Questionable research practices rife?

Questionable research practices are rife among US psychologists, according to research obtained by *The Psychologist*. Leslie John at Harvard Business School and her colleagues George Lowenstein of Yale and Drazen Prelec of MIT surveyed nearly 6000 academic psychologists in the US. Based on anonymous replies from 2155 of them, it's estimated that one in ten psychologists falsify data, and the majority are guilty of selectively reporting studies that 'worked' (67 per cent), failing to report all dependent measures (74 per cent), continuing to collect data to reach a significant result (71 per cent), reporting unexpected findings as expected (54 per cent), and excluding data post-hoc (58 per cent).

Admissions were higher among cognitive, neuroscience and social subdisciplines, and lower among clinical psychologists. The more questionable practices a psychologist admitted to, the more likely they were to claim such practices were defensible. However, 35 per cent of respondents said they doubted the integrity of their own research.

Surveys of this kind have been published before but this is the first to incorporate an honesty incentive, which has led to far higher admission rates than previously identified. Participants were told, truthfully, that more money would be donated to charity by the researchers based on an estimate of their honesty. This estimate was computed by comparing the participants' own confessions to questionable practices against the average rate of admission and participants' estimates for how many colleagues indulge in such practices.

In their report on the findings, to be published in the journal *Psychological Science*, John and her colleagues (psychologists by background) describe the methods they investigated as representing a large 'grey zone' of acceptable practice. These practices 'threaten research integrity and produce unrealistically elegant results that may be difficult to match without engaging in such practices oneself', they concluded. 'This can lead to a "race to the bottom", with questionable research begetting even more questionable research.'

John told us that she has no data on UK research practices but has no reason to believe a survey here would produce different results. She told *The Psychologist* she'd like to see bodies like the American Psychological Association and the British Psychological Society put their weight behind the reforms needed to reduce the use of questionable research practices.

On the Society's Research Digest blog, which was first to break details of the study, debate centred on the seriousness (or not) of the reported practices, and on whether they say more about the wider publishing culture as opposed to individual ethics. 'Neuroskeptic' thought that 'many of the questionable practices are actually quite hard to avoid doing within the current academic publishing system'. He also queried 'why this kind of methodological self-criticism seems to be focused on psychology', although it is arguably to the discipline's credit that it is. Others highlighted the reforms needed to address the issue: Alex Holcombe (University of Sydney) pointed to his psychfiledrawer.org, set up to act as a repository for failed replication attempts in experimental psychology, which should help counter the publishing bias towards positive results.

The new survey results come hot on the heels of the unfolding investigation into the practices of the disgraced social psychologist Derek Stapel (see December news), and they make for worrying reading when considered alongside a paper 'False-positive psychology' published in *Psychological Science* in November (free PDF from tinyurl.com/canb33z). In that paper, Joseph Simmons at the Wharton School, University of Pennsylvania and his colleagues used computer simulations and a real example experiment to show how the questionable research practices documented by John's survey can greatly increase the risk of false-positive results (that is, finding significant effects where in fact there is no effect).

For example, they succeeded in demonstrating the logically impossible finding that listening to children's music can reduce participants' actual chronological age. They obtained that result in a between-subjects design by: testing for numerous other outlandish dependent variables, any of which could have been chosen as the 'finding' if significant (including participants' political orientation and how often they refer to the past as 'the good old days'); by increasing the participant pool after failing to find a significant result with fewer participants; and by ensuring that father's age was included as a covariate, ostensibly to control for variation in baseline age across the participants (removing father's age as a covariate rendered the result non-significant).

Each of these factors adds degrees of freedom to the statistical analyses, thus undermining the notion of a nominal false-positive rate of five per cent (i.e. $p \leq .05$). However, the reporting rules of many journals wouldn't require the researchers to disclose many of these manipulations, leading the significant

BREAKING NEWS

The *Psychological Science* survey discussed here was detailed in public for the first time by the British Psychological Society Research Digest in December. For regular updates and to sign up to the e-mail, visit www.researchdigest.org.uk/blog and follow @researchdigest on Twitter.

PUBLIC SECTOR STRIKE ACTION

The public sector strike on 30 November was supported by several major unions, including the Association of Educational Psychologists (64 per cent support for strike action from a 30 per cent response rate) and UNITE (75 per cent support from a 31 per cent response rate).

Dr Khadj Rouf, Consultant Clinical Psychologist and member of the Applied Psychologists Occupational Advisory Committee, Unite the Union, told *The Psychologist*: 'We should not be afraid to speak out at a time when patient care is under threat, and when the rights of the public sector workforce are being eroded.'

How were services affected? Dr Rouf said: 'As healthcare providers, we care about our patients and clients. There was crisis cover across health services on the day of the strike, so it was very similar to cover provided over Christmas. The action did not compromise patient care. Cuts to public services will have a far worse impact on services and patient care, and for more than one day.'

A member of the Leadership and Management Faculty of the Society's Division of Clinical Psychology reported: 'The general feeling was that not that many were striking and certainly some of the more junior (and often younger) were not always union members. Five out of 12 consultant clinical psychologists went on strike. Of the ones who were on strike, a couple said they felt that it was an important principle whether they would be protected from the changes or not.'

Susan van Scoyoc, Acting Chair of the Society's Standing Committee for Psychologists in Health and Social Care, said: 'SCPHSC, along with other parts of the Society, are aware of the changes taking place throughout the NHS and the public sector generally. We have expressed opinions on how these changes are likely to impact upon the users of such services and these can be seen in the Society responses to various government lead consultations (see www.bps.org.uk/consult). Individual members have differing views on how to respond to these changes but it is clear we all share one overriding concern – to provide the best quality of care to our clients now and in the future.'

I For more comment from Dr Rouf, see p.2.

finding to appear credible.

Based on their demonstrations, Simmons and his colleagues call for the authors of psychology papers to conform to a set of new rules, to be policed by reviewers, including:

- Decide the rule for data termination prior to beginning data collection and report this rule in the write-up.
- List all dependent variables.
- If analysis includes a covariate, report the results with and without the covariate.
- Report all experimental conditions, including failed manipulations.

These requirements 'pose minimal costs on authors, readers and reviewers,' Simmons' team conclude. 'These solutions will not rid researchers of publication pressures, but they will limit what authors are able to justify as acceptable to others and to themselves. We should embrace these disclosure requirements as if the credibility of our profession depended on them. Because it does.' CJ

1 IN 12 SELF-HARM

The first population-based study to assess the course of self-harm from adolescence to young adulthood has found that around one in 12 young people self-harm, with the balance skewed towards girls.

