

3D BRAIN MAPPING

Researchers have created a revolutionary high-resolution 3D brain atlas that allows users to zoom in and navigate around the human brain almost at the level of individual cells (*Science*: sciencemag.org/content/340/6139/1472). The BigBrain map was produced by neuroscientists in Canada and Germany based on 7404 slices obtained from the brain of a 65-year-old woman. The work took over 1000 hours to complete and was only possible thanks to advances in computing power.

'To put BigBrain in context,' said co-author Alan Evans at the Montreal Neurological Institute, 'we can consider present day MRIs which have a 3D spatial resolution of 1mm. In comparison, the BigBrain data set is 50 times smaller in each dimension providing unmatched spatial resolution.'

The map is to be made freely available to researchers worldwide (register for access at

<http://bigbrain.cbrain.mcgill.ca>) and could be used by brain scanning psychologists to more precisely localise their findings. Among other applications it could also help ensure more accurate implantation of deep brain stimulation devices.

'With the help of our high-resolution brain model, we can now gain a new understanding of the normal structure of different functional areas of the brain, such as the motor cortex or a region that is important for learning and memory, and we can also measure numerous structural properties,' said lead author Katrin Amunts at the Institute of Neuroscience and Medicine, Research Centre Jülich in Germany.

Ultimately it's hoped the BigBrain map will help with the larger mission of the EU's multi-million Euro Human Brain Project (of which it is part) to construct a working computational model of the entire human brain. **CJ**

Face-down restraint concerns

Among mental health workers who've restrained someone in the previous year, one in ten said they didn't really know what they were doing and four in ten admitted that restraint techniques were sometimes used inappropriately. That's according to a survey of 375 frontline staff conducted by the mental health charity Mind.

A freedom of information request by the charity has exposed the huge variation in restraint practices across England. Of 39,883 restraint incidents reported during 2011 to 2012 (resulting in 949 injuries), over 3300 took place in services run by Tees, Esk and Wear Valleys NHS Foundation Trust, compared with just 38 reported by Surrey and Borders NHS Foundation Trust.

Mind are most worried about dangerous face-down restraint practices, of which there were a reported 3439 cases in 2011 to 2012. Half of all these were reported in just two Trusts: Northumberland, Tyne and Wear NHS Foundation Trust and Southern Health NHS Foundation Trust.

The charity is calling for an end to face-down restraint and national restraint standards across the country. '[H]ealthcare staff do a challenging job and sometimes need to make difficult decisions very quickly,' said Mind Chief Executive Paul Farmer, 'but physical restraint should only be used as the last resort... There is never an excuse for face-down restraint.' **CJ**



Mind Chief Executive Paul Farmer

Automated conversation coach

Researchers at MIT's Affective Computing Group have created a virtual 'conversation coach' that asks questions and provides users with feedback on their facial expressions and speaking style. This includes a video playback of the user as well as data on pauses, smiling and use of filler words like 'basically'.

'People diagnosed with social difficulties have asked for help in terms of improving their social interactions, but they fear social stigma,' says project leader Ehsan Hoque. 'They wondered if we could

give them some kind of technology so that they could practice their interaction in their own environment.'

And so the interactive MACH software ('My Automated Conversation coach') was born. Hoque and his colleagues plan to test the software as an intervention for social phobia and autism, but first they tried it out as a form of interview training for undergraduates.

Ninety students had their interview technique assessed at baseline and then again after interacting with the new

software. Students who used MACH with full feedback showed dramatic improvement whereas the controls did not – that includes those who only saw their performance on video, or others who simply watched interview tuition videos (further analysis showed the superior benefit of MACH was limited to females). The research has been accepted for presentation at the forthcoming International Joint Conference on Pervasive and Ubiquitous Computing (tinyurl.com/le8o7g6). **CJ**

Poor reporting practices in psychological trials

The real-world impact of psychological and social interventions is being squandered by poor practices in the reporting of randomised trials. That's according to a team of researchers at the University of Oxford's Centre for Evidence-Based Intervention and the British Psychological Society's Centre for Outcomes Research and Effectiveness (*PLoS One*: tinyurl.com/qyqll9o). 'This study is the most comprehensive review of reporting guidelines and the reporting quality of social and psychological intervention trials ever conducted,' the researchers said.

Led by Professor of Psycho-Social Interventions Paul Montgomery, the team assessed 239 trials published in 2010 in the 40 highest-impact journals across clinical psychology, criminology, education and social work. The researchers uncovered woeful levels of adherence to reporting standards prescribed by the CONSORT guidelines for medical trials or by lesser-known guidelines developed specifically for social or psychological trials.

For instance, 80 per cent of trials failed to mention randomisation in their title; only 45 per cent mentioned it in their abstract. This makes it likely these trials would be missed by systematic reviews or meta-analyses that gather together evidence for a particular intervention.

