the principles of design and design thinking – especially in terms of its recent, wider application – must, of course, leave out more than it includes. The key point, however, is to show why design is coming to be seen as so vital in addressing social problems. Let us take cities as an example, since they are the quintessential example of a large, complex social group. As quickly becomes clear in considering urban issues, problems are networked: good work opportunities are unlikely to appear without good transport infrastructure, affordable housing and general quality of life. Successful design approaches need to look at ways of fostering these capabilities as a whole, working with local communities, developers, central and local government and others to speed up development.

Another example is hospital accident and emergency (A&E) departments, recently the subject of much negative coverage, despite an extra £700m of budget. If money is not the answer here, what is? A recent project run by the Design Council, in partnership with NHS England, explored the systemic triggers for aggression, sadly a common feature of many A&E

"THE INVALUABLE PRINCIPLE OF PROTOTYPING IS 'FAIL EARLY AND CHEAPLY'"

wards. Going through the process outlined above – building up the complex picture of how the ward worked and its wider context, for example – design solutions were then developed and tested using computer models and other prototypes.

A key insight was that a great deal of patient anxiety – often leading to aggression – was born of disorientation. One of the solutions with potentially the greatest benefit was therefore a comprehensive signage system, both electronic and static, to help patients understand where they were in the system. Prototype testing in real A&Es delivered interesting refinements: signage needed to begin in the car park, as much anxious disorientation began there, and should also be placed on ceilings to reassure patients on stretchers. What was produced was a relatively simple (and cost-effective) contribution to addressing what seemed like a complex and intractable challenge.

This simple outline of the process does not do it justice, but it does begin to pose another question. If this works, why isn't the signage system used in all A&Es? Given the high-profile problems they now face, why aren't such design-led approaches being applied across the system?

In the ongoing spread of design's applications, it has increasingly become clear that, if individual services and systems can benefit from this holistic, bottom-up design approach, then potentially, so can the organisations offering them. This applies to the private sector, the public and all points in between and transcending. After all, if a service's final interface cannot be seen as separate from the network of touchpoints that make it up, can it be seen as separate from the organisation that provides it, or, perhaps, the society in which it operates?

The Danish Design Centre has described the different levels of design use within organisations as a ladder: on the lowest rungs design is used not at all or only for styling, while further up it is used as integral to the development process or, at the top, a key strategic means of encouraging innovation. This places the design process at the base of change, enabling it to work with the entire structure. If we accept my opening hypothesis, this will also enable design input to have maximum impact. However, as we 'go up' the ladder, the obstacles can be formidable.

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Large organisations, especially, are perpetually at risk of what the French call *déformation professionelle*, tending to insularity, silo structures (separation of disciplines) and general ossification of thinking. They become locked into processes and rules that can be extremely hard to question, whether due to habit or pressure of time. Employees focused on pre-defined tasks forget about the changing landscape beyond their walls (sometimes fatally, as in the recent cases of fallen giants like Kodak and Woolworths) and different departments within the organisation forget or become unable to talk to each other.

In the phenomenon sometimes known as 'disjointed incrementalism', solutions to problems are frequently bolted on, one after another, in firefighting mode, without examination of the underlying structural hindrances that may be the real issues. Where major reforms are implemented, they are often brought in too big too quickly, without being tested at a small scale. These are exactly the kinds of problems design regularly tackles in service situations such as the A&E example. But how much good can such solutions do if the organisations that should be delivering

FELLOWSHIP IN ACTION
PRACTICAL MAGIC

In May 2014, Leslie Alfin, an entrepreneur and design strategist from New York, founded London-based social enterprise PRACTivate. Its main aim is to help gang members apply the marketable business skills they have acquired through the hierarchical structure of gang life to legitimate social enterprises, in order to promote economic equality and the restoration of local community economies.

Having worked with ex-offenders in New York, Leslie was struck by their adaptability. "These guys have always had to think on their feet, be creative, resilient and resourceful," she said. "They come to the table with very adaptive skills that allow them to work in an extremely dynamic environment – they could teach business students a thing or two." The company has successfully launched non-alcoholic cocktail company Mocksies, and Leslie is currently seeking funding for a third social enterprise specialising in high-end home accessories.

The RSA's support through networks and Catalyst funding has been "brilliant", said Leslie. "There are some amazing people who understand the process that PRACTivate employs, and they get it."

■ *To get involved, visit www.ipractivate.com*

"IT REMAINS A STRUGGLE TO GET POLICYMAKERS TO FOSTER CREATIVITY IN EDUCATION"

them are, themselves, too rigid to make the best use of them?

The example of prototyping may be enough to give a sense of the obstacles. In government, the default testing scenario is piloting, which is to say, a fairly large-scale test over, perhaps, an entire borough. But many of the issues pilots throw up can be identified at a much smaller scale – in one street, one house or even a mere mock-up of a house. Prototyping is quicker and more efficient. It is also much cheaper, which bizarrely, can actually work against such approaches. As one public sector designer recently commented, many people in government will not take you seriously if your project is cheap!

My point here is not to make the case for design as the next great management fad – a notion that tends to rear its head from time to time – but rather, to give as clear as possible an indication of design's immense scope for tackling social problems and the challenges that remain in realising that potential. If we can overcome some of the challenges and get design working more and more at or near the top of the ladder, the potential boons are enormous. We could find solutions to some of the most 'wicked' problems of our time; we might even be able to tackle those designated as 'super-wicked', where would-be solutions repeatedly create negative knock-on effects elsewhere in the system.

Consider, for example, environmentalism, in which numerous measures turn out to be unsustainable or even harmful (bio-plastic bags made from vegetable matter cannot meet the demand for plastic bags without creating food poverty, for instance). This is disjointed incrementalism writ large. What might we achieve if we were able to see the problem in its entirety, perhaps, in this example, using the world's now formidable capabilities for employing big data?

I am, arguably, here engaged in an activity that might be described as obsolete: selling design. The evidence shows that design is being 'mainstreamed'. In the public sector, this means that countries that have led the use of design for public services are now making serious forays into design for policy. Denmark and Finland broke the ground here, with MindLab and Helsinki Design Lab respectively. The UK has been close behind, with the Behavioural Insights Team and Policy Lab, headed by Andrea Siodmok, whose

insightful piece, 'Designer Policies', appeared in a recent issue of the *Journal*. Meanwhile, in China and Singapore, service design is increasingly being seen as a major driver of innovation.

So, does this process simply have its own momentum? Not exactly. Three or four countries doing well at design does not a design-led European Union make, much less a world. With other EU countries' design industries often unversed in the necessary techniques, it is not a simple matter to bring advanced design thinking to their public services, no matter the benefits. Even in the countries that have gone the furthest, design for policy remains largely unproven, caught in a catch-22: resisted by government due to the small evidence base, unable to expand the evidence base due to resistance from government.

Finally, despite overwhelming evidence of design's benefits for growth, it remains a struggle to get policymakers to foster creativity at all levels of education. And while the need to 'sell' advanced design may have almost dried up in business, there is a shortfall within higher education when it comes to introducing advanced design principles of the sort I have described here. One corporation to whom we have been talking, which is building a significant internal design team globally, calls this "the missing semester" and is often forced to help its new employees acquire this know-how. What hope then, for more altruistic design contexts in which there is no budget for learning on the job?

These issues are of first-order importance. For the Design Council, one approach has been to create a Design Academy programme to give students a solid grounding in design for innovation. Simultaneously, we are leading Design for Europe, an online resource and on-the-ground presence, offering tools, research and social connections to anyone interested in using design in business, the public sector and policymaking.

So far, so good. However, we need also to look to the future. By way of a provocation and a blow against our own *déformation professionelle*, let us dare to finish with an issue for which there is not necessarily an immediate solution.

In a recent, much-discussed *Wired* article, former Frog vice president Robert Fabricant points out that a dramatic trend towards having in-house design teams in big business threatens to sap the pool of designers willing and able to devote time to social and environmental projects. Design, then, even as it has developed a set of tools that appear uniquely effective for problem solving and innovation in tackling tough social problems, could find itself a victim of its own success.

