

# Psychology and the financial crisis

Two economists, a psychoanalyst and a former clinical psychologist gathered at a public panel discussion organised by London's Freud Museum in July to discuss what psychology has to say about the global financial crisis. Introducing the event, the chair Professor Daniel Pick of Birkbeck, a historian of psychoanalysis, pointed out that the theme of psychology and money is hardly new: 'John Maynard Keynes read Freud in the 1920s', he said, 'and was very interested in the links between money and sexuality.'

Tim Harford, author of *The Undercover Economist* and a regular on BBC Radio 4, then opened proceedings by describing the systematic failures that led to the Piper Alpha disaster in 1988. Just like the global financial crisis, Harford said the oil rig explosion was an example of a complex system going wrong because of a catastrophic mix of greed, malfeasance and bad decision making. Crucially, as with the economy, he said there would have been people with the knowledge and awareness to prevent the disaster from occurring, if only they had spoken up.

Harford referred to the work of

psychologist James Reason at Manchester University, who has argued that there are three categories of error – slips 'like getting in the shower with socks on' (which are quickly recognised and rectified); mistakes (when your mental picture of the world doesn't accord with reality); and violations (when the correct procedure is deliberately not followed). 'We can talk about greed and lax regulation but fundamentally the [world economy] is a complex system – things will go wrong,' Harford said. 'What matters is that someone will see that. But they might think it's not worth their while mentioning it – we need to change the psychology of whistleblowing so they don't take that view.'

Unfortunately he said we have a habit of treating such whistleblowers badly. Paul Moore, the Chief Risk Officer at HBOS, whistleblawed their risky decision making but was promptly sacked.

For Will Hutton, executive vice-chair of the Work Foundation and author of the forthcoming *Them and Us: Politics, Greed and Inequality – Why We Need a Fair Society*, the global financial system

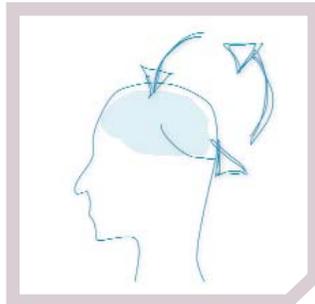


The banking system 'was rooted in a mistaken view of human nature'

came crumbling down because the world's bankers ignored the centrality of fairness to human nature. 'The paradox of capitalism is that fairness is its indispensable value,' he said. 'Even hunter-gatherers relied on sharing in case they came home with nothing and needed to rely on the catch made by others, but the culture of banking drifted so far from this.'

## Making better decisions

The Royal Society of Arts, Manufacturing and Commerce (the RSA) published the second report in their ongoing Social Brain Project in June. Entitled *Steer: Mastering our Behaviour Through Instinct, Environment and Reason* and written by outgoing project director Matt Grist, the report discusses the potential benefits of informing people about the psychology of decision making, so as to help them make better decisions. 'The very act of "thinking about thinking", in which people develop an understanding of how brains and behaviours work, has the potential to empower people as part of a new model of active,



21st century citizenship,' the report says.

At the heart of the new report is a qualitative study involving 24 people who were taught five principles of decision making over one or two workshops: 'Habit is king'; 'Go with your gut'; 'When it's difficult, just sit'; 'When you feel swayed, step back and say so'; and 'When you can't trust yourself, ask others for help'.

Phenomenological analysis of the participants' decision-making diaries, kept for two weeks, showed that they'd found the information about habit forming most useful – especially the idea that breaking old habits can be more effectively achieved by changing social and

environmental circumstances, rather than simply relying on will power. '[W]hen people are informed about how their brains and behaviours work, they find this information interesting, useful in tackling immediate dilemmas and helpful for reflecting on the areas of their lives that they have found most problematic over time (e.g. quitting smoking),' the report says.

Responsibility for the Social Brain Project has now passed to the RSA's senior researcher Dr Jonathan Rowson. He told us the plan is to develop 'an account of the kinds of psychosocial skill required to adapt to what [developmental psychologist] Robert Kegan calls our "hidden curriculum", namely the implicit cognitive demands of adapting to 21st-century challenges like globalisation, environmental degradation and technological change. We intend to follow the pattern of *Steer* and track what

Hutton argued that ever since the fall of the Berlin Wall the world's banking system has been run in greed-based fashion, with maximised incentives and proportionality thrown out of the window. 'This was rooted in a mistaken view of human nature,' he said, 'but they got their comeuppance and the whole edifice came crashing to the ground.' Hutton added that we've exhibited misplaced faith in the wisdom of the crowd (thus fuelling market bubbles); that we look for narratives, which are often false, to explain events; that we're myopic; but that fortunately more and more economists are realising that their models based on rationality are wrong.

On a similar theme, Oliver James – a former clinical psychologist and author of *Affluenza* – claimed the rise of materialism was responsible for the doubled rates of mental illness in the UK relative to our European cousins. 'Selfish capitalism, neo-liberal economics and Thatcherism led to a massive change in the values of the population,' James argued. 'There's good science to show that this materialism is associated with more mental health problems. At the heart of the problem is

happens when we share our account with interested parties...for instance police officers, teachers and social workers, depending on our theoretical emphasis.

'Our basic position is that if "knowledge is power", knowledge about how to change our behaviour might be particularly empowering,' Rowson said. 'So we are curious to see what happens when behavioural science is viewed as a public good.'

The RSA welcome the input of psychologists. You can get involved by being an early contributor to the RSA Social Brain Wiki (<http://social-brain.wikispaces.com>) and by giving feedback to relevant blog entries. 'We plan to host expert seminars on various aspects of our project,' Rowson said, 'so please get in touch if you would like to contribute your expertise.' ❏

Access the *Steer* report: <http://bit.ly/9vMn1b>

## DEVELOPING HEALTHY, SAFE CHILDREN

From primary-school age and upwards children should be given age-appropriate education about sex, relationships and alcohol, beginning with advice on the value of friendships and having respect for others. Education of this kind helps children make healthier and safer decisions and improves their school performance. That's according to draft guidance published by the National Institute for Health and Clinical Excellence published in June, the final version of which is due in January 2011.

