Fatigue evidence gathers PACE

The PACE study, the largest randomised trial of its kind, has found CBT and graded exercise therapy to be more effective treatments for ME/CFS than the popular pacing approach (*The Lancet*: tinyurl.com/5som2pq).

Professor Peter White at Queen Mary, University of London, and his colleagues recruited 641 patients diagnosed with ME/CFS – a condition characterised by excessive fatigue in the absence of an identifiable organic cause. All received specialist medical care and advice (at least three sessions with a medical expert, and drug prescriptions for symptoms) over the ensuing 12 months. Additionally, over the first 24 weeks, 161 of them also concurrently undertook up to 14 sessions CBT therapy, 160 undertook the same amounts of graded exercise therapy, and 160 undertook equivalent sessions of adaptive pacing therapy.

Briefly, the CBT focused on patients' thoughts and behaviours that could be perpetuating their fatigue, especially their fear of engaging in activity; the graded exercise therapy focused on building up patients' capacity for exertion; whilst the ethos of the pacing was to adapt to chronic fatigue by avoiding over–exertion.

A year after the study start, 30 per cent of CBT patients and 28 per cent of exercise patients had returned to 'normal' function based on their self–report scores on measures of fatigue and physical function. This was a superior outcome, described as 'moderately effective' by the authors, compared with patients who received only specialist medical care, 15 per cent of whom had returned to normal function. In contrast to the CBT and exercise groups, just 16 per cent of patients who undertook pacing therapy plus medical care reached normal function at follow–up, no better than the medical care only group.

The general pattern of results was the same using the Oxford criteria for CFS diagnosis by which all the patients were recruited (chronic fatigue must be the main symptom in the absence of key concomitant psychiatric or other medical conditions, including any depressive or anxiety disorder), and when the analysis was restricted to those patients who met the version 2 London criteria for ME, or the international criteria for chronic fatigue.

The findings of the PACE trial are controversial because CBT and graded

The CBT focused on patients' thoughts and behaviours that could be perpetuating their fatigue

Search dogs – Clever Hans effects?

Search dogs trained to detect drugs and explosives could be susceptible to the 'Clever Hans' effect, a new study suggests. Hans was the German horse whose counting abilities were exposed as being dependent on his detection of cues from his trainer. Now a team led by Lisa Lit at the University of California at Davis has shown that search dogs are especially prone to barking false alerts in locations where their handlers have been tricked into thinking drugs or explosives are located (*Animal Cognition*: tinyurl.com/5ugjpgl). Eighteen handler–dog pairs twice searched four rooms in a church. The handlers were told that each room contained up to three target scents, but this was a lie as no target scents were present. The sight of an experimenter entering the rooms with drugs and explosives heightened the deception.

One of the rooms had red paper markers to indicate the (false) target locations to the handlers; another had decoy sausage scents to trick the dogs; one room had both types of decoy; the final room was decoy free.

Rates of false alarm were high, with 85 per cent of runs leading to one or more false alerts from the dogs. Although the frequency of false alerts didn't vary according to room type, they were more likely to occur where the handlers thought the scents were located, thus indicating the influence of human expectations on the dogs' behaviour.

'[The] findings confirm that handler beliefs affect working dog outcomes, and human indication of scent location affects distribution of alerts more than dog interest in a particular location,' the researchers said. 'These findings emphasise the importance of understanding both human and human–dog social cognitive factors in applied situations.' CJ

exercise therapy are both founded on the idea that chronic fatigue is reversible and can be ameliorated through changes in thoughts and behaviour. Moreover, adaptive pacing is popular with patients and patient advocacy groups. Indeed, patients in the current trial who were allocated to pacing were more confident in their therapy at the outset than were patients in the CBT group.

Another concern among patient groups is that patients undergoing CBT or exercise therapy could be at increased risk of suffering adverse effects – however no evidence was found for this.