We should be careful not to overstate the case. Design has always moved between profitable activities and socially beneficial ones, often with benefit to both sides. It will, most likely, continue in a similar vein. Nevertheless, Fabricant points to a crucial duty of care, inducing us to ask: What steps must we take to ensure that design continues to express its best, most socially progressive self? What must we do to keep carving out that delicate yet very powerful space? ▪

NATURE'S WAY

Reintroducing long-lost species to our environment could be the key to conserving our heritage

by George Monbiot

When I studied ecology 30 years ago, it felt like an old subject. It seemed as if there was little left to discover. Today, it feels like a young subject; one being turned upside down – literally – by some of the most exciting scientific findings of the past half-century.

The old assumption was that food chains were controlled from the bottom up. The climate and the soil determined the nature of the vegetation; that, in turn, determined the herbivore population, whose numbers then governed the

GEORGE MONBIOT IS A COLUMNIST FOR *THE GUARDIAN*. HIS LATEST BOOK IS *FERAL: REWILDING THE LAND, SEA AND HUMAN LIFE*

population of carnivores. But ecologists around the world have been discovering trophic cascades: ecological processes that tumble from the top of an ecosystem to the bottom.

The classic example is what happened in the Yellowstone National Park in the US when wolves were reintroduced in 1995. Until then, many parts of the park were almost bare. But as soon as the wolves arrived, this began to change. The deer avoided the places – particularly the valleys and gorges – where they could be caught most easily.

The results are astonishing. In some places, the trees quintupled in height in just six years, filling the bare valleys with forest. As a result, the number of songbirds has increased. As the bankside forests have expanded, so has the population of beavers. Like the wolves, they are ecosystem engineers, enhancing opportunities for other species to thrive. By building their dams, they have created niches for otters, muskrats, fish, frogs and reptiles. Bears, eagles and ravens thrive on the carrion the wolves abandon, and hawks, weasels, foxes and badgers have proliferated as the wolves kill coyotes.

The rivers have also changed, forming new pools and riffle sections, causing less erosion, because the returning trees have stabilised their banks. Erosion of the soil on the hillsides has slowed as the vegetation that holds it in place has begun to recover. The wolves have transformed not only the ecosystem, but also the park's physical geography.

"WITH EVERY GENERATION, THE BASELINE OF NORMALITY SHIFTS"

Trophic cascades present a radical challenge to the British model of conservation. Conservationists in places such as the UK have tried to cling onto the ecological fragments we retain, and to prevent them from changing. This has consequences that sometimes seem perverse.

For example, when ecologists visit the tropics, they lament the landscapes, often consisting of coarse grass or low wiry vegetation, that develop as a result of repeated cutting and burning. We call on tropical nations to stop cutting and burning, to protect the forests that support a much greater diversity of life. But when ecologists in Britain raise their eyes to the hills and see miles and miles of coarse grass and the low wiry vegetation we call heather moorland, they say: "That's what we need to preserve!" And they do it by… repeated cutting and burning.

They have forgotten that the hills were once forested. There is a name for this forgetting: shifting baseline syndrome. This means that we conceive as natural and normal the living systems that prevailed in our own youth. With every generation, the baseline of normality shifts. When you consider that, just a blink away in evolutionary terms, our ecosystem in Britain was dominated by elephants, rhinos, hippos, lions and hyenas, you begin to understand how much we have forgotten.

While bringing the megafauna back to Britain might be a bit much to ask, I believe we can start to re-establish some of the medium-sized animals that drive ecological processes, such as beavers, wild boar, lynx and wolves. These are 'keystone species': their ecological impact is greater than their numbers alone would suggest. All of them create opportunities for other wildlife to thrive. And all, to my mind, re-enchant our wild places, infusing them with the delight and wonder we now travel halfway round the world to experience.

Bringing back missing species and restoring broken ecosystems is a process known as rewilding. Its aim is to kickstart ecology's dynamic interactions. Those of us who wish to see it happen must persuade people who live and work on the land – and those who visit – that this is a better option than existing uses. There are some places where these arguments can be more easily won than others. For example, deer estates and grouse moors inflict tremendous ecological damage, while losing money. Sheep farming in the hills is so unproductive that it relies entirely on public subsidies, which surely cannot last forever. In these cases, keeping the hills bare is manifestly failing to sustain rural communities and exacerbates the risk of floods downstream.

It would not be hard to demonstrate that people would be prepared to pay more to watch wildlife than they pay for the tiny amount of meat the hills produce. Or, indeed, to make the case for a continuation of public subsidies, but only if they deliver social goods rather than social harms.

Rewilding envisages the minimum of human intervention: planting a few islands of trees where the seed banks are too far away, releasing enough missing animals to establish viable populations, then stepping back and letting nature do the rest. We do not know exactly what ecosystems will develop; in our changed climate they will not be the same as those we had in the past. But they are likely to be more diverse and more dynamic than those now pickled by conservation. The existing model is about the past: keeping landscapes in a state of arrested development. Rewilding is about the future: an open-ended process that will continue to produce ecological surprises that fill our world with wonder.

A few of us are setting up a group called Rewilding Britain, seeking to catalyse this process. We want to develop in this country a positive environmentalism: one driven by the hope of a better future, rather than only by the fear of a worse one. ∎

BLURRED LINES

Design and engineering may be merging, but are we ready for cross-pollination? Henrietta Thompson and Tristram Carfrae RDI discuss changing perceptions

HENRIETTA THOMPSON: When I first started writing about design, it was considered to be styling essentially; the fluffy stuff. The engineers that I spoke to didn't always take it seriously. Something would get designed and then it would go to the engineers, and then it would go back to the designers and so on. Is it still the same now?

TRISTRAM CARFRAE: It can be, but I'm glad to say things have changed. There are three different types of design. First, there is the purely artistic approach, which I think of as the designer without a brief. They decide what they are going to design and make, and then try to find a potential purchaser. Or they may not even be interested in the commercial side; they are doing it for themselves. Then there is the architect, who occupies the middle ground. They are involved with all the difficulties of technology, functionality and legislation; it is a messy area of design and they are normally constrained by what the client wants and what the brief entails. Yet ultimately, the form, the light, the space and the impact on society are probably their number one criteria. Finally, there are engineers, who in my view are designers and whose number one priority is reliability and functionality. As a structural engineer myself, if any of my buildings fall, it doesn't matter how creative I've been. So this creates a problem, in that we must have absolute risk aversion and conservatism.

THOMPSON: There is now a large section of the design world that sees it as a problem-solving activity. It has got to be really based on trust between collaborators. Are there particular ways in which designers and engineers can work together better?

CARFRAE: The fundamental thing that improves that collaboration, and it applies to both sides, is that the engineer must care about architecture. Not necessarily be skilled or capable in it, but care about the architectural outcome. Equally, the architect has

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HENRIETTA THOMPSON IS DESIGN COLUMNIST FOR *THE TELEGRAPH* AND EDITOR-AT-LARGE AT *WALLPAPER**

to care about the engineering solution. If we're designing a steelwork connection that is on show, then the engineer must put forward a connection that not only works structurally but that they think may be acceptable to the architect. Similarly, the architect must put forward a connection that looks the way they want, but that they think might work. Neither can disregard the other.

THOMPSON: Arup works very much in the way of holistic design and engineering. What advice would you give to the client wanting to commission something in this way?

CARFRAE: Arup is a completely integrated design house. Engineers and architects sit next to each other working together on projects. However, it brings with it other issues. You can get staleness, and you are selling into a marketplace that is used to buying these skills separately, not as an integrated team and that is hard. But the strategy of trying to integrate design does, I think, produce better outcomes. We have lots of different skillsets and we have many collaborators outside Arup and that mixing up helps. Some clients don't want to commission things this way because they worry that an integrated design team means they don't get as much control. But I'm convinced that if you pick the right team and encourage them to integrate, you get better outcomes. That includes all the specialists. There's a tradition of the mainstream parts of engineering coming on board at the beginning of a project and the so-called specialists – lighting, acoustics, fire engineering, façade design – coming later. That's a mistake. The fire engineering can have a profound impact on the building overall. Why on earth is the façade a later-downstream activity? It's what it looks like!