Most trials also failed to provide adequate information on aspects of running a trial, such as the process of blinding, allocation to conditions or detail on participants such as their current treatment. Very few papers stated whether the trial had been registered (important for overcoming the file-drawer problem whereby negative results are left

unpublished), and few provided adequate information on the wider service context in which the trial had been administered.

It's likely these slack practices are related to lack of direction from publishers. Montgomery's team found that only 11 of the journals they assessed made reference to official reporting guidelines in their instructions for authors. Two journals provided their own guidance on how to report trials while the remainder provided no specific advice on how trials should be reported.

'There are many excellent experiments that identify ways to improve social and psychological care,' said co-author Evan Mayo-Wilson. 'Too often, these studies cannot be used because published reports are missing critical details. Social and psychological research should help us change people's lives. To do that, the scientific record needs to be both accurate and complete.'

Montgomery, Mayo-Wilson and his colleagues are inviting psychology researchers to participate in producing a new set of international guidelines – an extension of the influential CONSORT guidelines used in medicine – to help improve reporting practices in the field of psychology and social research. It's important that such guidelines are developed with the input of the research community so that a workable consensus can be achieved and you are invited to get involved (see tinyurl.com/3nya7sb). 'We are thrilled that so many researchers and journal editors have joined this project,' said Mayo-Wilson. 'Through collective effort, we hope this problem can be solved in a few years.' CJ

Impact factors problems

Marcus Munafò in the School of Experimental Psychology at the University of Bristol and two colleagues have called for an end to traditional journal publishing in favour of an open, library-based system where the reputation of research is judged on a per-article basis (*Frontiers in Neuroscience*: tinyurl.com/ogfj42w).

According to the authors, the current hierarchical system of ordering journals in terms of

their impact factor is harming science.

Munafò and his colleagues cite evidence that articles in high-impact journals are: more prone to the decline effect (whereby the size of the effect appears to diminish or disappear in subsequent replications); more likely to feature research that is later retracted for reasons of fraud; and a poor indicator of methodological soundness. They also claim that the

system of high-impact journals incurs huge cost and waste as a cascade of resubmissions are made to journals of progressively lower prestige.

They question too the reliability of journal ranks, with many journals allegedly gaming the impact factor scoring system by reducing the articles they submit to the ranking process. '[U]sing journal rank is unhelpful at best and unscientific at worst,' Munafò's team concluded. CJ

HONOUR

Professor Peter Fonagy, Chartered Psychologist and Society Associate Fellow, has been appointed OBE for services to psychoanalysis and clinical psychology.

Fonagy is Chief Executive of The Anna Freud Centre and Head of the Department of Clinical, Educational and Health Psychology at UCL. A winner of the Society's 2012 Lifetime Achievement Award (see February 2013), his groundbreaking work has included the development of mentalisation-based treatment – a form of psychotherapy that focuses on understanding our own and other people's mental states. 'If the award helps bring a little more attention to what psychological interventions can achieve I will be even more delighted to have received this honour,' he said.

CRIMINOLOGY PRIZE

Society Fellow Professor David Farrington OBE (University of Cambridge) has received the 2013 Stockholm Prize in Criminology, a prestigious international award that recognises the work of researchers who've made a significant contribution to criminology research, in this case in the area of early-life crime prevention. 'Farrington's work is an excellent example of how good criminological research can help to reduce crime and increase people's quality of life', said Jerzy Sarnecki of the prize jury.

VIOLENCE EPIDEMIC

Thirty per cent of women globally are victims of intimate partner physical and sexual violence, according to an analysis published by the World Health Organization (tinyurl.com/kp6x4jm). The report also found that female victims of intimate partner violence are almost twice as likely to experience depression as controls. 'These findings send a powerful message that violence against women is a global health problem of epidemic proportions,' said Dr Margaret Chan, Director-General, WHO. The study did not look at emotional and psychological abuse. CJ

EROTIC AWARD

Psychology lecturer Dr Meg Barker at the Open University was among the winners at this year's Erotic Awards – a British event that honours 'Stars in the Erotic Universe' with proceeds going to the Outsiders charity that helps disabled people find sexual partners. Barker won the academic award for her book *Rewriting the Rules: An Integrative Guide to Love, Sex and Relationships*. 'I was surprised to hear that the Erotic Awards even had an academic category, let alone that I had been nominated,' she told *Times Higher Education*.

EMOTIONS SCANNED

Researchers at Carnegie Mellon University have decoded the emotion a person is experiencing based purely on their pattern of brain activity (*PLoS One*: tinyurl.com/phad2fu). Karim Kassam and his colleagues scanned the brains of actors as they self-induced various emotions. Later the researchers were able to infer an actor's emotional state from their brain scan, based either on their previous neural activity during the same emotion or on the averaged activity of other actors. 'Despite manifest differences between people's psychology, different people tend to neurally encode emotions in remarkably similar ways,' said co-author Amanda Markey.