The draft guidance cites research which found 40 per cent of young people reported their sex and relationship education was poor or very poor. Among other details, the guidance recommends that parents be offered training in effective strategies for talking to their children about sex and relationships. The guidance also states that there's a need to reassure parents that education does not promote early sex.

this [mistaken] belief that greed is good.' James went on to document the spiralling levels of household debt through the nineties and into the noughties – over £1400 billion by 2008. 'The net effect on our psychology was the rise of shop-till-you-drop, credit-fuelled consumer junkies,' he said.

Warming to his theme, James argued that 'Labour created a personality disordered system' of 'arrested development, febrile emotions, narcissism... There's a tendency for people at the top [of business, finance, etc.] in the UK to be personality disordered, to compensate for feelings of powerlessness'.

By the time the discussion was opened to the audience, James appeared to have thrown caution and sound argument to the wind. 'I had the misfortune of studying a psychology degree,' James lamented, 'most of it is just rubbish and boring.' Psychoanalysis – 'both my parents were psychoanalysts' – is way ahead of other psychological approaches, James boasted. 'The care we receive in the early years is hugely consequential,' he rightly noted, before adding: 'the human genome project, perhaps with the exception of autism, has shown that there's no evidence for mental illness being caused by genes.' The intention was presumably to bolster his argument that selfish capitalism, not genes, are responsible for rising rates of mental illness. But James

There's also an emphasis on the need for children with physical, learning or communication difficulties, to also receive good quality sex, relationships and alcohol education.

Simon Blake, Chief Executive of the young people's sexual health charity, Brook, is a Programme Development Group member for the new guidance. He said: 'It's a myth that sex and relationships education encourages children to be more promiscuous or have sex at an early age. In fact, evidence demonstrates this type of education helps children and young people resist pressures to get involved in activities that might damage their health. Importantly, it helps them develop the skills to only have the sex they choose when they are able to enjoy and take responsibility for their personal relationships and sexual health.' ❏

The draft guidance can be accessed via <http://guidance.nice.org.uk/PHG/Wave12/77>

was now misinforming the public: as many readers will be aware, genes are hugely significant in mental illness, it's just that many genes and the interactions between them are what's important rather than there being a specific 'gene for' one particular condition or another.

Last to speak was the psychoanalyst Susie Orbach. The problem, she said, was that when systems change, people hurt, and we've experience the most profound change since the 1970s away from social democracy to neo-liberalism. Money, she explained, is used by people as a badge of identity – a way to stratify and arrange ourselves. But finance is opaque, covered in star dust, conducted by people playing extremely complex games. 'We are in huge confusion about what we want to be as a society – we've undergone a trauma that can't be explained,' she said.

'What I see happening,' Orbach went on, 'is a person receives a large pay cheque. It's so enormous, there's no way to assimilate its meaning: it enchants, delights, terrifies. But there's this incapacity to talk about its meaning and the only response is a drive to try to earn even more next year.' ❏

The panel discussion was held at Conway Hall in London in advance of a three-day conference at Birkbeck College: 'Psychoanalysis, Money and the Economy', convened by the Freud Museum.

## ESSAY PRIZE WINNERS

The Changing Faces' annual essay prize, on the subject 'Coping with Disfigurement', has been won by two university students.

Ben Baker, a medical student at the University of Nottingham, examined the unique challenges for adolescents with disfigurements and the interventions that may help their everyday living. Charles Gallaher, from University College London Medical School, looked at psychosocial mechanisms of coping with visible difference.

The prizes were awarded to the students at the Appearance Matters 4 conference in Bristol, organised by the psychology-led Centre for Appearance Research.

Read the essays at <http://bit.ly/auk94m>.

The Higher Education Academy Psychology Network's annual student essay award has been won by Louise Murray, a third-year undergraduate at the University of Edinburgh. This year's question was 'How, and why, should psychology staff provide feedback on your academic performance?'. James Donnelly, a second-year psychology student at Southampton Solent University, and Society member Laura Jebb, a first-year psychology student at the University of Salford, were very close runners-up.

Read the essays at <http://bit.ly/982fty>

## PSYCHOLOGY AT THE SCIENCE MUSEUM

In June the Science Museum unveiled its new 'Who Am I?' gallery. The exhibits explore the science of who you are through intriguing objects, provocative artworks and hands-on exhibits. There has been significant input from the BPS Curator of Psychology, and concepts explored include identity, personality, memory, consciousness, emotions and relationships.

In October a temporary exhibition will open celebrating psychoanalysis as a body of knowledge and as a treatment, and marking the centenary of the foundation of the International Psychoanalytical Association.

For links to 'Who Am I?' and more, visit [www.bps.org.uk/hopc](http://www.bps.org.uk/hopc) and click on the Science Museum logo.

## RESEARCH ETHICS WEBSITE

A new ESRC-funded website for social science researchers, developed by a team at the Institute of Education, aims to help researchers to find their way through the regulations and procedures that can apply to social science research, from grant applications to ethics review and beyond.

Read the website at [www.ethicsguidebook.ac.uk](http://www.ethicsguidebook.ac.uk)

# OBEs for psychologists

Three psychologists were recognised in the latest round of Queen's Birthday Honours, published in June, and *The Psychologist* congratulates them all.

Dr Elizabeth Howells, Head of Primary Care and Health Psychology for Avon and Wiltshire Mental Health Partnership NHS Trust, was appointed OBE for services to mental health care in Wiltshire. Dr Howells told us: 'I am absolutely amazed I have been given this honour but realise that is actually an award for the service I happen to lead. I hope it will continue to raise the profile of the service.'

'I am most proud of the fact that we have maintained a no-wait service in Swindon for 17 years. This started as a small service but has now grown to cover the whole of Wiltshire. This is due to using the LIFT (least intervention first time) within a stepped-care model. We were the first stepped-care service for mental health in the country and back in the nineties it was often a fight to get acceptance. We are probably still the only one with no wait and no exclusion criteria apart from active psychosis and active, imminent, serious suicide risk – these referrals are directed straight to secondary services.'