At the moment, we are working on the Garden Bridge with Thomas Heatherwick, who is a brilliant designer, in my view. Our job is to make sure that we deliver something for a budget, to a programme, that can be funded and that reduces the risk to the Garden Bridge Trust. At the same time, we work with Thomas and his team to develop an extraordinary design. It's quite tough. Internally we

have some people who are much more project-management focused saying, "Come on Heatherwick Studio, you've got to stop designing now. This thing has to be built." And there are others who say, well actually, this bridge only exists because of its design, and its purpose is to be the most beautiful garden and not to be like any other bridge. To deny that purpose, well, you can have as much project management as you want, but what's the point? The art is to do both of these things simultaneously; to deliver the exquisite design.

THOMPSON: Thomas Heatherwick is an interesting example of someone who embodies this hybridisation, working on the Garden Bridge and increasing numbers of buildings.

CARFRAE: He works best when he is fully informed of the technical issues and the manufacturing process by the people who are actually going to make it; then we can work together to design it. The question is always, "Is this the best thing we could possibly do in this situation?" It's subtle but there's a big difference between working with Heatherwick Studio and a typical firm of architects. Designing the Orbit with Anish Kapoor was completely different. Anish was entirely frustrated by the realities of a building that needed handrails and complied with health and safety legislation.

THOMPSON: All those practical bits! What do you think, if we're looking at problem solving again, are the biggest challenges for the 21st century that the world of building really needs to address?

CARFRAE: The biggest challenge can be summed up by the fact that we have a scarcity of resources compared with a still-increasing population. We talk about wanting to shape a better world and improve the human condition – making it safer, healthier, have greater amenity and more inspiring – but being affordable and sustainable. It's difficult. When you look at the broad numbers, we've got about 4 billion people in cities today and we need about the same amount of city built again between now and the end of the century. The only way it can be done is using technological breakthroughs that do not yet exist. The energy challenge is probably paramount; it's the most immediate step in that journey.

THOMPSON: How do you think the way engineers and designers are seen might continue to change in the future?

CARFRAE: When I first joined Arup, designing a beam meant doing a calculation. That's a mechanistic process that is now totally automated; it is not design. As engineering becomes more automated, you get more room to do design in its proper meaning, such as exploring possibilities, using your judgement to decide which is the better option. You can do more of this 'synthesise, analyse, test and judge' process because the downstream part has become much more compressed. I think engineering will become closer to design. Therefore what we've got to do is start teaching engineers slightly differently. A bit less maths perhaps – because in the end, the computer's doing more of that than we are now – and more creative thinking. It's a big thing missing from our school and university curriculums.

THOMPSON: In future, the real commodity could be innovation and creativity and being able to see things from a sideways point of view. It is interesting how the lines between disciplines are blurring. Heatherwick is a case in point, as is Ron Arad, where the designer is also the artist, and is doing fashion, buildings, products. It used to be very much you were a graphic designer or a fashion designer or a product designer. Whereas now there is an acceptance that you can be more than one.

CARFRAE: Absolutely, but alongside that, in the engineering world, we have increasing specialisation as well. So we've got both things happening at once: greater generalisation at one level, and at another, we're going deeper and becoming more niche, meaning you end up with larger teams. I try to persuade people in Arup that everybody is capable of being a designer. It's not just for people who wear black skivvies and talk the language. It involves criticism first and analysis of the issue, research of what is currently best practice and then

the creative element that asks, "What can we do that's better than that?" Design is an attitude: whatever you're trying to do, can it be done better? Whether you're struggling for a better aesthetic, a better function or a cheaper production process, it's still all design.

THOMPSON: One of the first magazines I worked on was called *Engineering*. It was interesting for me, coming from a design background, because we found that most readers were industrial designers and they were reading it because they didn't have their own magazine. It was something that was really fundamental to the way they worked and what they wanted to know about. I think sometimes the two are much closer than people give them credit for.

CARFRAE: Apparently, when Ikea commissions a designer for a new piece of furniture, the first decision they make is which factory is going to make it, and the first thing they brief designers on is the capability of that factory. So I think industrial designers have always been much closer to engineering and manufacturing processes. I'm working with Robin Levien RDI on a ceramic; we're just experimenting to see what will happen. Normally he does the aesthetic design and passes it to a production engineer who works out how to make it, but instead he asked what would happen if the engineer and the ceramicist work together from the beginning. So we've nearly got something. I think the RSA's Royal Designers for Industry (RDI) is a fantastic idea.

THOMPSON: I've had that same thought. When you go to the RDI ceremony and see all of those people in the room, you just think if they all stayed in that room for a couple of days, they could probably solve all of the world's problems.

CARFRAE: That brings on another idea; this notion that design thinking is something that can be applied to any problem. So it doesn't have to be products and buildings, it can apply to politics. It's about processes; putting up ideas and critiquing them.

THOMPSON: Education, it seems, really has a lot of catching up to do with the speed of change in technology, the internet and what people need to learn. Personally, I've always thought that good education isn't necessarily about retaining facts and information, it is about learning how to think. And I wonder how current curriculums and systems can quickly come up to speed really with what industry needs.

CARFRAE: Educational systems at university are split into two parts. The arts, which are about how to think, write and critique, are more non-vocational. Then there are the professional subjects, which are exactly the opposite. They are too controlled, in my view, by the professions themselves. So it's the fault of firms like ours who effectively tell educators: "We want engineers who know what they're doing when they start working." We shouldn't. We should want engineers who are curious, who can think, who can have creativity, who can communicate, who are well-rounded.

I would prefer to see professional education split in some way. At the moment, we just shovel more and more stuff in. You have to learn about health and safety, contract management, risk assessment and so on. Engineering can be designing because it's about the attitude with which you deploy your skills, but the bit missing, to me, is the education, teaching and training of engineers that encourages them to think that way. The Channel Tunnel Rail Link is an example. British Rail and the government wanted to bring it into Waterloo, but bringing it underneath the south-east suburbs of London was expensive and you ended up on the wrong side of the Thames. Our engineers and planners thought it would be cheaper and better if we came under the river earlier and into the north east of London, where you don't have to go underground as much. The idea to put a station at Stratford was for two reasons. The first was a very engineering-driven one: it was somewhere to put all the spoil out of the tunnels. But the second was to allow this incredible regeneration of north-east London. That wasn't chance, it was part of the plan. When you find a solution that works on so many levels, it has to be called design in my view. Because it's about providing better outcomes. ■

OUTCOME BOUND

A new drive to embed efficacy into daily work life is at the heart of Pearson's cultural shift

by Sir Michael Barber
with contributions from Vaithegi Vasanthakumar

"**N**ow I understand efficacy and the importance of learning outcomes, I realise I am part of education in my country. My children, and even my grandchildren, will be benefited by the job I do. I thought my job was only driving; now I realise my job has to do with education." – *Juan Hernández, Pearson truck driver, Mexico*

More than a decade into the 21st century, according to the United Nations, there are still 781 million adults lacking basic reading and writing skills and 290 million young people (aged 15–24) neither working nor studying. We need dramatic and significant innovation to tackle these pressing challenges and a new focus on learning outcomes from one based on inputs to far greater emphasis on outcomes; what Pearson, the world's largest education company, calls "efficacy".

I joined the company in September 2011, to create a team which, among other things, would drive this change of emphasis in the company. Placing efficacy – whether our products have a measurable impact on improving someone's life through learning – at the heart of the business is challenging. It requires greater rigour and emphasis on outcomes, and a solid evidence base. We used four broad categories of outcomes that we wanted to impact: access, completion, achievement and progression.