PSYCHOPHARMACOLOGY AWARDS

A trio of mental health researchers at the University of Bristol have won awards from the British Association of Psychopharmacology (BAP). Suzi Gage won the Public Communication Prize for her Guardian blog *Sifting the Evidence* (guardian.co.uk/science/sifting-the-evidence) and other activities; Angela Attwood, who researches drug addiction, won the BAP Psychopharmacology Award for excellence in psychopharmacology; and Marcus Munafò won the BAP/Cambridge Cognition award for the development of the Bristol Emotion Recognition Task, which assesses people's sensitivity to facial expressions of emotion. **CJ**

IAPT efficacy questioned

Researchers at the University of Chester's recently launched Centre for Psychological Therapies in Primary Care have questioned the way that the Improving Access to Psychological Therapies (IAPT) programme reports its outcomes for clients (tinyurl.com/phoaykf).

Clients undertaking therapy through IAPT complete questionnaires after each session so that their progress can be monitored and recorded. Based on this, IAPT claims an average recovery rate of 43 per cent for clients who complete therapy. However, Patrick Pietroni and his co-authors Steve Griffiths and psychology graduate Scott Steen claim that this is potentially misleading.

They obtained data through the NHS information Centre: Specialist Mental

Health Service website showing that the proportion of clients who recover from mental illness based on all those who started therapy is 24 per cent. Moreover, looking at all the clients who are referred to IAPT, regardless of whether they attend or complete therapy, the recovery rate comes out at just 12 per cent.

'Commissioners of psychological therapies in Primary Care will want to exercise their own judgement as to which of these figures offers transparency to support analysis of outcomes,' said Pietroni and his colleagues. 'Recognition and understanding of the needs and experience of the high proportion of patients who have one or fewer contacts with therapists should be a high priority in the development of commissioning for psychological therapy.' **CJ**

Perinatal mental illness

The NSPCC (National Society for the Prevention of Cruelty to Children) has published a new report calling for pregnant women and new mothers to become a priority for Improving Access to Psychological Therapy (IAPT) services. The report has been welcomed by the British Psychological Society's own Faculty of Perinatal Psychology.

All Babies Count: Spotlight on Perinatal Mental Health (tinyurl.com/qc837tb) highlights that mental illness is experienced by 10 per cent of pregnant women before and/or after they give birth and yet there are wide discrepancies across England in the services available to them. For instance, 64 per cent of Primary Care Trusts do not have a dedicated perinatal mental health strategy; 29 per cent of midwives said they had no training in perinatal mental health; and there is no specialist training in perinatal mental health for therapists working in IAPT programmes.

Perinatal mental illness is not restricted to postnatal depression, the report says. Thousands of women are also affected by conditions such as postpartum psychosis and post-traumatic stress disorder. In turn, a mother's mental illness can have an adverse effect on her unborn child or baby. This includes the effect of stress-related hormones on the neurological development of the fetus.

There is good evidence for the kind of services and support that can help women

with perinatal mental illness, with knock-on benefits for their children and wider families. The report authors say their document is 'a call to action for key decision makers at a national and local level to work together to close these gaps [in services], to improve the lives of families, and to prevent unnecessary suffering.'

Among the contributors to the NSPCC report were Chartered Psychologist Dr Susan Pawlby at the Institute of Psychiatry and Vivette Glover, Professor of Perinatal Psychobiology at Imperial College's Fetal and Neonatal Stress Research Group.

In related news, the National Forum for Neuroscience in Special Education issued a statement earlier this year drawing attention to the rising number of children born pre-term, for greater awareness of their educational needs and investment in suitable services and training.

Forum co-founder Professor Barry Carpenter said: 'There can be as many as four children born prematurely in every primary classroom. As a mother in our recent research said, these children are "wired differently". If that is so they also learn differently. So, in what ways do teachers teach differently? No one is guiding teachers, and these are significant numbers of children.' **CJ**

I To find out more about the needs of pre-term children and to access the statement, visit ssatuk.co.uk/ssat/preterm-statement

Evidence for adult neurogenesis

Who would have thought that above-ground nuclear testing during the Cold War would help settle a long-running neuroscience controversy more than half a century later? That's exactly what's happened with publication of an ingenious new study that's provided rare direct evidence for the growth of new neurons in adult humans (*Cell*: [cell.com/abstract/S0092-8674\(13\)00533-3](http://cell.com/abstract/S0092-8674(13)00533-3)).