Published in *The Lancet* (see tinyurl.com/cfo52y5), the cohort study was conducted between August 1992 and January 2008 in Victoria, Australia, with participants aged 14–15 at the outset. The researchers, led by Paula Moran (Institute of Psychiatry), chose this period from adolescence as one 'characterised by major changes in health and a steep rise in deaths resulting from self-inflicted injuries'. Risks for self-harm increased substantially across puberty, 'a process that seems to be independent of age' according to the authors. Self-harm during adolescence was independently associated with the presence of depression and anxiety, antisocial behaviour, high-risk alcohol use, cannabis use, and cigarette smoking. Injury to the skin through cutting and burning was the commonest method of self-harm during adolescence, although by young adulthood no one form of self-harm predominated.

There is some good news though: 90 per cent of people who self-harm as adolescents will naturally stop in adulthood. 'Our findings suggest that most adolescent self-harming behaviour resolves spontaneously,' the authors said. 'However, young people who self-harm often have mental health problems that might not resolve without treatment, as evident in the strong relation detected between adolescent anxiety and depression and an increased risk of self-harm in young adulthood.'

Commenting on the age-related decline in self-harm in *The Lancet* (tinyurl.com/cesa42q), Keith Hawton (University of Oxford) and Rory O'Connor (University of Stirling) considered that as young people move from adolescence to young adulthood, the extent of exposure to peer self-harm might decrease. They also referred to a possibility not addressed by Moran and colleagues: the extent to which clinical interventions might have contributed to the reduction in self-harm. 'The results of Moran and colleagues' study will offer some reassurance to parents of adolescents who self-harm and to health and educational agencies,' Hawton and O'Connor said. 'Clinicians can offer encouragement to both young people who are self-harming and their families.' JS

The mystery of music

The latest of the 'Plug in your brain' public lectures at the University of Westminster came in the form of a delightful neuroscience and music mash-up. Neuropsychologist and life-long musician Dr Catherine Loveday collaborated with husband and guitarist Darren Loveday, pianist Anna Tilbrook and soprano Joanne McGahon. Together they moved and entertained the audience with their live performances, as Dr Loveday attempted to 'unravel the mystery' of music's power.

Music is 'fundamental, universal and ubiquitous', Loveday explained. We learn to appreciate music naturally, she said, and relics of bone flutes and other archaeological evidence show its influence through human history. As Tilbrook soothed sore minds with Chopin's *'Fantastie' Impromptu*, findings on the health benefits of music flowed onscreen, including its ability to: lower blood pressure; reduce pain in palliative care; improve sleep; alleviate allergies; boost immune function; and reduce depression.

It's not just humans that are affected by music. Dogs are calmed by classical pieces, Loveday said, and they bark to rock songs. Unpublished research suggests slow music can boost the milk yield of cows. 'And my favourite,' Loveday said: 'rats subjected to 24-hours of stress-inducing rock music take longer to heal from their wounds.'

But what exactly is music? Essentially, Loveday said, it's our ear-drums vibrating. It's organised sound. Tilbrook played various versions of 'Happy Birthday' to demonstrate the effects of altering pitch, harmony, tempo, timbre, loudness and dissonance. There needs to be a regular rhythm so that we can predict what comes next and then 'Bam!' – it's the meaningful violations to that pattern that can so move us. 'It's those little changes, those little violations of our expectations that make the heart flutter and cause us to respond,' Loveday said.

A 2004 study documented over 100 ways people described the way that music made them feel, from ecstatic to spiritual. Underlying these emotional responses to music are physical changes to the body and brain. Music affects our cortisol levels (a hormone involved in stress), SigA (an antibody), our endogenous opiates, dopamine (a neurotransmitter implicated in the anticipation of reward) and oxytocin (nicknamed the 'cuddle hormone' because of its role in attachment and bonding). Music can also trigger a chill response; sometimes known as a frisson. 'The chill response is something that I reckon every single person in this room has had,' Loveday said. 'It's that shiver down the spine that you get when you listen to a particular moment in music, so you're listening to it and it just moves you.'

The chill response has been studied extensively, not least because it's easy to measure and observe. It's associated with changes in skin conductance (because of sweat), heart rate, temperature, breathing and most people can describe and identify

Educational psychology training

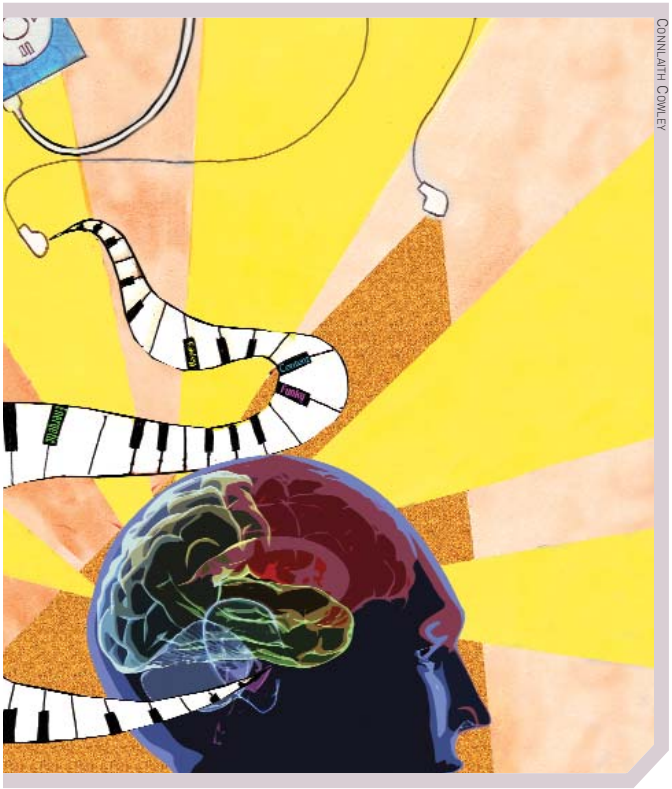
The future of educational psychology training in England has been secured, at least for the short term. After months of uncertainty, the Department for Education has earmarked £16 million for the duration of the current Spending Review, which runs until 2014/15. These funds will cover trainees' first-year tuition fees and a bursary towards living expenses. Local authorities and other employers will be expected to fund bursaries and other costs for years two and three of the educational psychology doctorate.

The announcement came as the government published its review into the training of educational psychology in England. It discusses alternative training models for educational psychology, including the idea of a 'Family psychologist', which combines elements of educational and clinical psychology training, and the 'Fast-track model', which would reduce training to two years. However, the preferred option is for the existing three-year doctorate model to continue.