Howells says she and her colleagues, to whom she says she is indebted for the pleasure and praise her OBE will bring, continue to fight for more widespread use of the LIFT model, and for IAPTs to adopt a more primary/community type approach in line with New Horizons. 'For many services there is a danger of slipping back into a secondary care model delivered in primary care,' she says.

Howells and her team would also like to see more use of psychoeducational courses both to assist with current problems and prevent future distress, and to that end her service has already started a stepped-care approach to health-related problems. 'I would also like to add that

most of the ideas came from Professor Jim Orford, the great proponent of community psychology.'

Dr Rachel Perkins was appointed OBE for services to mental health. Dr Perkins is Director of Quality Assurance and User Experience for South West London and St George's Mental Health NHS Trust. 'I am

really flattered to have been awarded an OBE,' she said. 'However, I think it is important to make clear that I could not have done the things that I have in my career were it not for all the talented and committed people with whom I have had the privilege to work over the years.'

'For the last 30 years, both in my day job and outside, I have been committed to improving the lives and life chances of people with a mental health condition – especially those facing more serious challenges. Initially I was heavily involved

in closing the old, remote asylums and establishing community services. Now we face the challenge of moving beyond "care in the community" to ensuring that people with mental health conditions have the same rights and opportunities that all citizens have a right to expect. In this context I have done a great deal of work looking at the development of recovery-focused practice and self-directed support.'

However, Perkins says it is her work establishing programmes to help people with mental health problems get back to work that she is most proud of. 'It seems to me that the right to contribute to the community in which we live – and be recognised and rewarded for that contribution – is one of the most important rights of all. What I treasure most is the memories of all the people – many of whom thought they would never work again – who have successfully gained employment and made a success of their careers with the support of the programmes I have initiated.'

Dr Emma Barrett of the Ministry of Defence was also appointed OBE. □



Dr Elizabeth Howells OBE

# Talking therapies

Psychological therapies will continue to be rolled out across the NHS in the coming year, the government has announced.

Visiting a psychological therapies service in Berkshire West, Health Secretary Andrew Lansley pledged £70 million funding and said: 'Our Coalition Programme set out our intention to ensure greater access to talking therapies. We want to offer long-term solutions to people with mental health problems and psychological therapies do that.' Lansley promised to broaden the geographical coverage of services and also the range of therapies available, saying that 'this will help us to deliver more choice and give people better access to the right

psychological support'.

Care Services Minister Paul Burstow said: 'It is early days for the programme, but we know we need to do more to increase the number of trained therapists and reduce waiting times. It means that by 2011, we will have trained over 3600 therapists, with services up and running in every part of the country.'

John Hanna, Policy Unit Director for the British Psychological Society's Division of Clinical Psychology, said: 'The Society is delighted to receive the news that the new coalition government will continue to fund the Improving Access to Psychological Therapies programme for the coming year. We hope, during this parliamentary term, that this

vital invest-to-save endeavour of delivering evidence-based psychological therapies to people with mild to moderate depression and anxiety can be extended to all who would benefit from similar improved access, in concordance with Mind's widely endorsed "We Need to Talk" campaign. Access to evidence-based psychological therapies remains extremely variable across conditions and regions, leaving many people in recurrent states of psychological distress, with their potential to contribute to society unfulfilled. Providing full access to NICE-recommended treatments in mental health will alleviate distress and, in the longer term, enhance national productivity.' JS

## Dealing with self-harm

Many people who harm themselves are failing to receive the help they need because of a 'patchy' provision of services across the UK and a lack of supervision and training of NHS staff, according to a new report.

The Royal College of Psychiatrists surveyed over 1500 of its members for self-harm, suicide and risk (available from <http://bit.ly/cvaEPn>).

Less than half the respondents felt that they or their team had sufficient training to undertake assessments of people who had harmed themselves. Many respondents reported that junior doctors and other inexperienced health professionals are left – often at night – to assess and manage the complex and potentially life-threatening situations of people who have harmed themselves or attempted suicide. The survey suggests the situation is particularly bad in accident and emergency departments.

Lord John Alderdice, who chaired the working group which produced the report, said: 'Overall the evidence painted a worrying

picture of standards of care in UK hospitals. This situation is unacceptable by any reasonable standard. Lives may be at stake. Well-being certainly is.' A key recommendation of the report is therefore that NHS services, particular in A&E, should be managed in a way which ensures people who have self-harmed or attempted suicide

have proper access to care and treatment by fully trained clinical staff, and that the NICE guideline on self-harm is implemented.

Professor Rory O'Connor, who represented the British Psychological Society on the working group, told *The Psychologist*: 'This is an important and timely report which not only calls for a proper public health strategy to include self-harm but also

emphasises the continued importance of national suicide-prevention strategies, especially at this time of economic turbulence. In addition, it also highlights the urgent need for more funding for research on self-harm and a better understanding of why people self-harm and attempt suicide.' JS

## FUNDING NEWS

The European Commission, under its Mobility and Transport strategy is offering **research grants to investigate road safety**. Areas of interest include ensuring greater awareness, understanding and communication between various road users; the impact that an ageing population has on road safety; the impact of gender on driving and road behaviour; and the impact of new technology on safety. Closing date is 15 September 2010.

<http://bit.ly/cQnMvx>

The Health Innovation Challenge Fund is a £100 million funding partnership between the Wellcome Trust and the Department of Health. It will stimulate the creation of innovative healthcare products, technologies and interventions for the benefit of the NHS and beyond. The current call is for **monitoring of chronic illness in the home and remote settings**, with solutions sought for issues relating to patient self-monitoring and self-management of chronic conditions. Preliminary applications should be made by 1 October 2010.

<http://bit.ly/k4y5q>

The National Institute on Aging has funding available for small-scale Research Project Grants to research the **reasons behind the divergent trends that have been observed in health and longevity for older adults**, both across industrialised/high life expectancy nations and across geographical areas in the US. Closing for letters of intent is 14 September.

<http://bit.ly/dvwnae>

BackCare has funding available to support **research into back pain**. Psychological and social factors relevant to pain are an area of interest. Research should be people-orientated, produce tangible results, be original and of high quality. The next closing date for applications is 30 November 2010. Grants of between £5000 and £20,000 are normally given for a period of up to three years.