Kirsty Spalding at the Karolinska Institutet and her colleagues exploited the fact that surface nuclear bomb tests conducted between 1955 and 1963 increased levels of carbon-14 in the atmosphere. Diffusion and absorption by plants means these levels have gradually reduced over the ensuing decades, a fact that's reflected in human cells. This is because we take in carbon-14 through the plants we eat and its concentration is recorded in the DNA of our cells every time they divide.

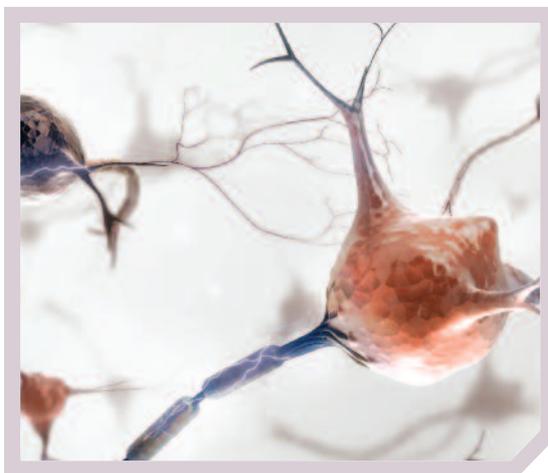
Inspecting dozens of brains donated at post-mortem to the Miller School of Medicine Brain Endowment Bank in Miami, the Swedish National Department of Forensic Medicine and the University of Debrecen, the researchers were able to judge from levels of carbon-14 in cellular DNA, the age of the neurons and non-neuronal cells in the dentate gyrus of the hippocampus – a structure where neurogenesis (the growth of new neurons) is thought to occur.

Neurons in the brains of individuals who'd been born before 1955 had higher levels of carbon-14 than were present in the atmosphere at the time of their birth and youth, thus confirming they must have grown new neurons in adulthood. Further analysis indicated that the adult hippocampus grows about 700 new neurons every day, a process that slows only slightly with age. This means there is still a slight loss of neurons over time because neurogenesis does not keep pace with neuronal death. There was no difference in rates of neurogenesis between men and women.

This new study addresses the 'no new neurons' dogma that held for much of the last century. The dogma had its roots in the writings and research of the great Spanish neuroscientist Santiago Ramón y Cajal. Before now the only direct evidence for adult neurogenesis was published in the late 1990s based on an opportunistic study of deceased cancer patients who'd been injected with a dye for the purposes of monitoring their tumour growth.

'It was thought for a long time that we are born with a certain number of neurons, and that it is impossible to get new neurons after birth,' said co-author Jonas Frisén. 'In this current study, we provide evidence that there is substantial neurogenesis in the human hippocampus throughout life, suggesting that the new neurons may contribute to human brain function.'

Research into the possible functional contribution of neurons born in adulthood is a hot topic in neuroscience



Analysis indicated that the adult hippocampus grows about 700 new neurons every day

and biological psychology. One theory is that new neurons play a role in what's known as 'pattern separation' – that is, our ability to tell similar contexts apart, the flip-side of which is over-generalisation. This ties in with research suggesting that antidepressant and anti-anxiety drugs exert their therapeutic effect via increased neurogenesis. In turn, this could help patients avoid seeing danger in safe situations that resemble past threats. CJ

FUNDING NEWS

The Society for Research into Higher Education (SRHE) is offering four awards of £10,000 for **research into higher education** under the following themes: higher education policy; higher education and society; and higher education practice. Scoping awards of £5000 are also available to explore new or emerging areas of higher education research. Applicants must be individual members of the SRHE at the date of application. The closing date for applications is 1 September 2013.

| tinyurl.com/6r8wotw

The Forces in Mind Trust have research grants available for research projects that will **improve the transition of service men and women from military to civilian life**.

Areas of particular interest include: finding a job, training and education; impact on families; support for spouses, dependants and partners; improving the psychological well being of the armed forces community; and ex-service personnel in the criminal justice sector. There are restrictions on what will be funded, details of these are available on the website. Applications can be made at any time.

| www.fim-trust.org/how-to-apply-top-menu

The Joseph Rowntree Foundation has a call for proposals that focuses on understanding the attitudes and expectations of different generations in relation to **work and retirement**. It is hoped that the research will reveal implications for policy and practice, especially in relation to extending working lives. The Foundation is particularly interested in the perspectives of those in low paid and low skilled work. The closing date for applications is 11 September 2013.

| tinyurl.com/o27galw

The National Institutes of Health (USA) has announced a call for research to **characterise and reduce stigma to improve health** (R03) and (R01 & R21). The call seeks to characterise the role of stigma in health, life course development, and ageing and to test interventions to prevent or reduce stigma at the individual, community, healthcare and policy level. These issues, both within the US and globally, are of interest. The closing date for applications is 16 October 2013.

| tinyurl.com/ovnw7b

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