It is worth pausing to consider how radical this idea is. It is not just that education systems often still work to qualifications and/or time-served (or "spent time" as it is called in the US) rather than proven outcomes; it is also

SIR MICHAEL BARBER IS CHIEF EDUCATION ADVISER AT PEARSON AND A LEADING GLOBAL AUTHORITY ON EDUCATION REFORM

that this is radical in business terms, a major step beyond simply controlling inputs and outputs.

During those early days, we came across *Jugaad Innovation*, a book by Jaideep Prabhu, Navi Radjou and Simone Ahuja, which inspired our thinking. The book describes *jugaad* as: "A colloquial Hindi word that roughly translates as 'an innovative fix; an improvised solution born from ingenuity'. *Jugaad* is, quite simply, a unique way of thinking and acting in response to challenges; it is the gutsy art of spotting opportunities in… adverse circumstances and resourcefully improvising solutions… it is about doing more with less." The characteristics described by *jugaad* – being resourceful, gutsy, innovative – were those to which our small team aspired.

It has been a challenging and rewarding journey and, in November 2013, Pearson made a commitment to report publicly by 2018 on the impact that its products and services have on learners, through an external audit, just as it does in relation to its financial outcomes. This commitment is the first of its kind in the education industry and drives our global business. We are moving in that direction starting now.

When we began, there was theoretical commitment to efficacy in Pearson but also scepticism about its benefits and questions about how it could be turned into a practical proposition. Would it be seen as just another burden and would it get support from every business leader? What practical steps could we take to ensure that the idea of efficacy made a difference to the way we redesigned products and built relationships with customers? The process we went through in addressing these questions and more taught us much about the nature of institutional culture and how change can occur.

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In developing solutions to address these questions, we were determined to design and implement something that would not drain significant time or resources. We wanted to avoid creating bureaucratic and expensive top-down processes, through simultaneously engaging Pearson's executive team, and the hearts and minds of frontline employees. This has allowed us to begin to unleash the passion of our employees to deliver evidence-based solutions to pressing challenges in education.

ACHIEVING INITIAL SCALE

To start, we needed a simple tool that could be understood by all levels of the company and therefore allow us to rapidly scale awareness and understanding. We therefore developed the efficacy framework, a tool that asks a set of questions based around four things, that we use to assess what likelihood a product or service has, to deliver measurable outcomes. First, we need to decide on the outcomes – what do we want to achieve? Criteria for this are the intended outcomes, the overall design and value for money. Second is evidence. What evidence do we need to show to support the outcomes? We judge this by looking at the comprehensiveness, quality and application of evidence. Third comes planning and implementation, where we ask what mechanisms and systems are necessary to deliver the outcomes? This is done by forming an action plan, looking at governance and judging monitoring and reporting. Last is the capacity to deliver these outcomes. This is measured

by assessing internal capacity and culture, user capacity and culture, and stakeholder relationships. The fourth point bears further comment. Ensuring the product delivers outcomes for students depends not just on the capacity of the relevant Pearson team but also on other key actors such as university lecturers, school district officials and teachers. This means we, Pearson, have an obligation to ensure they use our products in the right way.

We also developed the efficacy review: a process that prompted teams to apply the efficacy framework to their product, with assistance at first from our team and later from the dozens of efficacy reviewers we trained in the process. This enables teams to decide on improvements that will increase efficacy.

The culture of these sessions was built on a transparent and plain-speaking ethos that resonated with participants. Over time, we expect to be able to predict with increasing accuracy what factors would result in what intended outcomes, so that we could harness the predictive power of the efficacy framework. The dialogue often reconnected Pearson employees with their original motive for joining the company.

So we had a tool and a process. We needed to put them to work. Instead of developing the perfect strategy before we executed (by which time it would have be outdated anyway), we started with something reasonably formed and then refined as we implemented and learned.

"EFFICACY AND RESEARCH ARE NOW EMBEDDED AT EACH STAGE OF OUR PRODUCT DEVELOPMENT LIFE CYCLE"

As a result of this approach and the simplicity of the tool and process, efficacy spread quickly. Teams uncovered how it could help them deliver outcomes. By the summer of 2012, we were able to report to the executive team on what had been learnt, resulting in increased credibility and support. Our efficacy agenda was also significantly spurred on by John Fallon, who, when appointed CEO in January 2013, initiated a transformation of Pearson that made it a single global operating company focused on achieving efficacy.

To be truly transformative, it was not enough that we had built support at the executive level and among a network of a few thousand efficacy enthusiasts. Nor was it enough that the new CEO was committed to the agenda. Success now required all 40,000 employees to embrace efficacy.

REACHING IRREVERSIBILITY

We had achieved initial scale and arrived at another phase of the organisational transformation: we needed to go beyond frontline employees simply understanding what efficacy meant. To achieve irreversibility, the focus on outcomes would need to be so deeply embedded and integral to what each employee did on a daily basis that reliance on a central efficacy team would eventually diminish. To achieve this, we focused on three major transformations: of product, culture and the wider industry.

First, in relation to product transformation, we continuously need to improve our goods to secure better outcomes. To this end, efficacy and research are now embedded at each stage of Pearson's product development life cycle. A product team has to make explicit how it believes any given product will deliver significant learner outcomes. In addition, in all acquisitions and investment decisions, efficacy considerations are central, while all senior leaders have efficacy goals among their performance objectives. We are also strengthening our data systems, which are critical to measuring learner outcomes.

Second, we set out to transform the culture of the organisation so that efficacy was built into all of the company's processes and became a day-to-day reality. New senior leaders of HR and corporate communications, among others, led this work. We created the Efficacy and Research Council, which consists of efficacy and research leaders who report into Pearson's matrix structure and have dotted line reporting into our central efficacy team. In 2015 this Council needs to become more a driver of implementation and less a place of dialogue.

Starting in 2013, we also activated employee capacity in various ways. This included the creation of five e-learning modules to scale understanding of efficacy to a wider audience than just those our efficacy leadership could reach: over 20,000 colleagues have completed one of the modules, 'Efficacy for Everyone'. We shared practical 'efficacy stories' of how others were changing aspects of what they did to impact learners and we were active on the internal company portal, answering questions and posting new content continually. In 2015, at our leadership summit for the company's top 150 people, we focused on efficacy and how it could become a practical daily activity for everyone. This was live-streamed publicly to our employees across the company, building further connections to reinforce the spirit of openness which infuses our approach. In addition to the top 150 people, the summit involved a sample of employees from across the company, building further connections.

Finally, we wanted to influence the broader industry, opening up a dialogue with the education industry about how to improve learner outcomes. There is much that we need to learn as our own understanding of efficacy continues to evolve. In our dialogue with stakeholders and experts in the field, we have received varying feedback that has helped to open up conversation on the education industry's shift from inputs and outputs to outcomes. We have made public (and freely available) the efficacy framework and other tools we have developed as well as a publication, *The Incomplete Guide to Delivering Learning Outcomes*, that sets out how Pearson has gone about the organisational change.

The external feedback has also been helpful in enabling us to refine our own approaches. So for example, Michael Feldstein, a leading US education blogger, has been running focus groups with the academic community to obtain feedback on the efficacy mission as it relates to higher education in North America. More broadly, product and customer-facing teams are testing the intended outcomes of individual products with learners in order to incorporate their feedback into the efficacy process.

Ultimately our goals are, on one hand, to supply better products that deliver outcomes for learners and, on the other hand, to encourage customers and learners to demand better outcomes from us, and indeed, other businesses.

In just two and a half years, the efficacy movement has gained significant momentum at Pearson; from piloting the efficacy framework in 2012, to committing, in 2013, to report on the learner outcomes of our products in an externally audited manner, to scaling efficacy across the company in 2014. As a result, outcomes, metrics and targets have been defined for our 'first wave' of priority products and efficacy embedded in critical processes such as the product life cycle.