The most significant development is the review's call for the creation of a new national steering group to manage the relationship between training and placement providers. This will include overseeing an accreditation process for placement providers, which it's hoped will provide quality and consistency for trainees. The steering group would comprise: 'local authority employers, the profession, training providers, placement providers, the Association of Educational Psychologists, the National Association of Principal Educational Psychologists, the Health Professions Council, the British Psychological Society and the Association of Child Psychologists in Private Practice'. In turn, the management of this steering group will be overseen first by the Children's Workforce Development Council (CWDC) and then from April 2012 by the Teaching Agency.

The new proposals follow a period of grave uncertainty for educational psychology, which sees about 120 students enter training each year at an annual cost of about £10,000 each. The recent model has been for local authorities to make voluntary contributions towards the costs of the 12 educational psychology training providers. However, the recession and other factors has led these contributions to all but dry up. The government has agreed to meet the shortfall for 2012/13, prior to funding all year one costs for the 2013 trainee cohort.

Another issue raised by the review is the fact that there's been no systematic evaluation since 1978 of the educational psychology workforce and the demands placed on it. 'We believe there is a strong argument for


CONNLAITH COWLEY

when it's happened. The chill response has even been observed in chicks and Loveday took her place at the piano to play the piece that was found to ruffle their features: Pink Floyd's 'Post War Dream'.

What happens in the brain when we're listening to music? Virtually every part of the brain is affected from the cerebellum, involved in movement and rhythm, to the amygdala, associated with emotional learning. Musical enjoyment is correlated with activity in the caudate in the limbic system, which tracks musical anticipation. And peak musical pleasure is associated with nucleus accumbens activity. The fact that music and sex trigger activity in similar parts of the brain shows once again, Loveday said, that music is a 'fundamental human activity'.

Loveday next discussed why music has these effects on us. Some of if it is no doubt learned by association, she said. As Tilbrook demonstrated at the piano, the iconic two-note repeat from the movie *Jaws* still has the power to unnerve people. There's also an element of mood contagion, including responding to the performer's own emotion. Some of it is the cognitive effects of expectancy violation, discussed earlier. And finally, some of it is primal and innate. This was demonstrated with great power as Joanne McGahon took to the stage to sing 'Vissi d'arte' from Puccini's *Tosca*, her surging, soaring voice seared with grief. The entranced audience were moved despite not being able to understand a word of the Italian.

'Laughter, screaming and crying… it's all basically a form of music and we're innately primed by it,' Loveday said. 'So we've got these primal, direct effects, but then as we learn the language of music more, our appreciation deepens, we are able to use sounds in more complex ways and the more complex our emotional response becomes.' CJ

undertaking a robust workforce modelling exercise,' the review says. To this end it recommends that the CWDC and then the Teaching Agency undertake regular surveys of the educational psychology workforce and the demands placed on it.

The Children's Minister Sarah Teather said that educational psychologists fulfil a valuable role in their work with children and families in schools, and as part of early intervention projects. 'We want the most vulnerable children, and those who would benefit from extra support, to be able to access the expertise and support of educational psychologists,' she said. '[The £16 million earmarked by the Department of Education] helps to secure the future training of educational psychologists and is part of the work we are doing on the SEN green paper.'

Dr Jane Leadbetter, Chair of the Society's Division of Educational and Child Psychology, told us that she welcomed the findings of the review, 'which confirmed that the current three-year training model, at doctoral level, is a success and is fit for purpose.' She added: 'It is reassuring that funds are being provided to sustain training over the next few years and that a seamless process whereby university time and time spent in educational psychology services will be set up and properly managed. Of concern is the ongoing cuts to local authority services around the country which is having a direct impact upon EP posts and the work that can be undertaken at preventative and systemic levels.' CJ

I The review *Developing Sustainable Arrangements for the Initial Training of Educational Psychologists* is at tinyurl.com/bpceg6c

A journey in the fast and slow lanes

Anyone with an interest in the foibles of human reasoning has been spoilt over the last decade. A succession of popular books from David Myers' *Intuition: Its Powers and Perils* (2002) to Jonah Lehrer's *The Decisive Moment* (2009) have documented the biases and heuristics that shape our attitudes and decisions. Every single one of these books cites the influential work of two psychologists – Daniel Kahneman and Amos Tversky – for which Kahneman was awarded the Nobel Prize for Economics in 2002 (Tverksy died in 1996 and was therefore ineligible for the prize).

Now we get to hear from the pioneer himself: Professor Kahneman of Princeton University has finally published his own popular account of his field: *Thinking, Fast and Slow* (Allen Lane), described by the *New York Times* as 'a lucid and profound vision of flawed human reason in a book full of intellectual surprises and self-help value'.

In November, Kahneman promoted his book at the LSE, 'in conversation' with Professor Lord Richard Layard, the architect of the government's Improving Access to Psychological Therapies programme. Layard began by asking what is meant by 'thinking fast and thinking slow'. This is a reference to the idea that we have two forms of mental process, Kahneman said: System 1 and System 2 (these are metaphors, he further explained, rather than literal brain systems).

System 1 operates all the time, and more often than not we're guided by it – such as when we're walking or driving and we don't have to think consciously about what we're doing. System 2 monitors and interprets System 1 and it comes into play when we think effortfully and consciously about a problem. Asked to solve '2 + 2', System 1 would deal with it, producing the answer automatically and without effort. Challenged with '22 x 17' and an answer probably won't come to mind immediately – you have to reflect effortfully on how to solve the problem. 'My standard example,' Kahneman said, 'is that if you have to stop doing [a mental task] when you make a left-turn into traffic, then it's effortful.'

Kahneman said there's much psychological insight to be gained by investigating what System 1 can and can't do. 'It can do wonderful things,' he said, 'but it has strange limitations.' As an example of a useful System 1 skill, he said he was able to determine his wife's mood from the first word she utters on the phone. On the other hand, System 1 produces mistakes when it doesn't have a skilled answer. Here Kahneman gave the example of people's judgements about the likely university grades of a woman who they're told learned to read fluently at age four. An idea will come to their mind instantly (thanks to System 1) based on assumptions about the proportion of people who read at age four and how that correlates with later academic achievement. However, these implicit statistical assumptions are mistaken and neglect many other factors. Consequently, people's predictions about the woman's grades will tend to be far too extreme.

Examples like this show how System 1 treats whatever information it has (the woman's reading precocity in this case) as if that is all the information that matters. Another more striking example: Kahneman cited research from the 1990s that asked some people to say how much they'd be willing to pay for travel insurance against death by any means. Their answers were compared against a second group who were asked how much they'd be willing to pay for insurance specifically against death by terrorism. The terrorism group were willing to pay substantially more money! 'This is absurd,' Kahneman said. 'The way System 1 deals with this question is that there's something you know immediately – how afraid you are. And that's it, you translate your answer from something System 1 produced, an evaluation based on fear and emotion.'