<http://bit.ly/cNUSRY>

info

For more, see [www.bps.org.uk/funds](http://www.bps.org.uk/funds). Funding bodies should e-mail news to Elizabeth Beech on [elibee@bps.org.uk](mailto:elibee@bps.org.uk) for possible inclusion

# An emerging dialogue of learning

Erica McAteer and Christian Jarrett report from an event hosted by the Centre for Educational Neuroscience, based across Birkbeck College, the Institute of Education and University College London

Educational neuroscience is a rapidly emerging discipline, with educationists, psychologists and neuroscientists working together to improve learning across the lifespan. This conference in the 'Current Trend' series, sponsored by the *British Journal of Educational Psychology*, aimed to promote interdisciplinary engagement, introduce the methodological and practical issues, and specifically engage educational psychologists.

Day 1 began with brief welcomes from Andy Tolmie, on behalf of the *British Journal of Educational Psychology*, and Diana Laurillard on behalf of the Centre for Educational Neuroscience (based across Birkbeck College, the Institute of Education and University College London), who hosted the event.

Norah Frederikson (University College London) identified key areas for development from an educational psychologist's perspective: understanding of biological and biometric processes that determine learning, knowledge of neurological determinants providing better understandings of typical and atypical development and implications for education risk, and neural methods for evaluating the remediation processes as well as for furthering educational debate. Acknowledging a major challenge from the very different philosophies underpinning psychology, education and the natural sciences, she proposed educational psychologists as excellently placed to mediate the developing neurological agenda within the educational context. In assessing the state and development of children with whom they work, they have models to inform cognitive, affective and environment levels – but the biological level is a different story, and at the neural level the box is almost empty. Integrative causal models of disorder are needed.

Opening a session on language and literacy, Usha Goswami (University of Cambridge) focused on basic neuroscience research for better understanding of developmental dyslexia. The fine structure of the speech signal, the phonetic structure, is complemented by an 'amplitude envelope' which factors several auditory components to give prosodic structure. Brain imaging work suggests these components are analysed by different bits of the brain and then bound together to give perfect speech

perception. Goswami and her colleagues tested children's auditory processing of language and of music, and found that whilst fine structure is attended to for music, it is the amplitude envelope that is most important for language. In particular, sensitivity to the rise time, which is the rate of change as each stressed syllable is articulated, appears to be important in dyslexia. Goswami found that 25 per cent of unique variance in reading is explained by sensitivity to rise time. New work suggests problems in speech production of syllable stress for people with dyslexia and, in the realm of music, an across-the-board difficulty among children with dyslexia for hearing metrical structure.

Michael Thomas (Birkbeck College) provided an overview of the changes in the brain across the lifespan: the gentle decline in grey matter, areas of plasticity in connectivity between neurons, and an increase in white matter, longer-range fibres relating to 'consolidated' knowledge systems built over time. A system that is diffuse, widespread and bilateral at start gets 'tuned' to speciality and locality as the infant brain develops its adult function. Thomas suggests that learning which relies on low-level perceptual and motor skills (e.g. multiple languages, musical or gymnastic skills) should begin at an early age. The order of acquisition is important and aspects that are later developing may be very important for educational achievement. Metacognitive skills, self-regulation and such things as the use of analogy involve the integration of many different brain areas, and that kind of integration depends upon the association cortex, which has a longer period of plasticity. Curriculum development should account for such changes: from early, implicit, learning, best engaged through exploration and natural exposure and coping with many tasks at once, to adult learning that might best be engaged through intense and motivated training, lack of interfering tasks, and explicit

strategic information.

Heinz Wimmer (University of Salzburg) closed the session by focusing on the 'hotly debated research area' of dyslexia in reading and writing. He acknowledged the usefulness of brain research for informing theoretical positions and explanatory frameworks, pointing to his studies using methods such as eye tracking and fMRI. Phonological training could raise children with dyslexia to fluency levels close to controls, but a lot of this was lost two

Usha Goswami reported on children's auditory processing of language and of music

weeks later and there was little transfer to similar words. Wimmer suggested that this indicates that a sensory deficit in phonology cannot be the main issue, and that fMRI work points to a problem of interfacing with high-level visual processing.

Opening the Learning and Numeracy session from the neuroscience perspective, Daniel Ansari (University of Western Ontario) described how the brain mechanisms underlying mental arithmetic are modulated by (at least) three factors: development, competence and strategy choice. For example, younger children use more frontal, working memory resources, reflecting procedural strategies, to solve arithmetic problems. They also use the hippocampus more than do older children, and Ansari suggested that the

hippocampus might play a time-sensitive role for encoding of arithmetic fact into long-term memory. As we mature, there might be an important dynamic interplay between the hippocampus and the left angular gyrus in the process of encoding and retrieval of arithmetic facts.

Taking a developmental perspective, Marie-Pascale Noel (UC Louvain) suggested that models of how children develop their arithmetical abilities and how they learn abstract numerical symbols need review and reconsideration.

A path for exploration involves the approximate number system, the development of an exact number system and the mapping to the symbolic number system. In Noel's work, different tools that have been found successful in training children with dyslexia for maths performance improvement might make use of this exploration.

Closing the Learning and Numeracy session, Brian Butterworth (University College London) focused on dyscalculia, a selective deficit in the capacity to represent and process 'numerosities' (the number of things in a set). But is numerosity a predictor of arithmetical performance, or vice versa? With 14-year-olds, Butterworth found no correlation between low numeracy and approximate arithmetic test performance. However, low achievers in maths were significantly worse at symbolic tasks, indicating an issue of mapping from the symbolic domain to the conceptual brain. From a range of studies with children and adults manifesting dyscalculic behaviour, Butterworth's group devised tools to explore numeracy awareness, which they are developing as computer-based resources for teachers. The final stage, yet to be taken, is to evaluate these through the tools of neuroscience.

Day 2 was packed with further examples of ways that findings from neuroscience have the potential to inform educational practice. It began with Uta Frith describing the Royal Society's current Brain Wave project, emphasising the relevance of neuroscience to education and lifelong learning.