Sir Peter Spencer, CEO of Action for ME (an organisation that approved the pacing therapy manuals used in the current trial) told the press he was disappointed by the results. 'The findings of the PACE trial contradict the considerable evidence of our own surveys and those of other patient groups,' he said, pointing to one survey conducted in 2008 of 2763 people with ME, in which 82 per cent said pacing was helpful compared with 50 per cent for CBT and 45 per cent for graded exercise.

Other critics have questioned the diagnostic criteria used and the fact that more severe patients, who were unable to reach the hospital, were excluded. BPS Fellow and co–developer of pacing Dr Ellen Goudsmit told us that the findings of the new trial were difficult to interpret. 'A third of the participants did not meet the current international criteria for CFS, nearly a half had a psychiatric disorder and the researchers did not use actigraphy to check that the aim of graded exercise – i.e. to increase activity – was achieved,' she said. 'Also, the authors did not assess vitamin D levels (a common source of fatigue) or immune status (those with abnormalities respond less well to CBT and graded exercise). Two outcome measures indicated that many were still impaired at 52 weeks, and despite the claims, the trial didn't evaluate the version of pacing recommended by most support groups.'

Goudsmit, a visiting fellow at the University of East London, added: 'Pacing is simple, acceptable, safe and helps to stabilise the illness. It's judged in every audit and survey to be extremely helpful.'

In contrast, another BPS member, Chartered Health Psychologist Dr Peter Spencer at Leeds Trinity University College, welcomed the new findings, which he said reinforced results from his own research in the nineties. 'CBT and graded exercise have been shown to be more effective than any other approach in the management of ME/CFS,' he said. 'However, some people and groups find CBT/graded exercise not suited to them. Given this, perhaps the most important finding is that there is no need for a nihilistic approach to this illness… Many patients, using a range of strategies, have managed their illness and, like me, have made a full recovery.' CJ

BULLYING SEMINAR SERIES

Birkbeck, University of London is facilitating a new ESRC series called 'Vulnerable selves, disciplining others: New approaches to bullying and conflict at work'. Running through 2011–2013, the launch event is being held on 18 May, 6.30pm, at the Clore Management Centre. The event comprises talks and a panel discussion, chaired by Dr Andreas Liefooghe, with guests including Professor Noga Wine, Lacanian psychoanalyst; Professor Howard Schwartz, organizational psychologist; and Naive John, Stuckist artist and painter of 'The Other'. The first seminar is held the following day.

For more details, please see www.bbk.ac.uk/bullying. Events are free, but require reservation – contact t.byne@bbk.ac.uk

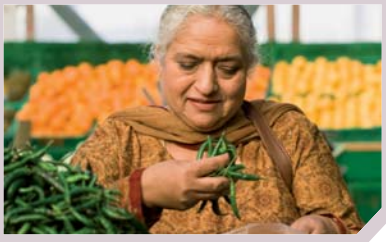
SWEDISH DISTINCTION

UCL psychologist Professor Sarah-Jayne Blakemore has been chosen by the Swedish Neuropsychological Society to be their 2011 Distinguished Lecturer of the year. The honorary role attracts a prize of 30,000 Swedish kronor (approximately £3000) and will involve Professor Blakemore delivering four lectures in Sweden over the coming year. 'It is a great honour to be awarded this wonderful prize, and I look forward to discussing my current research with my Swedish colleagues,' Blakemore said. Past recipients include a BPS Fellow, Professor Uta Frith, also at UCL, and Professor Daniel Schacter at Harvard.

School in driving seat for Rolls prize

The psychology department at Bay House School near Gosport in Hampshire has made it to the finals of the 2011 Rolls-Royce Science Prize competition. They receive a Special Merit Award of £1000 and a further £5000 to implement a project over the course of the year.