These insights beg the question, Layard said: should the government take our flawed thinking into account in the way that it formulates policy? Kahneman argued that indeed, the outdated economic idea that humans are perfectly rational has had some pernicious consequences for government policy, most of all the idea that people don't need to be protected against their own mistakes. 'People do need protection against their own mistakes,' Kahneman said, 'because they make highly

KAHNEMAN IN THE HOT-SEAT

After his conversation with Lord Layard, Professor Kahneman took questions from the audience. Here's a précis.

Q: *You're pessimistic about the benefit of training against biases. Does CBT offer any hope?*
DK: Clearly System 1 can be modified – it updates its models. But you can't stop System 1 constructing stories based on the limited information and skills at its disposal.
Q: *Are some people better decision makers than others? Can we identify them?*
DK: There are different domains of decision making, so you can be good at one but not the other. There isn't a general decision-making trait. Having high IQ, having access to your own emotions are part of good decision making. It's easier to identify bad decisions and bad decision makers than good decisions and decision makers.
Q: *Why the pessimism about the policy effects on well-being?*
DK: Well, a world without commuting would certainly be better. More time with family and loved ones makes people happier. So yes, government policy that helped with these things would improve the world in these fairly basic ways and I'd be supportive of that. But there will be trade-offs and I don't know how they will pan out.
Q: *Where should the government intervene to protect us?*
DK: There must be limits to coercion – I don't think we should ban eating French fries, for example. Anticipated regret is a possible criterion – preventing people from making the kinds of decisions that they're likely to regret later on. There are issues about what kind of society you want to live in. Singapore is an interesting example. It interferes with people's lives a lot, but there are costs. They're not the champions of well-being.
Q: *Can you explain the reasoning behind the financial crisis? What about the minds of the decision makers in Europe right now?*
DK: This question is too hard for me. The contribution of psychology is limited. People who took out mortgages they couldn't pay made a mistake. The sellers of those mortgages took advantage and this should have been prevented by regulation. As for the bankers – they were being rewarded for taking very large risks (and still are) and that situation is going to lead to risk taking. That's not irrational, we should expect that.

Professor Lord Richard Layard (left) and Professor Daniel Kahneman in conversation at the London School of Economics

predictable mistakes – including in savings and insurance. Furthermore, they need protection against predators because they will disclose all the relevant information only in small print. Rational agents might read the small print, but people don't.'

What about implications for education, Layard asked. Can people be taught to counteract the flaws in human reasoning? Kahneman confessed that he is a pessimist in this regard, whereas he realises that Layard is an optimist. 'I don't think reading this book will help you,' Kahneman admitted. 'Writing it certainly hasn't helped me!'

So, is there any hope? Kahneman said there was a benefit to be had in introducing a more sophisticated language of gossip. We're all far more conscious of other people's mistakes than our own, he explained, and by providing a more informed terminology for talking about people's errors, our judgements and understanding will improve. 'So there's some hope,' he said, 'but not much.' He added that institutions could improve themselves by avoiding known biases. Layard stepped in to give the example of interviews, which research shows are a highly ineffective selection tool, thanks in large part to the misleading power of first impressions and other prejudices. He said the LSE had done away with student interviews, but that an amazing amount of time continued to be wasted on interviews at universities like Oxford and Cambridge.

Layard moved the discussion onto well-being – a topic that Kahneman has focused on in recent years. In particular his research has shown how a distinction needs to be made between people's overall satisfaction with life, and their (hedonic) moment-by-moment experience of happiness and misery. The two are not the same and don't always correlate. Kahneman said that unlike Layard he was more concerned with reducing misery than promoting happiness (Layard demurred, saying this was his priority too) and he described the UK's plans to measure citizens' well-being as an 'ambitious effort'. But he fears the levers of government policy probably won't make much difference.

'We're at the beginning of our understanding of well-being,' Kahneman said. 'There are so many empirical questions that we don't know.' For example, there are no doubt medical consequences of well-being, he said, yet we don't currently know whether life satisfaction or hedonic experience is the more important. 'Having answers to these kinds of questions will help philosophers, policy makers… assign relevant weights to the different dimensions, but we're really at the beginning of that journey.' CJ

Listen to the audio at tinyurl.com/cy5k4nf

FUNDING NEWS

The British Educational Research Association invites applications for its **Meeting of Minds Fellowships**. The Fellowships support **educational researchers** who are establishing themselves in their research career but who have yet to become Principal Investigators. Funding provides support for mentoring with a more experienced colleague, usually from outside the applicant's home institutions. Funding of between £300 and £600 is available for travel and subsistence. Closing date – 16 January.
www.bera.ac.uk/awards

The British Academy has launched the first round of its **International Partnership and Mobility awards**. The awards support the development of partnerships between the UK and others areas of the world. This round is focusing on supporting three-year and one-year partnerships between UK scholars and scholars in Africa, Latin America, the Caribbean, Middle East, South Asia and East Asia. One-year grants are suited to the initiation of new collaborative partnerships and three-year awards to supporting more extensive programmes of collaboration and exchange. Applicants must be of **postdoctoral or equivalent status**. Closing date for applications is 8 February 2012.
tinyurl.com/c2bl7ha

The Baily Thomas Charitable Fund is inviting applications for its research grants. The Fund supports **research into severe learning disability**, including autism. Funding is directed to the initiation of research to the point at which there is sufficient data to support an application to a major funding body. Grants are made to voluntary organisations that are registered charities or are associated with a registered charity, rather than to individuals. The next closing date for applications is 1 March 2012.
tinyurl.com/7c5k8m6

The University of Ghent offers **Visiting Postdoctoral Fellowships** for foreign researchers to be junior and senior postdoctoral fellows for between three and 12 months. Applications must be made via Scientific Research Networks at the University of Ghent and not directly. UGent has a Faculty of Psychology and Educational Sciences.
tinyurl.com/c8dvmvb

info

For more, see **www.bps.org.uk/funds**
Funding bodies should e-mail news to Elizabeth Beech on **elibeec@bps.org.uk** for possible inclusion

For students, North and South

We hear from the Society's Psychology4Students days in Preston (reported by **Catherine Loveday**, University of Westminster) and Watford (reported by **Jon Sutton**, Editor)

The University of Central Lancashire was this year's enthusiastic host to the Society's 'Psychology4Students' North lectures. With 350 students attending, the event was once again a sell-out and there was a palpable buzz of excitement in the hall as Society President Carole Allan introduced Mark Wetherell (Northumbria University) to open with his talk on stress and how it affects us.

'I want you to think about a time when you've experienced an acutely stressful event,' said Wetherell. 'How do you feel?' A steady flow of responses came flooding back, illustrating the brain's fast adrenalin-mediated stress mechanism. A similar question about longer-term periods of stress enabled Wetherell to explain the slower, cortisol-activated stress response, which switches off the long-term processes so that resources can be directed to deal with immediate threat. However, if those stresses don't go away, he explained, the long-term processes remain switched off, leading to a whole host of negative consequences including ill-health, insomnia and fertility problems.