There is still a long way to go. 2015 will be the decisive year for implementation. We must build capacity to design impactful products and also build new kinds of customer relationships. To achieve our goals, this will be the year that we solidify the kind of culture at Pearson, where efficacy is not an add-on to business as usual but rather is business as usual. As always, we welcome feedback and conversations but hope that the process itself gives some insight into what can be done together, if we are to change learner lives for the better. ∎

THE CARELESS CONSUMER

*Ethical consumerism has supposedly been on the
rise for years, but the sales figures don't bear this out.
Do consumers care enough?*

by Timothy Devinney

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Around 15 years ago, I was working with a global NGO helping them to engage with multinational corporations (MNCs). I ran workshops in which managers from both groups interacted with each other on matters of mutual interest. These interactions were illuminating as, although many of the MNCs had quite enlightened policies in areas related to production – driven predominantly by the need to secure their supply chain, and to keep costs down and productivity and quality high – the common refrain was that the majority of consumers were simply not motivated by the fundamentals of how products were made. Instead, they focused on value, price, quality and more idiosyncratic product features

"WE TEND TO THINK OF INDIVIDUALS HAVING AN INNATE SENSE OF FAIRNESS. THIS IS NOT TRUE"

that appealed to their personal use and interactions with the items.

These multinationals had a fairly clear line of sight between how they addressed concerns about workers and dealt with local governments and community groups, and the performance metrics on which they were incentivised. However, the question of how to understand the link between consumers' ethical, moral and social concerns and the products they purchased, fell into the too-hard basket.

This was despite a lot of public debate and media coverage at the time about the rise of 'ethical' consumption. On delving further into these debates, it seemed that there was little, if any, substantive social scientific research that had been done to address the psychological nature of 'ethical' consumption that went beyond superficial descriptors. The 'evidence' amounted to little more than a passing note that various forms of ethical product consumption were increasing; that there were more organic products in the grocery, more people purchasing from charity shops and more retailers marketing themselves as pro-social, anti-animal testing and so on.

The most sophisticated work I could find was survey-based research but, as we shall see, this kind of approach to value-related issues can be problematic. Most of these surveys entailed asking individuals whether or not they would purchase products made under specific circumstances, such as items produced in unsafe work environments or using children in the production process. Unsurprisingly, results showed that nearly everyone said that their purchase would be influenced by such information. Some studies also found that individuals who had more 'moral' personalities based on psychological tests (also survey-based), were more likely to answer that they would be influenced by information about the product's provenance.

However, there was a massive disconnect between the magnitude of the purchase intention survey responses and the actual uptake of ethical products in the market. So where surveys tended to indicate that 70% or more of consumers are influenced by ethical factors, these products rarely accounted for more than a few percentage points of actual market share. As one manager put it, consumers were "radicals when taking surveys and conservatives at the checkout line". What we see here is a classic psychological and survey response bias known as the attitude–behaviour gap.

The attitude–behaviour gap can arise for many reasons but the most common reasons are twofold. First, surveys are not 'incentive compatible'. Incentive compatibility is a fancy way of saying that the information is extracted in a way that reflects the incentives that would exist when the individual is engaging in the actual behaviour; in this case, when purchasing a product. Second, surveys are typically context free.

A good example of the first challenge is the lack of any trade-offs being made in surveys; essentially, one value is not being traded for another and there are no effective prices. We tend to think about individuals as having an innate sense of fairness that is immutable. However, this is simply not true. Research has shown that fairness has both supply and demand characteristics. The more there is in the market the lower it is valued, and the higher the price of behaving fairly the less people behave that way. The classic example of the influence of context is the Stanford Prison experiments. Despite the fact that individuals were randomly assigned roles as prisoners and guards – hence there was no psychological bias from people's innate tendencies towards cruelness or mercy – the participants took on the characteristics demanded by the roles (context) into which they were placed.

There are more concerning issues. One is that the psychological measures of qualities such as ethical disposition, are erroneous, in that they are based on stated survey responses rather than actual behaviours. A study on trust in the US by Glaeser, Laibson, Scheinkman and Soutter published in the *Quarterly Journal of Economics* found that there was no relationship between psychological survey measures of trust and trustworthiness, and how people played economic 'trust games' (experiments where trust is revealed by how much money you are willing to leave for another person during one period, knowing that they may or may not reciprocate by leaving money for you in the next period). However, they found that past trusting behaviours did forecast how people played in such games.

Taken together, these factors hint that a degree of scepticism is in order when one is dealing with issues of ethical consumption. For my colleagues and me, the issue is not that individuals who take into account social aspects of their consumption do not exist, but that they are likely to operate in niches rather than as the market norm. The reality is that most of what individuals look for in products is intangible – pleasure, brand, image, coolness and such – and there is no reason to believe that one of those attributes cannot reflect a need to meet pro-social norms or be used to reflect what the individual wants to be recognised as being, be this ethical, caring, communitarian and so on.

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However, from what we know about consumer behaviour we also understand that consumption is an individual-level as well as a group-level phenomenon, that consumers are heterogeneous and the circumstances in which they purchase are highly varied. So the idea that there is an ethical consumer who is led by their morals in consumption is a rare thing. Yes, in specific circumstances, with specific products at certain prices, an individual may reveal themselves to be an ethical consumer, but in different circumstances or with different prices or different products, that same consumer may be anything but.

We can see how this plays out by looking at a host of studies we have conducted across the globe in the years since my meetings with those managers. In place of survey-based research, we focused on using structured experiments and ethnography. This allowed us not only to force people to make more realistic choices where prices and trade-offs did exist but also to observe them and understand why they did what they did (or did not do what they said they would). Three studies stand out as my favourites when making the case for why it is difficult to make grand statements about ethical consumption.

In the first study, we replicated a popular poll conducted by Christian Aid Abroad and the Ipsos MORI about what influenced people in making purchasing choices. The results of that poll (and our replication) showed that, overwhelmingly, people said they were influenced by the conditions in which the products were made and the impact of those products on

the environment. People also stated that they were willing to pay more for products that were more ethical along these dimensions. However, like the study on trust discussed earlier, we found that these statements were virtually meaningless, with a twist. People who stated in the survey that they did not care at all, behaved consistently with that viewpoint. However, those who said they cared about how the product was made and whether or not it harmed the environment were no different than those that did not care. In other words, if people reveal that they don't care, they are more believable than if they say they do care. There is a clear lesson in this: do not believe what individuals say they will do when there is a clear socially acceptable answer and no cost to giving that socially acceptable answer.

The second study looked at whether ethics behaved like any other form of demand. In this study we manipulated two things: the price of the product and whether or not the product's functionality had to be compromised to get the good 'ethics'. Individuals were faced with a dilemma only when functionality was in conflict with good ethics. Across all product categories we saw two effects. The first is that demand for ethical products goes down as the price premium associated with getting the ethical option rises. The second effect shows functionality trumps ethics. It shows that when there is a dilemma – ie 'good' ethics requires a decline in the other attributes of the product that consumers consider important – demand collapses to

"NOTIONS OF HUMANS DOING GOOD JUST BECAUSE IT IS GOOD FAIL AT REPRESENTING OUR BEHAVIOURS"

almost nothing. No price seems to matter when this occurs. Again, the lessons from this are clear: if you are attempting to sell an ethical product you cannot expect individuals to sacrifice any aspect of the other things that matter.

The third study looked at the extent to which individuals who were amenable to some price premium for 'ethical' products in one product category were similarly amenable in another product category, where being 'ethical' means caring about something different. Here we found that only 11% of people who fell into the socially concerned segment for one product category fell into that segment for another product category. This is telling, in that every public survey of ethical consumption shows that people who say they are 'ethical' consumers invariably say they are ethical in all things. Again the lesson is very clear: it is highly dangerous to assume that knowing whether individuals who are more pro-socially orientated in one product category will tell you anything at all about how sensitive they are to pro-social orientation in another category. Indeed, it may be that such assumptions will be worse than non-informative and will lead to the wrong predictions.

In the past few years, we have taken this work into other realms. Two of our more recent projects examined ethical investing and whether or not social positioning helped in employee recruiting. The results, not surprisingly, revealed results similar to what we have seen in consumer studies. Again, we found that 'ethical' aspects of pension investments and workplace environments play a very small role in choice and that simple surveys massively overstate both the overall role that 'ethics' plays and very specific characteristics of individuals who are likely to make a choice based on 'ethical' factors.