The project aims to enhance sixth-form psychology students' learning of psychological research methods. Psychology teacher Nikki Owen told *The Psychologist*: 'With the prize money we have been able to purchase equipment such as GSR meters, blood-pressure monitors, visual distortion goggles, video cameras and a digital data logger. So far we've been able to use these in a variety of experiments, such as measuring physiological responses to chilli-peppers, testing the effects of caffeine on reaction times and investigating competitive behaviour. We also read the article about psychology in Antarctica in the January issue of *The Psychologist*, and I'm now also planning a problem-based learning activity based on some of the issues raised. We're going to set the students a challenge to design a series of selection tests for personnel overwintering in Antarctica.'



Prize has allowed Bay House School to study physiological responses to chilli-peppers

Bay House is competing against eight other schools to win a top prize of £15,000, and must submit a film documentary of its activities for judging in May. 'Having a psychology focus makes our project very different from the ones normally seen in the science prize,' Owen said, 'so it's a very exciting time for us!' JS

Follow the team's progress at http://science.rolls-royce.com/home/index.jsp

IN BRIEF FROM THE AAAS

Christian Jarrett reports from the 177th Annual Meeting of the American Association for the Advancement of Science, Washington

Criminality has its roots in abnormal brain development, according to British psychologist Adrian Raine (University of Pennsylvania). He reported that three–year–old children who demonstrated poor fear conditioning – a marker for amygdala function – were at increased risk of criminal behaviour 20 years later. This tallies with adult research showing that people diagnosed as psychopathic have reduced amygdala volume. 'The seeds of sin are sown quite early in life,' Raine said. 'The time is going to come when we are going to be able to predict reasonably well which individuals at a modest age, say eight to 10 years old, are predicated to become criminal offenders.'

A multidisciplinary seminar explored the causes of stuttering – a timely topic in light of the success of the film *The King's Speech*. Half of all cases have a family history of stammering, and geneticist Dennis Drayna (NIH) highlighted his work showing that stuttering-related genes are involved in cell metabolism. Lu De Nil (University of Toronto) described brain differences in those who stutter, including over-reactivity in neural regions associated with motor control. And Anne Smith at Purdue University has studied four- and five-year-olds who stutter, finding that they sometimes also find it difficult to clap a beat.

The use of virtual reality (VR) to help understand our sense of body ownership has been combined with EEG in one of the first studies of its kind. A team led by Olaf Blanke at the École Polytechnique Fédérale de Lausanne (EPFL) showed previously that it's possible to trick people into feeling ownership of a stationary digital avatar. This is done by touching the person's real body in synchrony with a touch to the avatar, viewed through a VR headset. Blanke's new research provoked a sense of ownership over moving avatars, and EEG revealed a network of brain areas involved, including the temporal parietal cortex, the medial prefrontal cortex and the visual cortex.

A study of hundreds of patients diagnosed with Alzheimer's disease found that those who spoke a second language for most of their lives tended to develop the disease later in life, compared with their monolingual peers. 'We don't believe bilingualism prevents Alzheimer's disease,' psychologist Ellen Bialystok (York University, Canada) told the AAAS Science Update radio show. 'What we're saying is, people who have been bilingual have more reserve, they have more resources to continue functioning at a high level in spite of the disease progressing in their brains.'

Macaque monkeys, which originate from the Old World (Africa, Asia and Europe), have the human–like insight of knowing what they don't know. Professor John David Smith (State University of New York at Buffalo) and Michael Beran (Georgia State University) tasked the monkeys with deciding whether arrays of pixels were dense or sparse. When the choice was too tricky the monkeys took a third option – selecting a question mark – thus skipping to the next question and reducing the time they'd have to wait for another chance to earn a reward. In contrast, New World capuchin monkeys (from central and south America) never used the 'don't know' option. The finding provides clues about the evolution of meta–cognition.

Happy now?

The Office for National Statistics (ONS) announced in February that it is to start measuring the nation's well-being from April this year. Approximately 200,000 people are going to be asked the following questions: Overall, how satisfied are you with your life nowadays? Overall, how happy did you feel yesterday? Overall, how anxious did you feel yesterday? Overall, to what extent do you feel the things you do in your life are worthwhile? The questions will be added to the Integrated Household Survey, which combines answers from a range of ONS surveys. Around 1000 people will complete a further monthly Opinions Survey, which addresses other aspects of well-being including (in past issues) questions about stigma and working conditions.