David Schwartz of Stanford University described a brain-scan study of adults that involved them providing the mid-point

between pairs of integers (e.g. -4 and 6). Reaction times were faster when the integers were symmetrical (e.g. -5/5) and this was associated with increased activation in visual and temporo-parietal regions. Other conditions (e.g. the so-called 'anchored' pairs with zero as one of the integers) were also associated with speedy RTs but not with the extra brain activity, thus suggesting that with symmetrical pairs only, visuospatial systems were recruited to help solve the task. Schwartz said the finding suggested maths teaching could benefit from focusing on symmetry.

Sarah-Jayne Blakemore presented research that found differential activity in the brains of adults and adolescents whilst they thought about scenarios involving social emotions such as guilt and embarrassment. The finding points again to the fact that adolescents may look adult-like on the outside but their brains remain immature. Results like these, Blakemore said, suggest that 'the school curriculum should be made brain-stage appropriate.'

Other lessons for the school curriculum came from Christine Howe at the University of Cambridge. She discussed several studies looking at children's lay beliefs about the laws of physics – for example, whether two balls of different size will fall through a vacuum at the same speed or not. These lay beliefs are hard to budge, Howe explained, probably because scientific theories are treated by the children's brains as erroneous and implausible.

Howe tied together research by Jonathan Fugelsang and Kevin Dunbar, which found error detection systems in the brain (i.e. dorsolateral prefrontal cortex, anterior cingulate cortex, precuneus) were activated by implausible accounts of how pills can alleviate depression, with research by Laura Pettito and Kevin Dunbar, showing that the same network is activated when naive students observe balls behaving according to the laws of physics or when physics students observe balls behaving according to lay beliefs. Taken together, Howe said these findings and others suggest, contrary to the existing curriculum, that scientific ideas might be better taught as 'gradual approximations', so as to bypass students' incredulity.

What about developmental disorders? Simon Baron-Cohen of the University of Cambridge told delegates about two educational interventions – one a facial/voice emotion sorting task (<http://bit.ly/9cGKlp>); the other an emotion recognition task with human faces projected onto the front of train characters ([www.thetransporters.com](http://www.thetransporters.com)) – that were inspired by his research showing that children with autism have deficits in empathy, including emotion recognition, combined with particular strengths in systematising – that is, understanding systems by breaking them down into their constituent parts. Both the interventions have been shown to lead to improvements in emotion recognition – an example, Baron-Cohen said, of how 'autistic strengths can be exploited to aid the teaching of weak areas'.

Besides highlighting specific findings with potential educational relevance, speakers also discussed ways for educationalists and neuroscientists to work together more effectively. Schwartz said that it was important for researchers in both camps to find new phenomena 'on neutral ground' to study together rather than each side expecting the other to come and join their particular line of inquiry. Also, he said that when translating research into practice, neuroscientists shouldn't just prescribe certain practices, which is alienating, rather they should provide educators with some understanding of the methods that were used to reach the new findings.

Meanwhile, Denis Mareschal of Birkbeck College had advice for researchers developing learning theories. He said these need to be able to account for developmental change and be consistent across both cognitive and neural levels of explanation. He suggested Bayesian models – a statistical method for combining prior beliefs with current observations – as a general framework for inference in the brain that fits this bill. Such models are naturally developmental (as they factor in past beliefs and new experiences), he said, and they can account for both children's word learning (cognitive level of explanation) and explain neuronal spike patterns. 'True understanding', he concluded, 'requires a dialogue between cognitive scientists and educationalists.'

# Deepwater Horizon and beyond

Rhona Flin, Professor of Applied Psychology, Industrial Psychology Research Centre, University of Aberdeen

On 20 April 2010 there was a blow-out and explosion on the Deepwater Horizon drilling rig in the Gulf of Mexico, which killed 11 workers and created the worst oil spill ever experienced by the USA. A major investigation and congressional hearing are now under way in an attempt to discover the cause of the accident and to evaluate the adequacy of the response. As our American colleagues are now discussing at [www.siop.org](http://www.siop.org), what contribution might psychology make to our understanding of this type of oil industry accident?

Industrial psychologists have been studying worker well-being and safety in the UK and Norwegian sectors of the European offshore oil and gas industry since the mid-1980s (see Flin & Slaven, 1996; Hellesøy, 1985). The North Sea platforms and rigs operate in remote, hostile locations, on top of hazardous oil and gas wells containing high-pressure hydrocarbons. Each installation is crewed by a hundred or more technical and support staff, working 12-hour shifts, typically on a 14- to 21-day offshore rotation, with no rest days during the offshore period. In a rare journalistic account of this workplace, Alvarez (1986) wrote: 'The oil installations are strange in the same way as the awkward, seemingly patched together contraptions NASA puts into orbit are strange. And the jobs in turn, are so complex that, to the outsider, the ingenuity required to do them seems like magic.'

This unusual industry was not easy to access for psychological research 25 years ago. The problem was not just the remote locations or the need to undertake helicopter underwater survival training before travelling offshore. In the UK, the main barrier was the lack of interest from the oil companies in having their workforce studied, especially on psychosocial topics. The early exploration and production phase had been characterised by extremely innovative engineering successes to find the subsea hydrocarbons and to design the huge platforms that would extract them. The solving of technical challenges was the priority and of course, the industry was almost entirely staffed by engineers. Although there were some early studies examining occupational stress (Sutherland & Cooper, 1986; Sutherland & Flin, 1989), the human element in offshore operations did not seem to be high on the research agenda. This was not peculiar to the North Sea. House (1985), a Canadian researcher, wrote: 'Worldwide, there have been few systematic investigations of the offshore oil industry and its impact upon oil workers and their families. The dearth of empirical material has not been due to the lack of interest by researchers, nor even primarily, by a lack of available funding. Rather, the main cause has been the successful resistance of the offshore petroleum industry to have itself investigated and the reluctance of most governments that it be studied against its will.'