As one looks at all of these studies, there is a tendency to become a bit depressed when examining the reality of human behaviour. However, we are not the only ones to find these types of results. What all of this work reveals is that simplistic notions of humans doing good just because it is good fail remarkably at representing our behaviours as consumers, workers and investors. We are complex creatures and the cognitive rules that we use when faced with the complexity of everyday life are not easily categorised into pleasant soundbites, however inconvenient that may be for policymakers and those peddling their own values as those best for society at large.

Policymakers in particular may be worried. There is a tendency to believe in simplistic solutions for hugely complex problems. For example, most policies aimed at energy conservation, such as smart meters, have been shown to fail with the population at large because they do not fit into people's natural decision-making logics. More recently, health policy experts have been arguing for adding calorie counts to fast food menus as a way of tackling obesity. Yet experimental and field studies clearly show that while people say it is a good idea, they ignore the information when purchasing. Indeed, few, if any, labelling experiments have shown that labels influence behaviour much at all since the information being added is not part of the consumer's set of salient decision-making criteria. The logic of 'nudging', popular with the current UK government, operates based on the fact that individuals do not notice the nudge and eventually internalise the behaviour as part of a natural habitual response.

So what can be done? My recommendations are implied in the lessons outlined throughout the article and imply that when looking at the social nature of any form of consumption behaviour – be it product purchasing, investment choice or job search and contract negotiations – one must be quite skeptical in accepting what individuals say they will do without understanding the contexts in which that behaviour is occurring.

Overall, one must be careful in assuming that individuals engage in rational-action-based behaviours that impose large cognitive and moral burdens on them. Individuals have spent years developing heuristic decision-making rules that help them deal with complex situations. One of the reasons we find what we find is that when a person is shopping they are motivated by the goals and decision heuristics they have found worked for them when shopping. The same is true with looking for a job or investing in their pension.

So, if we want to change behaviour there are only two real options. The first is to get people to change the heuristics they use. In the short term, this could be done by adding new options that account for the social aspects of consumption. In the long term, it requires training from a very young age, where new heuristics are embedded in people's upbringing. A good example of this is with attitudes to issues such as car safety, recycling and smoking.

The second option is to change the context in which those decisions are being made so that different decision-making rules are called into play. In one study, we found that just by shifting the context from consumption for the family to education for their children we could get people to make very different choices, because the goal associated with the task of consumption was changed. However, this is an extremely difficult task to achieve outside a controlled environment, as the number of purchasing contexts is virtually infinite.

Perhaps our best bet, as I argue in *The Myth of the Ethical Consumer*, is to begin to talk more about 'consumer social responsibility' rather than 'ethical' consumption as it better reflects what really matters: individual social responsibility. Focusing on consumption alone implies that it is the act of consumption that is generating non-ethical outcomes. The truth is that what is ethically neutral are our cognitive rules for dealing with reality. ∎

BEST IN CLASS

Design thinking is increasingly recognised as a new way of approaching old problems, and the RSA Student Design Awards have led the charge

by Sevra Davis

SEVRA DAVIS IS MANAGER OF THE RSA STUDENT DESIGN AWARDS AND CO-AUTHOR OF AN RSA REPORT CHARTING THE HISTORY OF THE AWARDS PROGRAMME AND NEW APPLICATIONS OF DESIGN

Traditional approaches to problem solving and innovation in government, public services and business have not adequately responded to today's complex problems. Searching for new approaches, policymakers, business leaders and others are increasingly looking towards the iterative and experimental nature of design practice as an attractive means of driving new thinking and innovation. Policy Lab in the UK, MindLab in Denmark and Helsinki Design Lab in Finland are all part of this new approach, finding new applications for design methods and principles in unlikely places. While taking a more holistic view of design and how it can be employed in addressing a range of social issues signals a new outlook for many, this broad approach has been a defining feature of the RSA since its foundation in 1754.

"THE RSA'S WORK IS INFORMED BY THE BELIEF THAT CREATIVE POTENTIAL IS LATENT IN EVERYONE"

The RSA was established on the basis of eliciting "designs for the publick good" and it soon began issuing open calls for ideas and awarding "premiums" as a means of finding solutions to economic and social challenges. At the time, this notion that good ideas could come from anywhere and anyone was nothing short of radical and challenged established ideas around hierarchy and value. Premiums, coupled with the RSA's interest in "arts, manufactures and commerce" led in 1924 to the establishment of the Competition of Industrial Designs, aimed at providing an opportunity for young designers to develop and apply their craft.

This evolved into the RSA Student Design Awards, which has been running for more than 90 years and is now widely recognised as the leading programme for students in higher education to apply design methods and principles to today's intractable challenges. The programme is delivered as an annual open-source curriculum, comprising a set of projects co-developed by the RSA and industry sponsors, adopted by colleges and universities around the world, and integrated into teaching. Crucially, because they are embedded into coursework, the award briefs must not only complement existing work, but also capture the imagination.

These awards are unique in issuing briefs that are not prescriptive in task or discipline but rather ask students to identify and define a problem within a wider social, environmental and/or economic context. They then are required to develop a solution based on extensive user-centred research, identifying insights into the problem and applying all the design skills they have to hand. This shift from responding to a defined design brief, to responding to an issue, is revolutionary for many students. Time and again, participants have noted that working on a design award brief empowered them to use their creativity in new ways and opens up new career possibilities.

Project briefs issued this year included how to design and deliver environments that foster creativity; how to encourage healthy eating in young people; how to lighten the burden of water collection in the developing world; and how to encourage communities to better celebrate and invest in their heritage. By issuing project briefs like these, the RSA Student Design Awards have led a change in student perceptions about what kind of design work is exciting.

With designers increasingly being asked to think about applying their skills in a broader context, we now see a real shift in the nature of their work. Where, in the past, they might only be asked to produce a website or corporate communication materials, we now see designers employing design methods to a range of issues and projects, from how to make systems more user-friendly to how whole organisations function. This accounts for the rise of the service design industry and sees the designer as having unique, strategic problem-solving capabilities.

This approach to problems is seen as a valuable resource and a key to innovation. Many business schools now offer courses on design thinking and encourage their students to 'think like a designer'. But what does this actually mean and why is it so valuable? Many people have observed and commented on this, but it could be summed up simply as working with an inherent optimism that things can be changed for the better; employing empathy and trying to see things from all sides; and experimenting and prototyping until a solution is found.

All of this signals changes to what it means to be a designer, and it brings up larger questions about their responsibility. After all, not all design – or design thinking – is good, so with the future promising its increasingly broad application, this provokes interesting questions about what constitutes good design and the perils and consequences of applying 'bad' design thinking, particularly in a policy context.

This is relatively new territory, so to support students working on the project briefs, the RSA now offers a programme of workshops and seminars on designing for behaviour change, applying user-centred research methods, generating insights, developing commercial awareness and writing a business plan. The aim is to provide a broad 21st-century curriculum, based on understanding the gaps in formal design education and informed by future trends.

All of the RSA's work is informed by the belief that creative potential is latent in everyone and the desire to ensure that more people are able to access and use these capabilities. This thinking is being applied to all our areas of work, including design, where our focus is less about specific solutions and more about the capacity of students and designers to respond to the world in which we live. The RSA Student Design Awards programme embodies this philosophy and, in some ways, marks a return to the premiums of the past. ■

For more information on the awards, visit sda.thersa.org Twitter: @RSADesignAwards

RICHARD ASH

Richard Ash is the founder of retail design agency, Green Room. "As well as creating retail interiors, we handle experiential design, which could involve anything from pop-up shops to exhibitions" he said. "A lot of the work that we do now is in a digital space, or has digital elements within it. These days, retailers want to make sure that their online and offline propositions are fully aligned, so that, at whatever point the consumer interfaces with their brand, it's going to look consistent."

Since founding the agency in 2001, Richard has built up a stable of blue-chip clients, including Nike, Mercedes-Benz, British Gas and VF Group brands such as The North Face, Timberland and Vans. "We like the fact that we have a wide variety of clients, projects and challenges," says Richard. "It keeps things fresh. It keeps our team excited and motivated."