Wetherell went on to give a very clear explanation of the dynamics of cortisol and showed data from a range of his experiments, including some work with Ecstasy users that showed how regular chronic use of the drug causes major disruption to cortisol regulation and stress responses. The ecstasy studies certainly intrigued the students but, judging by the reaction of the crowd, Wetherell's trump card was showing photos of his young son on each of the first six days of his life, alongside graphs of Wetherell's own cortisol profiles. 'What a geek!' he said of himself, 'but what a perfect illustration that having a baby messes with male hormones too!'

Next up was Charlie Frowd (University of Central Lancashire) to talk about his award-winning work with the police force, developing a new system for constructing the face of a criminal. He asked the crowd to try and guess the identity of a range of well-known faces, constructed using old photo-fits and the more modern E-FIT system. Frowd's experiments show that recognition of faces from these constructed images is shockingly poor though, under 20 per cent.

In an attempt to improve on these approaches, Frowd and his colleagues have developed a new system, based on the principle that face recognition is far better than recall. His new 'Evo-FIT' system provides an array of faces from which the witness selects the face most like the one they remember seeing. This selection is used to produce a new array and through an iterative process a best likeness is produced. Frowd concluded with impressive statistics that the new system has so far had an arrest rate around 40 per cent and helped to catch some very notorious local criminals.

The morning session was brought to an end by my own lecture, 'Lost in Music' (see p.12), stepping in as a last-minute replacement.

The afternoon started with Deborah Riby (Newcastle University) providing insight into the way in which children with autistic spectrum disorder (ASD) and Williams syndrome (WS) look at and process faces. Children with ASD are known to have significant difficulties with social communication, Riby explained, whereas children with WS are known to be very socially driven and highly empathic.

Riby and her colleagues have been able to show that these two groups of children process faces very differently. Those with ASD have a greatly reduced face gaze compared to typical children, whereas children with WS spend far longer fixated on the face, in particular the eyes, and fail to look at other non-facial clues or to look away when thinking, as typical children do. This may be why WS children, despite being very sociable, still have significant problems with peer relations. This research, explained Riby, provides huge insight into the exciting and growing field of social neuroscience.

The day ended with another much appreciated replacement, Dave Shaw from Lancaster University, reprising last year's talk (see February 2011) on the importance of psychology in sport.

Opening the 'Psychology4Students' South event in Watford was Paul Gardner (University of St Andrews), with a rousing rendition of Lonestar's 'Amazed'. Quoting the author Tom Sharpe – 'mother nature has the propensity to make men

Peter Lovatt presented research on how dance affects our thinking, health and hormones

temporarily insane simply in order to propagate the species' – Gardner pondered whether love is just a physiological state that leads us to pass on our genes.

Citing evidence from Israeli kibbutzim and Chinese *sim pua* marriage in support of Westermarck's hypothesis of incest avoidance, along with the classic Dutton and Aron 'wobbly bridge' study of arousal and attraction, Gardner made a convincing case that imprinted rules and biology are what passes as 'love'. We 'read' immunocompetence from hormone-dependent features such as strong cheekbones (testosterone) and full lips (oestrogen). Using computer software to 'masculinise' a face enhances attractiveness, but only when women are ovulating: at other times, such faces are rated as colder, less cooperative and worse parents. Such visual and even olfactory cues are all subconsciously driving us towards a devoted spouse and quality children.

Gardner, a former coal-miner who left school at 16, did admit that biology might not have all the answers to the 'problem of qualia' – why do people sacrifice themselves for their loved one, or marry an infertile person? But he ended with some biologically based advice on getting a girl for the assembled students – take her skydiving, don't wash, and practice looking symmetrical.

Next up Alison Lee (Bath Spa University) repeated her talk from last year's Nottingham lectures (see January 2011) on the value of a case study approach. Lee works with people who are experiencing problems with vision as an effect of Parkinson's disease, including a 72-year-old man sent to her with an unconscious 14° lean to the right, which nearly had him toppling over! Lee's work on visuospatial neglect and (in particular) left-side onset Parkinson's helped to get him walking upright again, and the insights are being used in physiotherapy to help such patients stop falling.

Illustrating another major strand in psychology, the comparative approach, Katie Slocombe (University of York) made chimpanzee communication thoroughly entertaining with an impressive repertoire of 'pant hoots' and 'rough grunts'. Humans are the only ones with full-blown language, but what about the various elements you need to make up language? How far up the evolutionary tree do they go? Describing her research in Edinburgh Zoo and the Budongo forest of Uganda (see tinyurl.com/cl5djcu), Slocombe demonstrated the first evidence of referential communication in great ape species, suggesting it evolved a long time ago. Her new study aims to tease out the intention behind chimp communication by using a fake snake with chimps either alone, at the front or at the back of a group. If a 'snake!' call is an emotional outcry, it should occur in all three situations; if it's to recruit assistance, they should call when at the back or front of a group; if they're doing it to inform and warn others, they should call only when in front.

The afternoon saw a change of tack with business psychologist Rob Yeung addressing what makes some individuals soar while others struggle? Yeung recounted how a major breakthrough came at around the time of the Second World War, when psychologist John Flanagan started to ask people to describe a time they were successful, rather than asking them why they think they are successful. Using this 'critical incident technique', Yeung has been interviewing business people and entrepreneurs to try to understand what helps some people to become wealthy in business. He talked about two 'capabilities' – 'Awe' and 'Cherishing' – that seem to be important. Presenting evidence that people who had lived and worked abroad for six months are more successful and creative, he advised the audience that 'creativity comes from a sense of awe about the world'.

Ending on an almost indescribable high was Peter Lovatt from the University of Hertfordshire. 'Dr Dance' said he didn't learn to read until he was 22, and discovered dancing as another form of language. Aspects of dancing helped unblock his thought processes and overcome literacy, and after a spell of professional dancing he ended up studying the psychology of the performing arts. Lovatt presented research on how dance affects our thinking, health and hormones. Did you know, for example, that structured dancing leads to improved convergent problem solving (where there's a single answer, such as 5 x 13), and improvised dancing is better for divergent thinking? Or that women in their fertile stage isolate their hips more when they dance? Interesting stuff, but it was the mass dance-along that Lovatt – and the day – will be remembered for. 'Any questions?', Lovatt asked the exhausted audience at the end. 'Can we do it again?' asked one, leading hundreds of students to invade the stage and tweet rapturous appreciation. 'Best day ever!' said one.