Then everything changed. In July 1988 the Piper Alpha oil platform in the North Sea, situated 120 miles from the Scottish coast, suffered an explosion and fire, killing 165 of the crew, plus two rescuers. This was one of Britain's worst industrial disasters and a large-scale public inquiry ensued. A primary cause of the accident was a failure to transfer essential information about a pump between the day shift and the night shift. Unfortunately the emergency response on Piper Alpha platform and its adjacent platforms was problematic, leading to questions about the competence of the offshore managers to take command in a crisis. Underlying factors influencing both the safety management and the command of the emergency were linked to an organisational culture in the operating company that appeared to prioritise production more than safety. None of these deficiencies was going to be remedied by engineering solutions.

Lord Cullen's influential report (1990) made 106 recommendations, for regulation, management, technical operations and procedures. It was clear that a greater understanding of human behaviour would have to be factored in to many aspects of the new safety management documents that the oil companies were busy writing. Suddenly there were requests for psychological input. We became involved in two research projects funded by the newly created Offshore Safety Division of the Health and Safety Executive, both addressing problems identified in Lord Cullen's report into the disaster.

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The first project was to examine the selection, training and competence assessment of the offshore installation managers who were in charge of these platforms and rigs, with particular reference to their ability to take command in an emergency. This necessitated visits to organisations such as military, emergency services, airlines and NASA to learn how they selected, trained and assessed the competence of their incident commanders. Despite domain differences, they all sought similar characteristics and skill sets. Much use was made of both

conditions. Beyond those attributes, they were not concerned with a particular personality profile but wanted commanders with awareness of their own strengths and weaknesses (Flin & Slaven, 1995).

It transpired that very little was documented about these processes and the collated information became a book called *Sitting in the Hot Seat* (Flin, 1996). This also discussed the available psychological evidence on key skills relating to situation assessment, decision making, leadership and stress management. Classical decision research had minimal relevance for these high-pressure domains where life-saving decisions had to be made in minutes. But the emerging science of naturalistic decision making, where psychologists were studying fire fighters, military commanders and airline pilots (Zsombok & Klein, 1997), offered an ecological validity that could be applied to the offshore domain. The oil industry introduced simulator training and assessment for the offshore managers, which enabled studies of their decision making that confirmed the importance of practice in quickly assessing a situation with little time for considering options (Flin, Slaven et al., 1996).

Following Lord Cullen's report, the oil companies were required to produce safety cases for each installation, showing the regulator that the hazards had been identified, risks quantified and measures put in place for risk control. There was a flurry of activity across the industry to conduct quantitative risk assessments. But what also had to be taken into account was how the workforce perceived these risks, and this was the basis of our second project. Collaborating with Norwegian psychologist, Torbjørn Rundmo from Trondheim University, Kathryn Mearns and I began to design risk perception questionnaires for the offshore workforce (Flin, Mearns et al., 1996). What became apparent was that workers were in fact aware of the hazards. What we needed to

explain was why they actually took risks. What was driving unsafe behaviours? Our risk-perception questionnaires evolved into safety-climate surveys which showed that managers and supervisors were key influences on the patterns of behaviour that were accepted at the worksites (Mearns et al., 2001). Risk perceptions were important, but motivational factors and expectancies were also playing a powerful role in workplace safety. Several studies of supervisors and site managers ensued, showing that transformational leadership styles could be linked to safer behaviours on both oil platforms and oil tankers.

But it was not only the site managers who influenced safety. The offshore workforce knew all too well that site managers were directed by more senior managers onshore. There was a degree of scepticism as to the safety priorities of the top managers. This was found across companies, but in one of them, the CEO of exploration and production was sufficiently concerned to trigger a programme of work to develop an upward appraisal tool for senior managers to be assessed on their safety commitment by the managers who reported to them. Confidential reports were provided to each manager showing the contrast between self and upward ratings, then aggregated data were presented to groups of managers so that areas where they were not demonstrating safety commitment to subordinates could be addressed (Bryden et al., 2006). This approach was subsequently extended to hundreds of managers across the company's international sites and the rating tool, 'Seeing Yourself as Others See You' is now available on the web ([www.energyinst.org.uk/heartsandminds](http://www.energyinst.org.uk/heartsandminds)). Other psychologists, such as James Reason and Dianne Parker from Manchester University with Patrick Hudson from Leiden University, also developed safety tools for the oil industry (see Hudson, 2007), several of which are on this website.

Currently the Energy Institute is sponsoring research by one of our PhD students, Isabella Roger (2010), who is endeavouring to identify the leadership behaviours of strategic managers that influence organisational safety. As anyone who watched the questioning of BP CEO, Tony Hayward at the congressional hearing into the Deepwater Horizon disaster will realise, it is not only the behaviour of the oil industry workers that is about to be scrutinised in the months to come. And this time it will be lawyers doing the investigation rather than psychologists.

high-fidelity simulation to discover who had the 'right stuff' to take command in stressful, risky situations. What they looked for was leadership, stress resistance and the ability to take autocratic decisions rapidly in uncertain

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## Good, bad and the garden of language

Imagine a garden filled with sweet-smelling flowers and weeds. The flowers vastly outnumber the weeds, but the latter are more varied. And there's another asymmetry – whereas the flowers have a pleasant scent, the weeds aren't just scentless, they're poisonous, they can kill. According to a new study, life is like this garden. Positive events outnumber negative events, but negative events are more varied and potent. Paul Rozin and colleagues say that the English language reflects this state of affairs and so do at least 20 other languages.

Rozin's team began by analysing a corpus of 100 million words of spoken and written English and found that positive words are used far more often than negative words – just as you'd expect if positive events are more common (to take one example, 'good' is mentioned 795 times per million words compared with 153 mentions per million for 'bad').

Moreover, the researchers say we've adopted a number of habits of convenience that reflect the frequent use of positive words in our language (in turn reflecting the greater frequency of positivity in the world). For example, positive words tend to be 'unmarked' – that is, the positive is the default (e.g. 'happy') whereas the negative is achieved by adding a negating prefix (i.e. 'unhappy'). Rozin cites four more such habits. Here's one more: when stating pairs of good and bad words together, it's nearly always the convention to mention the positive word first: as in 'good and bad' and 'happy and sad' rather than the other way around.