He was introduced to the RSA by one of his clients, RBS, who support the RSA's Student Design Awards. "I met some of the people from the RSA and I just thought that it was really important for us to put something back into the industry that we make our living from," said Richard. "Our future lies in the young designers of tomorrow, and I felt that we could take an active role in helping to develop them."

ALICE BLACK

Alice Black is deputy director of the Design Museum, which is set to move from its premises on the South Bank to Kensington next year. "Design is an intimate part of our lives and more programmes in cultural institutions have been devoted to it," she said. "Whether we know it or not, we're engaging with design every day. I find this straddling of commerce and culture fascinating."

Alice's varied career in the world of finance in New York before she entered the world of museums turned out to be almost perfect preparation for her current role. Her change of direction came when she was made head of strategy and planning at London's Imperial War Museum. After two years in this role, she became curator of the Churchill Museum and Cabinet War Rooms.

"By the time I joined the Design Museum in 2007, I'd had really good experience both at the strategic level and in operating a museum, with the added bonus of understanding finances through my earlier background," she said. "When navigating the challenging times in which museums are operating today, these are useful skills to have." Alice became a Fellow last year and finds the *Journal* and website a valuable source of inspiration. In 2015, she plans to attend more events and exploit the organisation's networking opportunities.

IN BRIEF

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

Jackie Norton is course director of the Design Studies Programme at Birmingham City University, which covers environmental and social issues, including how, as designers we can support and promote good practice.

David Watts is managing director of CCD Design and Ergonomics, a consultancy that uses human factors and ergonomics to understand how people think and behave in a range of environments.

Anab Jain is a designer and and founder of Superflux, a design agency operating in the realm of emerging technologies, science and design. She is keen to do pioneering work within the design profession that finds new audiences and has social and cultural impact.

Emilian Cartis is the senior lead designer at Humanscale Design Studio in New York, working with designers, engineers and manufacturers to deliver sustainable products to market.

Kigge Mai Hvid is CEO of Design to Improve your Life and a leading voice in the area of design and innovation, with experience in strategic planning. She is interested in the question of how to ensure future generations can understand and solve global challenges.

YOUR FELLOWSHIP – ENGAGE WITH THE RSA IN FOUR MAIN WAYS

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

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

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

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

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

DEALING WITH DEMAND

The article by Rowan Bosworth-Davies ('Bottled Up', Issue 4 2014) illustrates nicely why the 'war on drugs' is such a failure. Not surprisingly, bearing in mind the experience and expertise of the author, it places the emphasis on the supply side of the problem almost to the exclusion of the demand side. Production and distribution of illegal drugs is immensely profitable, particularly the latter. Why else has cultivation of opium poppies increased by 7% over the past year in Afghanistan? What is important to realise is that without demand there can be no requirement for supply. Understanding the operation of the market involves first of all understanding who uses drugs and why they do it.

The question is fundamentally psychological, not economic. Drugs are mind-changing substances taken to affect the emotions, hopefully in agreeable ways. The younger generation enjoys experimentation and using drugs, especially when they are classified by the older generation as illegal and harmful. The population inside prisons constitutes a sizeable proportion of the non-recreational users. These are people who cannot bear their environmental circumstances, material and psychological, and take drugs to ease their mental anguish.

Regulation of supply can do little to help such people solve their troubles. Only ameliorating their overwhelmingly adverse circumstances can be effective. This is vastly more complicated and difficult than spraying Colombia and its citizens with herbicides or trying to persuade Afghan farmers to grow cabbages instead of poppies. Drug abuse is an enormous problem to be tackled but success will not be achieved until the root of the problem is more accurately acknowledged as one of demand.

– Allan Mears

POLICY PROBLEMS

I read with great interest Matthew Taylor's contribution to the recent *RSA Journal* ('The Policy Presumption', Issue 4 2014). As a district council chief executive, I found much with which I fully agreed – most particularly the need for a real devolution of power and efforts to develop and implement new approaches to change. My own authority is embracing much of that agenda.

My purpose in writing, however, is to challenge your assertion that "public service performance continues to be disappointing and productivity sluggish". While I acknowledge that 'public service' covers a multitude of organisations and disciplines, in the eyes of many people, it equates to local government – an area where your statement is not borne out by the facts.

Over a period of five years – the life of the coalition government – local authorities as a whole have experienced budget reductions of some 40% – a figure acknowledged by ministers themselves. Over that same period, public satisfaction with what we do, particularly district councils, has increased, valuable services have been maintained (if not improved) and local economic and commercial growth has been successfully facilitated using the methods you expound in your article.

All in all, a ringing endorsement for your contention that we move away from the policy presumption – but not because a significant part of the public sector is failing; we are in fact exemplars for the remedy you propose.

– Steve Atkinson FRSA, chief executive, Hinckley and Bosworth Borough Council

IMAGES: ANDREW GIBBS, SARA MORRIS

HOW TO BUILD BETTER, MORE RESILIENT CITIES

20 January 2015

Judith Rodin argues that more than ever, we need to prepare our cities for catastrophe

Why resilience? And what is the dividend it pays? The idea is premised on the evidence that crisis may be becoming the new normal. There isn't a week that goes by that somewhere in the world, we don't see something that people would define as a crisis: a cyber-attack, a new form of virus, a terrorist attack, a severe weather event, an economic blow. We, as a global community, have been spending billions on a paradigm that is predicated on disaster, recovery and repair rather than one that is based on readiness, preparedness, prevention. We can't prevent every disruption, we can't predict every disruption, but we can build resilience that enables us to prevent every disruption from becoming a disaster.

Often, policy is made looking in the rear view mirror; planning is often a response to the last thing that happened. But we can't frame policies based on yesterday's crisis, whether that's a weather event or an economic blow. The goal is to be able to build greater capacity for those things that are somewhat predictable, like the seismic risk faced by San Francisco or Christchurch. The thought process should be "I do not know when it will happen but I imagine it will, and therefore I fortify physical infrastructure, soft infrastructure and social infrastructure. But I build those capacities in a way that also fortifies me against other kinds of risks. Whether it's inequality or mudslides or draughts, there are capacities that can be built in."

There has been crisis throughout history. What is new is the colliding trends of rapidly accelerating urbanisation, the deep impact of climate change and globalisation, which are really demonstrating that things that happen in one place have tremendous impact around the world. When Bangkok flooded, a third of the global supply chains in some businesses were taken down. In addition, it's estimated that in some rapidly growing cities that will become mega-cities, 40% of the infrastructure that will be needed is not currently built.

The first phase of resilience is preparedness or readiness. Boston is a very good example. They spent five or six years preparing for any kind of event. They have severe weather, so they brought together all their service businesses – power,

communications, transit, local government authorities, state and federal government authorities and a variety of civil society and community leadership as well – and rehearsed not for a specific event, but for who would act first in an emergency. They decided that the governor would be the communicator, and that the FBI would organise the police authorities. They rehearsed all the things they might do. And so when the Boston Marathon bombings occurred, although a few people died instantly, everyone who was hurt got to hospital within 19 minutes and there were no more deaths. They couldn't predict what happened but they were prepared and ready to move on to recovery and revitalisation.

We think of equilibrium as being the desired state, but often it's the state that made us vulnerable in the first place. So the logic of this argument is that failing safely is different to failing catastrophically. Being able to self-regulate and then bounce back in a different way, grow and adapt is absolutely critical.