The ONS is in the middle of a public consultation on how to measure well-being (contribute to the debate at: www.ons.gov.uk/well-being). Professor Peter Kinderman, chair of the Division of Clinical Psychology, and BPS Fellow Felicia Huppert have been appointed to the ONS Technical Advisory Group.

'[The ONS] have a good grasp of the domains that are important to psychological well-being (although "meaning and purpose" and "relationships" could be strengthened)', Kinderman, who's coordinating the BPS response, told us. '…[T]hey understand, I think, the difference between hedonic ("happiness") and eudaimonic (leading a good life) approaches to well-being, the need for both objective and subjective measures, and the contrast between nomothetic and idiographic approaches, and I think their decisions appear well-informed and intelligent.' **CJ**

ALCOHOL GUIDANCE

Over one million people in England are alcohol dependent and yet less than 7 per cent of them are receiving any kind of help. That's according to new guidance issued in February by the National Institute for Health and Clinical Excellence (NICE).

The guidance was prepared by the National Collaborating Centre for Mental Health, of which the BPS is a key partner. The document recommends that people with mild alcohol dependence, or for whom drinking is causing physical or mental problems (so-called 'harmful drinkers'), should be offered psychological interventions such as CBT, behavioural couples therapy or social network and environment-based therapies. Meanwhile, those with moderate to severe dependence should be offered a structured assisted-withdrawal programme, preferably in the community unless that would raise safety concerns.

The new advice also emphasises that alcohol misuse should be treated before other psychological problems, such as anxiety or depression. This is because these comorbid problems may improve once the alcohol misuse is reduced. Also, alcohol misuse will undermine any psychological interventions intended to alleviate anxiety, depression or related conditions.

Professor Colin Drummond of the Institute of Psychiatry,

Neuroscience directions

The Royal Society's Brain Waves project, charged with considering the future implications of neuroscience findings, is now in full swing, with the first two modules published.

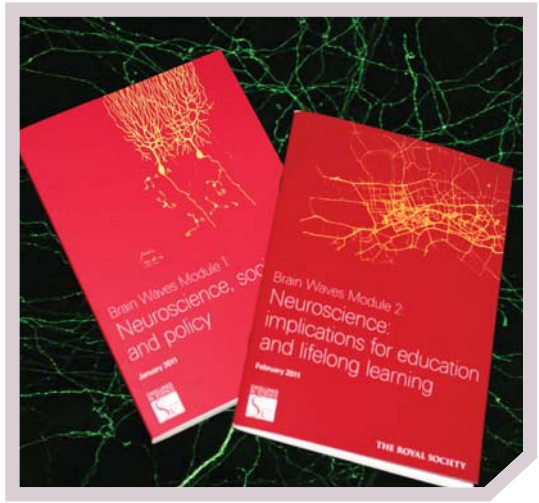
The first, 'Society and Policy', is a collection of essays providing an introduction to current developments and pertinent issues for society and policy. 'It is not intended as an exhaustive review of the science, nor to make specific policy recommendations,' the project chair, Professor Colin Blakemore of Oxford University, says in his introduction, 'rather, it raises key issues and questions, many of which will be explored in more depth in subsequent modules.'

Two of the essays are by psychologists. BPS Fellow Trevor Robbins, professor of cognitive neuroscience at Cambridge University, has written on neuropsychopharmacology, including the latest findings in addiction and cognitive enhancing drugs; and Barbara Sahakian, a professor of clinical neuropsychology also at Cambridge, has written about the potential benefits of new findings across the discipline.