Turning to the dark side, the greater variety of negative events in the world is also reflected in English usage. Many words referring to negative states or

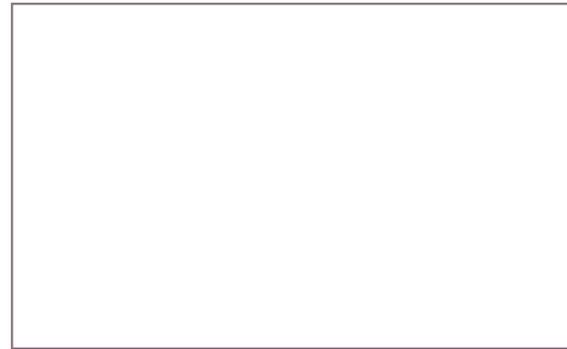
situations don't have an opposite: for example, 'sympathy' (i.e. there is a word for caring about another's misfortune, but no word to describe taking pleasure at another's good fortune), 'murderer' (there's no word for 'giver of life'), 'accident', etc.

To see if these patterns are reflected in other languages, Rozin's team interviewed the speakers of 20 languages, from Arabic to Brazilian Portuguese to Cantonese. Overwhelmingly, the patterns found for English also applied in these other languages. For instance, for eight sample adjectives, including 'pleasant', 'dirty', 'disgusting' and 'pure', it was the convention in 83.9 per cent of cases across all 20 languages for the positive word to be stated first alongside its negative opposite.

Likewise, the negative-situation words 'sympathy', 'murderer', 'risk', and 'accident' nearly always lacked a positive opposite.

'We hope that this study calls the attention of emotion researchers to some interesting and widespread valenced biases in the use of language,' the researchers said. 'We believe these biases are adaptive responses to asymmetries in the world, as it interacts with organisms.'

In the April issue of *Cognition and Emotion*



## How hunger affects our economic decision making under risk

In *PLoS One* (see <http://bit.ly/cpuqvo>)

The hungrier an animal becomes, the more risks it's prepared to take in the search for food. Now, for the first time, Mkael Symmonds and colleagues at University College London have shown that our animal instinct to maintain a balanced metabolic state influences our decision making in other contexts, including finance.

Nineteen male participants performed the same gambling task on three occasions, a week apart: either after a 14-hour fast; immediately after eating a standard 2000-calorie meal; or one hour after eating a 2000-calorie meal. The task simply required participants to choose repeatedly between pairs of gambles, one of which was always riskier but more lucrative than the other.

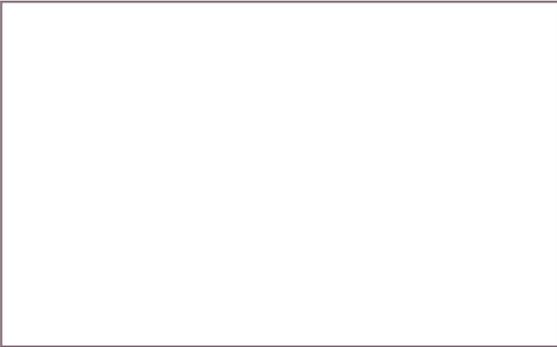
The immediate effect of the meal was to neutralise risk aversion. For the men with more adipose tissue and higher baseline levels of leptin (a hormone that suppresses appetite), who are generally more risk averse, this meant they became less risk averse when performing the task right after eating. By contrast, for men with less adipose tissue and lower leptin levels, who are generally low risk averse, their risk aversion was increased immediately after eating, just as you would expect based on the behaviour of hungry animals.

An hour after eating gives time for hormonal effects to kick in. As expected, men who

reported feeling less hungry an hour after eating, and whose levels of acyl-ghrelin (a hormone that increases appetite) in the bloodstream had fallen, played the gambling game in more cautious fashion. 'This parallels findings in foraging animals,' Symmonds told the Digest, 'where changes in metabolic state promote changes in behaviour to maintain or reach a metabolic benchmark (to take more risk if intake rate is relatively low, and less risk if intake is relatively high), but here we see the effect in the economic domain.'

The researchers said their findings have implications for understanding the behaviour of dieters, the obese and people with eating disorders. 'Prandial ghrelin suppression is reduced in obesity,' Symmonds and his co-authors wrote. 'Thus we predict greater risk-seeking in obese individuals following feeding, augmented by larger immediate post-prandial effects on risk taking due to higher baseline adiposity.'

The authors claim that this mechanism may underpin a component of the aberrant decision making seen in obese individuals, including impulsivity and reward-seeking behaviour. 'We also predict profound effects on decision-making for individuals operating at very low baseline energy reserves, and note such an explanation has been invoked to explain increased impulsivity in anorexia nervosa.'



### The homeless man and his audio cave

In the June issue of the *British Journal of Social Psychology*

We're defined in part by where we are, the places we go and what we do there. We adorn our homes with paraphernalia caught in the net of life – the photos, the books and pictures. But what happens when you're homeless? How do you define your space and identity when your home is a public place? To find out, Darrin Hodgetts and colleagues have conducted an unusual 'ethnographic' case study with 'Brett', a 44-year-old homeless man in Auckland.

The researchers gave Brett a camera, asked him to take photos representative of his life and then they conducted two in-depth interviews with him, using the photos as springboards.

The clearest finding to emerge was the way that Brett used a portable radio to insulate himself from the outside world – what the researchers called an 'audio cave'. 'I've got a sound bubble around me,' Brett said, 'and I can wander through the streets without paying attention to what's going on around me.' At the same time, by consistently listening to his favourite station George FM, Brett was able to develop a 'fleeting sense of companionship and "we-ness" with the station's other listeners', the researchers said.

Brett is a self-confessed loner who avoids contact with other people where possible and who tries to conceal his homeless status. He told the researchers about the places he went that enabled him to do this, including a former gun emplacement with stunning

views of the sea; Judges Bay where there are free showers and gas barbecues; and in the city centre, the church, bookshops and libraries. These places allow Brett to experience 'life as a "normal" person who has interest in books and reading, or simply escaping the city to sit and reflect,' the researchers said. By contrast, returning to photograph the public toilets on Pitt Street was an ordeal for Brett, reminding him of his time as a drug addict.