Let's take another city example: Christchurch, New Zealand. It's been hit year after year by earthquakes and aftershocks that effectively razed a large part of the city. They intentionally decided that they would rebuild differently, not only physically, but how they would reknit the economic and social fabric of the city. They created several teams that included citizens, community leaders, business leaders, government officials, and so, although they relied on experts and policymakers, they produced a more participatory democracy. They are diversifying their economy as a result of this, and they're seeing very significant growth that wasn't there before. We saw the same things in New Orleans in their revitalisation and recovery after Katrina. New Orleans was a social, economic and political failure for many years before, and so that's how the slow-burning stresses make you more vulnerable when the shock occurs. It's now been 10 years, the rebuilding process to transform that city. They've taken over the entire education system and changed it, again diversifying their economy. They've built different kinds of neighbourhoods, and fostered community trust and social cohesion that was missing before the hurricane. It is a wonderful story of a city revitalising and transforming itself. ∎

IMAGES: ISTOCK

HOW TO BECOME A SOULFUL ORGANISATION

22 January 2015

Frederic Laloux shares how pioneering organisations are benefiting from the next big leap in management thinking

For the past three years I have been researching pioneer organisations whose CEOs have decided to throw out everything we're being told in business school and embark on a journey of innovation. I think there is something in the air that is making us ready for a momentous leap in terms of management.

One of these is Buurtzorg, a remarkable organisation in the Netherlands active in home care. Until the 1980s, home care nurses mostly worked independently, then the whole traditional management thinking took over and pushed for cost cutting and efficiency. There is something deeply dehumanising about how these organisations ended up. Clients hate seeing a different, rushed nurse every day. And the nurses hate knowing that they're often giving bad care.

Into that landscape came Jos de Blok, who for a long time was one of these nurses, until he decided to create his own organisation, Buurtzorg, on entirely different foundations. For him, the purpose of Buurtzorg is not to administer shots or change bandages – it is to help patients lead the most autonomous lives that they can. So nurses drink coffee with the patients and ask them questions. What do you like to do? What can you still do? What can you no longer do? How can we help you with this?

The level of care is extraordinary. Nurses work for years with their clients. Clients and nurses love it. And Buurtzorg has gone from four nurses in 2007 to 9,000 today. More than 80% of all neighbourhood nurses in the Netherlands work for them. From a medical and financial point of view it's incredibly successful too. Because patients become autonomous so much faster, it saves the Dutch state hundreds of millions of euros every year.

According to my research, there are three fundamental breakthroughs organisations like Buurtzorg have made. The first is self-management. In Buurtzorg, with 9,000 people, there isn't a single manager. They have replaced all of that with much more powerful systems of distributed authority. They had to reinvent decision-making mechanisms and deal with everyday questions like how to know when somebody is under-performing. Instead of having just a few powerful people at the top, everyone in the organisation is powerful.

The second has to do with wholeness. In today's organisations we're pushed to wear a professional mask. It's very risky to come from a deeper place – it feels like it could be career limiting. Some of the organisations I researched have put in place beautiful, soulful practices that help us to drop the mask and show up in the full glory of our humanity.

The third breakthrough is evolutionary purpose. The management paradigm is based on the notion of 'predict and control'. Leaders like Jos de Blok believe the world is too complex for this, and instead trust that the organisation is a living organism with a sense of direction and a creative genius of its own. That makes everything simple: things fall into place because you're constantly sailing with the wind.

So next time you're frustrated at work, remember it doesn't have to be that way. There are pioneers showing that it's possible to run organisations in ways that are radically more powerful, soulful and purposeful than what we do today. ■

## MORE FROM THE EVENTS PROGRAMME

It's been a real showcase of innovation, influence and joined-up thinking in the Great Room this season. For part of our work on the Seven Dimensions of Climate Change project, we premiered a new 'serious comedy' format, featuring renowned comedians **Marcus Brigstocke** and **Steve Punt,** which was swiftly followed by an interactive 'Question Time' event with a seven-strong panel, featuring the Green Party's **Baroness Jenny Jones** and climate colossus **Lord Nicholas Stern**. We also curated a day-long self-employment summit as part of our ongoing work in the area, which featured former adviser to the PM **Rohan Silva**, director of Etsy Europe **Nicole Vanderbilt** and **Stella Creasy**, Labour MP.

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

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

OBSOLETE?
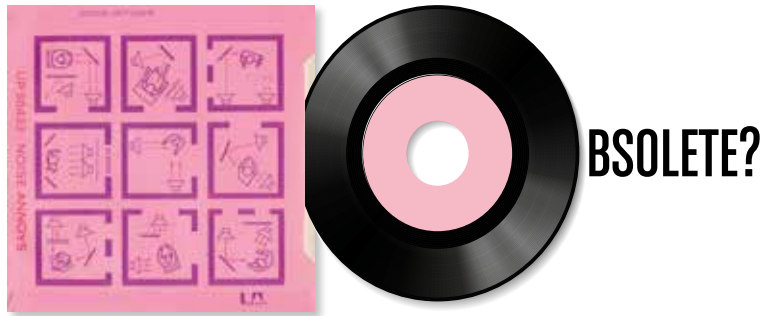
*The album cover may be long
dead, but the band plays on*

by Malcolm Garrett RDI

I was a designer in the music industry throughout the '80s and '90s, from before the introduction of CDs through to the beginnings of the digital era. I have seen the expression of a music-based youth culture evolve to become almost an end in its own right, and then find itself in a quandary as physical forms of music delivery have eroded.

I was often asked if I mourned the passing of vinyl when the CD appeared. Now I'm asked if I mourn the demise of packaging itself. My response then, as now, is that it doesn't really matter to the designer what the packaging is, merely that its particular constraints are understood. Packaging is just one interface to the music. The application of creative energy, which once saw physical expression in record sleeves, posters and club flyers, is now realised in 'soft' ways. The interface is now digital, but no less compelling. The point of access is the package, and consequently, identity is expressed in ways that complement rather than define the music. It's more important to be a Lady Gaga 'little monster' than to be seen carrying her album in school.

In connection with this, I began to think about the wider context of music and youth culture, and the role it plays in shaping personal identity and thus, society itself. Teenagers are growing up with the twin concerns of global ecological threat and personal economic threat. They see a life that is both exciting and, given the reach of social media, without some of the old physical limits, but this is tempered by fear of a hard-to-specify, and harder to resolve, sense of foreboding. This constrains them in ways my generation had only just begun to experience.

It is within this framework that the delivery of music should be considered. Teenagers don't have markedly different personal development concerns than 30 years ago, but they have very different vehicles by which to express them.

MALCOLM GARRETT IS A GRAPHIC DESIGNER AND HAS DESIGNED RECORD SLEEVES FOR DURAN DURAN, BUZZCOCKS AND OTHERS. HE IS MASTER OF THE RSA'S ROYAL DESIGNERS FOR INDUSTRY

The swinging '60s informed counterculture and a radical left-field lifestyle embedded itself in society in ways that were both subtle yet all-pervasive. I count myself among a sizeable portion of the population best described as '50-year-old teenagers' who see themselves as ever youthful and want to enjoy their hard-won freedoms. We are evidence of what the urban studies theorist Richard Florida termed "the rise of creativity as a fundamental economic driver and the rise of a new social class".

Interestingly, Florida also noted that "a vibrant music scene can be signal that a location has the underlying preconditions associated with technological innovation". This has notably happened in London's Shoreditch, which during the '90s many saw as a logical overspill from Ladbroke Grove, former home of UK counterculture. And much has been written about the youthful rebellion of the '60s, particularly on the US West Coast, having effectively given us the origins of a contemporary digital society.

In his 1989 autobiography, Frank Zappa proposed a subscription service to provide music on demand via cable TV, more than 10 years before iTunes and Spotify made it an internet reality. With music infinitely accessible and shareable, the need for youth to express allegiance and identify with particular sub-genres has re-emphasised the appeal of performance. Music has never been more popular, both as live event and as a personal pursuit in the home studio. The artefact has simply become the advert (or the memento) for the real experience rather than vice versa. We now live our lives on the move and in a combination of real and virtual space.

Harold Wilson's "white heat of technology" of the '60s promised a future with labour-saving robots taking care of daily chores. What we hadn't expected is that our robots would be largely 'soft', mobile and 'in the cloud' (think Google and thousands of other modern-life-supporting apps). While we have been busy trying to plan the future, it has simply appeared all around us and we now hold it in our hands. Ultimately, it's not about the vehicle, it's about the journey we take in it. ■

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