CHRISTMAS LECTURES

The Royal Institution Christmas Lectures return to BBC Four once again this Christmas with experimental psychologist Professor Bruce Hood delivering a demonstration packed three-part series called *Meet Your Brain*. Writing on Twitter, @profbrucehood commented: 'The Ri Christmas Lectures this year will be really ambitious if only coz human volunteers are not as predictable as materials.'

The series will be broadcast on BBC Four at 8pm on 27, 28 and 29 December.

For a 'One on one' with Professor Hood, see p.92.

HELP INSPIRE YOUNG PEOPLE

A volunteering service Inspiring the Future has opened for registrations from employers and employees in all sectors and professions. It is a free matching service for volunteers willing to do short informal 'career insight' talks to help young people understand the world of work and about training routes, job and careers options.

Employees (from CEOs to apprentices) visit a local school or college for half an hour simply to talk about the job they do and the route they took. No CRB check is needed as teachers will always be present.

Inspiring the Future is run by the independent charity Education and Employers Taskforce. The government and education and employer representative bodies are supporting the initiative; and the civil service has registered to enable its staff around England to volunteer in schools. **PDH**

For more information or to register to take part, go to www.inspiringthefuture.org

STUDENT WRITING

UK final-year undergraduates studying any subject have until midnight on 12 January 2012 to write 800 words on 'Does the future of Britain lie with the right-hand side of the brain?' for the inaugural London Library Student Prize.

The author of the winning entry will enjoy a prize of £5000, a year's membership of the London Library, a year's subscription to *The Times*, see their work published in *The Times* and *The London Library Magazine*, and experience a mini-internship with Times journalists. Three runners-up will also win £1000 each and the membership and subscription prizes.

The prize shortlist will be announced in April 2012 and the winner in June. **CJ**

See www.londonlibrarystudentprize.com for more information

How walking through a doorway increases forgetting

Like information in a book, unfolding events are stored in human memory in successive chapters or episodes. One consequence is that information in the current episode is easier to recall than information in a previous episode. An obvious question then is how the mind divides experience up into these discrete episodes? A new study led by Gabriel Radvansky shows that the simple act of walking through a doorway creates a new memory episode, thereby making it more difficult to recall information pertaining to an experience in the room that's just been left behind.

Dozens of participants used computer keys to navigate through a virtual-reality environment presented on a TV screen. The virtual world contained 55 rooms, some large, some small. Small rooms contained one table; large rooms contained two at each end. When participants first encountered a table, there was an object on it that they picked up (once carried, objects could no longer be seen). At the next table, they deposited the object they were carrying at one end and picked up a new object at the other. And on the participants went. Frequent tests of memory came either on entering a new room through an open doorway, or after crossing halfway through a large room. An object was named onscreen and the participants had to recall whether it was either the object they were currently carrying or the one they'd just set down.

The key finding is that memory performance was poorer after travelling through an open doorway, compared with covering the same distance within the same room. 'Walking through doorways serves as an event boundary, thereby initiating the updating of one's event model [i.e. the creation of a new episode in memory],' the researchers said.

But what if this result was only found because of the simplistic virtual-reality environment? In a second study, Radvansky and his collaborators created a real-life network of rooms with tables and objects. Participants passed through this real environment picking up and depositing objects as they went, and again their memory was tested occasionally for what they were carrying (hidden from view in a box) or had most recently deposited. The effect of doorways was replicated. Participants were more likely to make memory errors after they'd passed through a doorway than after they'd travelled the same distance in a single room.

In the *Quarterly Journal of Experimental Psychology*

Another interpretation of the findings is that they have nothing to do with the boundary effect of a doorway, but more to do with the memory enhancing effect of context (the basic idea being that we find it easier to recall memories in the context that we first stored them). By this account, memory is superior when participants remain in the same room because that room is the same place that their memory for the objects was first encoded.

Radvansky and his team tested this possibility with a virtual reality study in which memory was probed after passing through a doorway into a second room, passing through two doorways into a third unfamiliar room, or through two doorways back to the original room – the one where they'd first encountered the relevant objects. Performance was no better when back in the original room compared with being tested in the second room, thus undermining the idea that this is all about context effects on memory. Performance was worst of all when in the third, unfamiliar room, supporting the account based on new memory episodes being created on entering each new area.

These findings show how a physical feature of the environment can trigger a new memory episode. They concur with a study published earlier this year which focused on episode markers in memories for stories. Presented with a passage of narrative text, participants later found it more difficult to remember which sentence followed a target sentence, if the two were separated by an implied temporal boundary, such as 'a while later...'. It's as if information within a temporal episode was somehow bound together, whereas a memory divide was placed between information spanning two episodes.

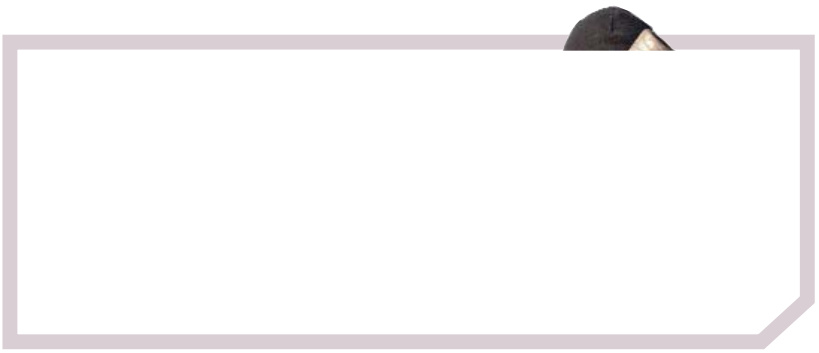
'Most people with a mental dis

In the *Journal of Positive Psychology*

It's easy for us to slip into all-or-nothing mindsets. An example would be: a person has some psychological problems so their life must be miserable. But that's a mistaken assumption.

So argue a team of Dutch positive psychologists, who've studied more than 7000 people over a three-year period. Yes, those participants with a psychological disorder were less happy than those without, but the majority (68.4 per cent) of the mentally troubled said they 'often felt happy' during the preceding four weeks (this compares with 89.1 per cent of those without a psychological problem). 'The possibility of coexisting happiness and mental disorders is of clinical relevance,' write Ad Bergsma and his team, based at Erasmus University and the Netherlands Institute of Mental Health and Addiction. 'A narrow focus on what goes wrong in the lives of the client and forgetting what goes well, may limit therapeutic results.'

The researchers recruited their sample, representative of the general population, from across the country. Trained interviewers questioned volunteers in person or over the telephone to establish signs of psychological disorder in the past month, with 16.5 per cent of the sample being judged to have a disorder based on psychiatric diagnostic criteria. Happiness was measured with a single question about frequency of happy moods over the preceding four weeks, on a scale from 'never' to 'always'.



order are happy'

Children's moral judgments about environmental harm

In the December issue of the *Journal of Environmental Psychology*

Relying on people's reports of their own happiness, using this one question, is an obvious weakness of the study.