Other contributions to the first module include Geraint Rees on the scope and limits of neuroimaging; Irene Tracey on neural interfaces and brain interference; Wolf Singer on consciousness; Wolfram Schultz on decision making; Steven Rose on the risks of new psychology and neuroscience findings; Sarah Chan and John Harris on neuroethics; and Andy Stirling on the governance of neuroscience.

The second module of the Brain Waves project, chaired by BPS Fellow, Professor Uta Frith of the Institute of Cognitive Neuroscience at UCL, considers the implications of neuroscience and psychology for education, and takes the form of a highly readable overview of findings and recommendations. Feedback via the Royal Society is strongly welcomed.

The working group for the second module was dominated by psychologists, including: Dorothy Bishop at the University of Oxford; Sarah-Jayne Blakemore, Brian Butterworth and Eleanor Maguire at UCL; Paul Howard-Jones at the Institute of Education; and Usha Goswami and Barbara Sahakian at Cambridge University.



Their report highlights many findings in neuroscience and psychology including: the biological basis of learning difficulties; how genetic influences interact with environmental factors to affect learning ability; the capacity of the brain to change and adapt through the lifetime; the role of sensitive periods in learning ability, for example as found with learning second languages; the importance of expectations in the effects of reward, and the implications this has for motivation and learning; the potential for cognitive training programmes to improve self-control; and the concept of cognitive reserve – the way that learning and education can protect the brain from stress, illness and normal ageing.

Another focus is on drugs and technologies that improve mental function. They've generated a lot of interest, but their long-term effects and risks are largely unknown. 'We propose that education is the most powerful and successful enhancer,' Frith and her colleagues write. 'Education provides…access to strategies for abstract thought, such as algebra or logic, which can be applied in solving a vast range of problems and can increase mental flexibility. Literacy and numeracy change the human brain, but also enable human beings to perform feats that would not be possible without these cultural tools, including the achievements of science.'

The report welcomes the support and interest that educational neuroscience currently enjoys, but it cautions that commercial companies are moving quickly to exploit this interest. 'There is already a glut of books, games, training courses, and nutritional supplements, all claiming to improve learning and to be backed by science,' Frith and her colleagues write. 'This is problematic because the sheer volume of information from a range of sources makes it difficult to identify what is independent, accurate and authoritative.'

The module two working group concludes with four key recommendations: for stronger links to be established between neuroscience and the educational system; for neuroscience to be incorporated into teacher training; for neuroscience to inform innovative learning technologies; and for the creation of a 'professionally managed web-based forum…to bring together practitioners and scientists in a continuing dialogue.' CJ

I See http://royalsociety.org/brainwaves for the reports, and for further information visit the website or contact science.policy@royalsociety.org

Chair of the Guideline Development Group, said: 'With problems relating to alcohol consumption increasing steeply in the UK, I hope that this guideline provides a much-needed impetus to making effective treatments more available to those who need them.' CJ

I Access the guidelines at: http://guidance.nice.org.uk/CG115

FUNDING NEWS

The following opportunities are available from the US National Institutes of Health:

The Placebo Effect: Mechanisms and Methodology. Research to elucidate the underlying biological pathways that lead to placebo effects. Letter of intent due date 24 April 2011
http://1.usa.gov/ehduZ3

Family and Interpersonal Relationships in an Aging Context. Relevant research topics include: life course studies; kin availability; siblings; childlessness; the role of the family in health behaviour compliance; family networks and social networks; living arrangements and decision-making and obligations. The will be three standard closing dates each year, 5 June, 5 October and 5 February.
http://1.usa.gov/erhdun

Disclosure of HIV-Status to Children in Low- and Middle-Income Country Settings. Applications are sought to evaluate disclosure intervention on psychological, behavioural and medical outcomes in the child and the family unit, and, where possible, evaluate the comparative effectiveness of two or more interventions. Letter of intent due 29 October 2011.
http://1.usa.gov/dY7vQw

The Chartered Institute of Management Accountants wishes to fund performance management related research. Case study based research proposals should be submitted by 2 May 2011. Funding of between £5000 and £40,000 is available.
www.cimaglobal.com/Thought-leadership/Research-Funding