Brett referred to how other homeless people spend a lot of time sitting round talking and how it [homelessness] psychologically unhinges them. By contrast, the researchers said Brett had never 'lost himself' to the streets. '[H]is memories, imagination, and daily practices, including his use of space, provide anchorage to an adaptive sense of self and belonging.'

### For a longer life, say cheese!

In the April issue of *Psychological Science*

Look at a person's photo and it's tempting to think you can see their personality written all over it: stony-faced individuals appear sombre; others flashing a big, toothy grin seem more genial. An intriguing new study claims that these smiles are a reliable marker of underlying positive emotion, and as such are predictive of a person's longevity.

Ernest Abel and Michael Kruger had five people rate the smile intensity of 230 baseball players according to photos featured in the 1952 *Baseball Register*. The researchers used a three-point smile scale: no smile, half smile (mouth only), and genuine 'Duchenne' smile (muscles contracted around the mouth and corners of the eyes).

Focusing on the 150 players who'd died by the time of the study and controlling for extraneous factors such as BMI and marital status, the

researchers found that those who were flashing a genuine 'Duchenne smile' were half as likely to die in any given year compared with non-smilers. Indeed, the average life-span of the 63 deceased non-smilers was 72.9 years compared with 75 years for the 64 partial smilers and 79.9 years for the 23 Duchenne smilers.

A follow-up study was similar to the first but observers rated the attractiveness of the same players rather than their smile intensity. Unlike smile intensity, attractiveness bore no relation to longevity.

'To the extent that smile intensity reflects an underlying emotional disposition, the results of this study are congruent with those of other studies demonstrating that emotions have a positive relationship with mental health, physical health, and longevity,' the researchers said.



The material in this section is taken from the Society's **Research Digest** blog at [www.researchdigest.org.uk/blog](http://www.researchdigest.org.uk/blog), and is written by its editor **Dr Christian Jarrett**. Visit the blog for full coverage, more reports, an archive, comment and more.

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# Psychologists of our time

Lucy Maddox looks beyond the stereotypes

I am sometimes tempted to lie about my job. Persistent stereotypes of psychologists suggest I should swap my contact lenses for specs, cultivate some facial hair, and try to coax people into lying down on my soft furnishings. The stock response to a disclosure that I am a clinical psychologist is 'Oh no! You're analysing me!', with the implication that I will somehow understand people better than they are capable of understanding themselves.

Looking around, it's much easier to find contradictions to this stereotype than reinforcement. The last few months of psychological media involvement have included a personality special of *Child of Our Time*, the documentary co-produced by the BBC and the Open University that follows 25 children born in the year 2000. This double-bill presented an overview of the 'Big 5' personality traits: extraversion, neuroticism, openness, agreeableness and conscientiousness. Children and parents were assessed to establish their profiles, and research on the effects of personality on job choice was presented in accessible television style. Different departments of a magazine's staff, for example, were used to demonstrate how neuroticism can be harnessed to pay attention to administrative detail, whilst openness can provide creative flair in the editorial department.

The production accompanied the show with an online study 'The Big Personality Test', designed by Lab UK in collaboration with Michael Lamb and Jason Rentfrow of Cambridge University and launched in November 2009. I spoke

to John Oates, academic consultant from the Open University, who contributes to developing themes for each series, as well as devising family assessments and having a role in scriptwriting and editing. 'The online questionnaire has had a very impressive take-up,' John said. 'Over 200,000 people to date. We've designed similar interactives on the Open University website. You can get to them from the BBC page...they're very user-friendly. Results are analysed in real time and data are analysed and displayed back...as they accumulate.'

These surveys generate data which allow John and his colleague David Messer, who is also involved with the series, to investigate a number of questions. John cited examples: 'I'm particularly interested in Jerome Kagan's ideas on eye colour and inhibition in personality...people with blue eyes are supposed to be more inhibited. The most

recent interactive we've put up, which includes an eye-colour question and is still gathering data, is also investigating birth order and personality; the interaction between personality and whether you are first born, later born, or a singleton... that's had 50,000 participants already.'

A clear reward, then, of working with the media, is the potential for accessing a larger participant pool. John sees public benefits too: 'It's important to be able to bring developmental psychology research to a public audience. *Child of Our Time* has a tremendous outreach and a committed following. This year we produced a booklet which accompanied the series and we've already had 25,000

requests... I'm really pleased we can reach out to people with that sort of material.' John is confident that the series encourages thoughtful viewing: 'My input has been to help to encourage the audience to think about the programmes, not just passively receive information'. In his view the show 'encourages people to embrace diversity. The families are a real cross-section...there is a respect for problems of family break-up and reconstitution which affect half of the families.'

Diversity has certainly been a feature of recent psychology and media activity. At the darker end of human experience is the coverage of the tragic murders by Derrick Bird. Psychologists were called to comment, both on possible reasons for the sudden killings, and on likely effects on the local community. Ian Stephen, consultant forensic clinical psychologist, tried to make sense of the attacks: 'What seems to have happened is there was a trigger...and suddenly he's had enough. It's the straw that's broken the camel's back'. Chris Brewin advised the *Today* programme that although 'friends and family will provide much of what is needed initially...there will also be a minority of people who will have mental health needs...things need to be...put in place now.'

Less sobering, but for some equally hard to understand, the World Cup has prompted a search for psychological meaning-making over England's haphazard performance. Robert Green's inability to save 'that' goal prompted statements not only on sports psychology but also on Green's mental state: 'It was such a visible error, so many people watching,' Paul Russell (Bolton University) told *The Guardian*. 'Green will probably catastrophise it. He's got to get it in perspective.' The Society's Media Office has been joining in: they've just started commissioning stories on the football (and other topical issues) as part of a news service due to launch on the website this summer.

The varied contributions of these psychologists added a fresh perspective to the news, grounded in research, helping make sense of both the everyday, and the extremes of human experience. To this extent the stereotype rings true: psychologists can provide an analysis, or an insight into human behaviour and emotion that helps us to go beyond our immediate understanding of others and ourselves. This can relate to why we choose the jobs we do, triggers to darker aspects of human behaviour, or why we are always crap in the World Cup. We just can't always do it as a party trick.



contribute

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