Not surprisingly, among those with a psychological problem, happiness was lowest in those with anxiety and depression (although still a significant minority of these people reported frequent happy moods). By contrast, happiness was highest in those with an alcohol abuse disorder, being nearly as frequent as in the healthy participants. There weren't enough cases of eating disorders and psychosis to examine these conditions separately.

By following up their sample over time, the researchers established that more happiness at the study start was associated with better outcomes later on, in terms of recovery from mental disorder. Further analysis suggested this was because higher happiness was a proxy for having fewer mental disorders, being younger, and having better 'emotional role functioning' (as indicated by managing to spend time on work and other activities). The fact that happiness was associated with later outcomes provides some support for the validity of the way that happiness was measured.

'Our knowledge of mental disorders is incomplete if we only look at the negative side of the spectrum,' the researchers said. 'This study aims to broaden the view on positive functioning and human strengths in the context of mental disorders.'

Young children in northeastern USA see harms against the environment as morally worse than bad manners. And asked to explain this judgement, many of them referred to the moral standing of nature itself – displaying so-called 'biocentric' reasoning. This precocity marks a change from similar research conducted in the 1990s, leading the authors of the new study, Karen Hussar and Jared Horvath, to speculate about 'the possible effects of the increased focus on environmental initiatives during the last decade … Although typically thought to emerge in later adolescence, a willingness to grant nature respect based on its own unique right-to-existence was present in our young participants.'

Hussar and Horvath presented 61 children (aged 6 to 10 years) with 12 story cards: three portrayed a moral transgression against another person (e.g. stealing money from a classmate); three portrayed bad manners (e.g. eating salad with one's fingers); three portrayed a mundane personal choice (e.g. colouring a drawing with purple crayon); and three portrayed an environmentally harmful action (e.g. failing to recycle; damaging a tree). For each card, the children were asked to say if the act was OK, a little bad or very bad, and to explain their reasoning.

The children rated moral transgressions against other people as the worst of all, followed by harms against the environment, and then bad manners. Mundane personal choices were judged largely as 'OK'. There were no differences with age.

Asked to justify their judgements about environmental harm, 74 per cent of the explanations given referred to 'biocentric' reasons (e.g. 'A tree is a living thing and, it's like, breaking off your arm – someone else's arm or something'); 26 per cent invoked anthropocentric reasons (e.g. 'Because without trees we wouldn't have oxygen'). The ratio of these categories of explanation didn't vary by age, but did vary by gender, with girls more likely to offer biocentric reasons. This fits with a wider, but still inconclusive, literature suggesting that women tend to base their moral judgements on issues of care, whereas men tend to base their moral judgements on issues of justice.

Hussar and Horvath said it was revealing that environmental harms were placed midway between harms against other people and bad manners. 'This environmental domain [of moral harm] implies a sophisticated comprehension by young children such that consideration is afforded to environmental life over social order, but, at the same time, consideration is afforded to human life over environmental life.'

In contrast with the present findings, research conducted in the 90s found that young children tended to offer anthropocentric reasons for the immorality of environmental harm, only invoking biocentric reasons more frequently in late childhood or adolescence.

'The participants in the current study are constructing morally-based views about nature and humans' place within it from a very young age,' the researchers said. 'This moral stance was succinctly articulated by one of our participants: "Even if there's no rules you should respect…(and) be good to the environment."'

The material in this section is taken from the Society's **Research Digest** blog at **www.researchdigest.org.uk/blog**, and is written by its editor **Dr Christian Jarrett**. Visit the blog for full coverage including references and links, additional current reports, an archive, comment and more.

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Settling into gender

Francine Béar and **Jennifer Wild** on *My Transsexual Summer*

For most of us, waking up in the morning is linked to thoughts about what to eat for breakfast or how to postpone getting up. Few of us open our eyes then question how to dramatically change our body so it more closely reflects our sense of gender.

Throughout November, Channel 4 brought us a fascinating five-part documentary series about transgender identity: that sense of being more similar than different to the opposite sex. The documentary features seven people whose gender identity is a mismatch to their biological sex. Every few weeks, they spend a weekend together to share their experiences of living life as their preferred gender.

My Transsexual Summer gives an in-depth and excellent perspective on the difficulties and rewards that arise when people who struggle with their biological gender transform it through surgery, hormones, clothing style or a combination of all three. But questions still remain. Whilst the viewer learns about the psychological struggles transgender people face, the programme presents only medical procedures as a means of intervention. We have yet to hear about the psychological support that's available and how it may work to help people accept their biological gender or their decision to change it.

Gender – spanning a continuum rather than a dichotomy

Thousands of people in the UK experience transgenderism, and Charing Cross Hospital performs four gender reassignment surgeries per week. But is surgery the solution for people who struggle with their gender identity?

Donna and Drew, two male-to-female transsexuals featured in the programme, are content with looking and dressing like women, taking hormones to support their looks, but wish to keep the parts of their bodies that make them male. Donna says about being transgender, 'It's more about a journey to find yourself than it is to find a good surgeon.'

The programme reveals the extent to which our psychological well-being is linked to accepting our gender identity, and how for most people, the match between our biological sex and our psychological gender is a good fit. We accept our gender identity without awareness or question: we take it for granted.

Sarah, one of the male-to-female transsexuals in the documentary, reveals the psychological problems that can occur when psychological gender does not match a person's biological sex. She has recently begun her transition to living as a woman, and talks about her episodes of depression and how she has self-harmed to deal with painful emotions linked to rejection. We learn of the terror all seven individuals felt when they disclosed true identity to family and friends and how rejection, isolation, and depression are common consequences.

The programme gives space for the featured individuals to express their thoughts about gender identity, and in so doing, gives space for the viewer to challenge convention that it's about being biologically male or female. We learn that gender identity, like many psychological constructs, exists on a continuum. Male and female sit at either end with variations of the two existing in-between.

By getting up close and personal, the programme encourages us to let go of our attachment to separating gender into two constructs and to consider transgender as an identity that sits on the gender identity continuum. Perhaps psychological support could start with helping individuals to accept where they are on the continuum and supporting any choice for surgery.

In terms of surgery, the series does an excellent job of covering what's involved and its controversial components. Gender reassignment surgery costs the NHS approximately £40,000. With cutbacks to health care, even more people are criticising the decision to fund these so-called 'cosmetic' procedures out of a grant that must also pay for other life-saving procedures. But the surgeon interviewed in the documentary makes it clear: not only are there significant improvements to psychological well-being after reassignment surgery, but the improvements in quality of life can last for 40 years or more, much longer than what we would see following surgery for cancer or other illnesses, he says.