The European Commission Youth in Action programme has funding available under its Youth Support Systems (Action 4) to support **youth work** and young people's access to information and communication services. Deadlines are 1 June and 1 September.
tinyurl.com/6xg3dcm

The Leverhulme Trust has funding available for Principal Investigators based in the UK to establish a new **international network** to successfully complete a research project. A significant research theme must be identified, along with a rationale for why a network is the most appropriate format for addressing the research theme.
www.leverhulme.ac.uk/funding/IN/IN.cfm

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

The horror in dreams

Jon Sutton reports from an Institute of Psychoanalysis event

As a dad to two young boys, I have grown wearily accustomed to their constant nocturnal visits to the parental bedroom. Yet I had no idea that they are checking that Mum and Dad are still alive, and that we have not taken on monstrous characteristics through sexual intercourse. This and other psychoanalytically driven insight into the horror of dreams were on offer during this fascinating event from the Institute of Psychoanalysis, held at the Science Museum's Dana Centre.

The evening took the form of audience discussion around two film clips, led by psychoanalysts Donald Campbell and Rosine Perelberg. The first showing was from a 1990 magical realism film based on actual dreams of the director, Akira Kurosawa, at various stages of his life. We saw a child's curiosity get the better of him, leading to his mother closing the door to her adult world because 'you went and saw something you shouldn't have': a wedding procession of people wearing fox masks. Transgressing this small rule had a terrible consequence: 'You're supposed to kill yourself', said the boy's mother, handing him a sword. 'Unless they forgive you I can't let you in'.

Perelberg explained the centrality of curiosity in Freud's theories: around the arrival of a new sibling, death, or the relationship between parents. Parents can become monster-like at night, as the child does not understand the nature of their relationship. Freudian primal fantasies (of the primal scene, seduction and castration) were all buried within the film, as 'treasure that an analyst may discover'. Perelberg spoke of the rules that govern dreams: displacement (present here in the movement from house to forest, from parent to foxes), condensation (from animal to human, from the known to the unknown), and conditions of representability (e.g. an important person may appear high up in a tower). When we dream we are doing all this work, and the analyst's job is to trace it back in interpretation.

Taking the reins for the second clip, Campbell suggested that Hollywood is the ultimate dream factory, and that the horror film is the most dreamlike of all genres. From the brain bug of *Starship Troopers* to the oral impregnation of *Alien*, the monster of horror graphically represents the fusion of distinct and contradictory elements. In Campbell's interpretation, the monster is a convenient vehicle for the sublimation of disgust, which would otherwise deny genital pleasure. At puberty, youngsters become interested in bodily secretions: parts of the self that become 'non-self'. Giving vent to the repressed through 'body horror' allows the individual to strengthen identity with the self.

Campbell's pick was the Swedish adolescent-vampire-romance *Let the Right One In*. 12-year-old vampire Ellie's need to block out daylight provided a graphic representation of the nightly dream, or the subconscious. A scene where Ellie's friend Oskar beckons her in without a formal invite, with gory consequences in terms of 'seepage', was perhaps symbolic of menstruation and loss of control. Oskar's anxieties about his murderous feelings towards the school bullies were 'projected' onto Ellie. Sexuality, as Laplanche has noted, was a recurring dream-like theme: Oskar had to literally shut his mother out in order to have a relationship with Ellie.

Now when I saw *Let the Right One In*, I only picked up on a fraction of that subtext. And as Perelberg admitted, 'you have to wonder how conscious some of these themes are on the part of the writers'. 'Is there anything you wouldn't assign meaning to?', asked one brave audience member. 'Oh no,' Perelberg chuckled wryly, 'you'd never catch an analyst saying that.' There's the rub for critics of psychoanalysis, but nobody could deny that it made for an engaging and thought-provoking evening.

For future events, see www.beyondthecouch.org.uk/events