Finding foot on the gender identity continuum is certainly a long journey when there's a mismatch between biological and psychological sex. Channel 4 has done an excellent job in revealing the struggles that dominate when there's a poor fit, what's involved medically on the journey to make a better fit, and importantly, the need to see gender as spanning a continuum rather than a dichotomy. Only in seeing this, will we have a chance to transform the stigma, misunderstanding, and mockery that transgender individuals face when they take steps to be who they really are.

MEDIA PRIME CUTS

The nocebo effect: Wellcome Trust science writing prize essay http://t.co/HcKceYKq

Letter from Scott Lilienfeld on the trend for renaming psychology departments as 'Department of Psychological and Brain Sciences' http://t.co/2n0c2AWD

What makes musical memories special? http://t.co/T9RSyZa3

The Science of Sarcasm? Yeah, Right http://t.co/UbGpADOk

Cognitive enhancers, with Barbara Sahakian comment http://t.co/qmHRv8UN

contribute

The Media page is coordinated by the Society's Media and Press Committee, with the aim of promoting and discussing psychology in the media. If you would like to contribute, please contact the 'Media' page coordinating editor, Ceri Parsons (Chair, Media and Press Committee), on **c.parsons@staffs.ac.uk**

Lazy pursuit of the sexy?

Has psychology become 'addicted to surprising, counterintuitive findings that catch the news media's eye'? That's the charge levelled by Eric-Jan Wagenmakers, an associate professor of psychology at the University of Amsterdam, who claims that the trend is warping the field. Wagenmakers was quoted in a piece by Christopher Shea, writing for *The Chronicle of Higher Education* (http://t.co/10CNgTph) on the fraud case surrounding Dutch researcher Diederik A. Stapel.

'The field of social psychology has become very competitive,' Wagenmakers said, 'and high-impact publications are only possible for results that are really surprising. Unfortunately, most surprising hypotheses are wrong.' Shea asks the question, 'Is a desire to get picked up by the Freakonomics blog, or the dozens of similar outlets for funky findings, really driving work in psychology labs?'

Professor Eliot R. Smith

The journal editors Shea spoke to are sceptical. 'Eliot R. Smith, new editor of the *Journal of Personality and Social Psychology*, says the talk about psychologists pursuing "sexy" findings is way overblown. "Go through five issues of mainstream psychological journals," says Mr Smith, a social psychologist at Indiana University at Bloomington. "You'll see maybe five articles out of 50 that are big counterintuitive findings that your grandmother would be interested in."'

Robert V. Kail, editor of *Psychological Science*, told Shea he's never heard of the likelihood of press attention being used as a reason to publish a researcher's work. Rather, he says, he asks his reviewers: 'If you are a psychologist in a specialty area, is this the kind of result that is so stimulating or controversial or thought-provoking that you'd want to run down the hall and tell your colleagues in another subfield, "This is what people in my field are doing, and it's really cool"? 'To me that's not "sexy". It's the most interesting science that we're doing.'

Psychology got a rough time of it elsewhere on the web in November. Leeds-based psychologists Andrew Wilson and Sabrina Golonka, tweeting and blogging as @psychscientists (see http://t.co/iNwVCIk9), argued that 'psychology has gotten lazy; when you can't come up with a simple solution to your complex problem, you suggest a complex solution that fills all those pesky gaps, and never notice the gaps were a bit weird to begin with'. Psychologists' aversion to ruling things out means 'psychology becomes a mere collection of empirical results, with nothing tying them together'. According to Wilson and Golonka, 'This fragmentation means psychology is doing nothing but running in empirical circles: there's nothing resembling progress. All you get are individuals with their own collection of hunches running their own experiments on their own little experimental phenomena. Psychology needs to pick a side, suck it up and get on with some normal science for a change.'

Other media (e.g. *The National Post*: see http://t.co/QsnuMrIi) picked up on an article on 'false positive psychology' in *Psychological Science* by Joseph P. Simmons and colleagues (see p.10), to argue that 'modern academic psychologists have so much flexibility with numbers that they can literally prove anything'. Turning the weapons of statistical analysis against their own side, Simmons' team managed to prove something demonstrably false. 'Our goal as scientists is not to publish as many articles as we can, but to discover and disseminate truth,' they write. 'We should embrace these [proposed rules about disclosing research methods] as if the credibility of our profession depended on them. Because it does.' **JS**

MEDIA CURIOSITY

From the *Sacramento Bee* (http://t.co/dOrnvhGG)

'Sacramento State professor George Parrott walked out of his Psychology 101 lab class Thursday morning because his students didn't bring any snacks... The professor said students are told of the requirement to bring snacks on the first day of class... The handout offers suggestions and pictures of which snacks are preferred.

The professor said the snack obligation is his way of encouraging students to work collectively. Parrott doesn't regret his decision to walk out. "I can understand the immediate frustration," he said. "I'm sympathetic, but I'm absolutely comfortable with the conclusion. The ethos I'm trying to promote is incredibly important. It may not be appreciated, and that's even more unfortunate. It speaks to their lack of understanding of higher education."' For the outcome, see tinyurl.com/cwueeqg **JS**

WORLD'S GREATEST LIVING PSYCHOLOGIST?

Daniel Kahneman's promotion of his new book, *Thinking, Fast and Slow*, led to a rash of effusive coverage in November. It is well worth checking out *The Guardian* interview with him (http://t.co/WRjWqp1t), particularly for his recollection of collaborating with Tversky. 'Psychologists really aim to be scientists, white-coat stuff, with elaborate statistics, running experiments,' Kahneman says. 'The idea that you can ask one question and it makes the point... well, that wasn't how psychology was done at the time.'

The Guardian also hosted a video (http://t.co/NTJM4UEC) and an editorial 'in praise of' Kahneman. 'Appealingly,' the editorial concluded, 'the pair tended to base their exploration of human foibles on their own errors: their faulty memories and dodgy mental shortcuts. Fallibility often begins at home – a lesson more economists might learn.'

There's also a Google talk at http://ow.ly/7I9DL. It was all a bit much for some, with the *Huffington Post* (see http://t.co/qVK6piBj) asking 'Is Daniel Kahneman really the world's greatest living psychologist?' 'No psychologist or neuroscientist alive today would argue that Kahneman's work isn't elegant, fascinating and important,' wrote Margaret Heffernan, 'But the truth is that we have the good fortune to live at a time when many of the giants of psychology (of which Kahneman certainly is one) are alive and productive, doing elegant and thoughtful work with immediate and lasting relevance to how we live our lives. That body of thought goes well beyond marveling at our own stupidity.' **JS**