

'Seismic move' or barely a tremor?

As this month's issue of *The Psychologist* was headed to the printers, the American Psychiatric Association were just days away from publishing the eagerly anticipated fifth edition of their diagnostic code, the DSM-5. Never far from controversy, the publication's imminent arrival was overshadowed by a double-whammy of criticism – from the director of the National Institute of Mental Health (NIMH), the world's largest funder of mental health research, and from the Society's own Division of Clinical Psychology (DCP).

Writing on his official blog, NIMH Director Thomas Insel lamented the fact that diagnostic categories in psychiatry continue to be based on symptom clusters, not on underlying biological causes. 'Patients with mental disorders deserve better,' he said, adding that his organisation 'will be re-orienting its research away from DSM categories.' He explained that for the last 18 months the NIMH has been running a project called Research Domain Criteria, which aims to 'transform diagnosis by incorporating

genetics, imaging, cognitive science, and other levels of information to lay the foundation for a new classification system.'

Headed by clinical psychologist Bruce Cuthbert, the motivation for the decade-long Research Domain Criteria project is the frequent finding that biomarkers for mental illness do not match psychiatric diagnostic categories that are based on patient symptoms. For instance, an NIH-funded study published earlier this year reported that the same four genetic variations were associated with five different psychiatric diagnoses – autism, ADHD, depression, bipolar disorder and schizophrenia (see April News).

Commentators were divided as to the significance of Insel's intervention. Vaughan Bell of the Institute of Psychiatry called it a 'potentially seismic move'. Hank Campbell, founder of the Science 2.0 website, said the NIMH had delivered a 'kill shot to DSM-5'. However, others were left wondering what all the fuss was about. It is well-

documented that the original aim of DSM-5 was to replace the old category-based diagnostic system with a new dimensional format based on underlying biological risk factors, but the project was abandoned for lack of adequate data. In a press statement, DSM-5 chair David Kupfer said the promise of biological markers for mental disorders had been anticipated since the 70s, but that we're still waiting. Meantime, he said DSM-5 'represents the strongest system currently available for classifying disorders.'

Professor Francesca Happé, Director of the MRC Social, Genetic and Developmental Psychiatry Centre at the Institute of Psychiatry and a member of the neurodevelopmental disorders work group for DSM-5, appeared to back Kupfer's view when she told us: 'At the beginning of the DSM-5 process, they asked everyone to consider whether neurobiological information, including genetics and anything you can think of on the biological side, could be used to aid diagnosis in any of these conditions,

Hospital passports 'a great success'

An innovative scheme which aims to help children combat their fear of being in hospital is to be rolled out across Scotland.

The Hospital Passport scheme was developed by psychologists at the Royal Hospital for Sick Children in Glasgow (Yorkhill) and has been piloted in a number of wards in the hospital.

Children can use the passport around the hospital collecting a variety of stickers and stamps as they go through various treatments, or 'travel' to different departments. It aims to make children feel more at ease, and more involved in their treatment and care.

Scottish Health Secretary Alex Neil visited Yorkhill Hospital to meet some of the children who have benefited from the passport, and said: 'I've met with some of the children and families who have used the passport to hear their own experiences

of how it helped make going into hospital seem less daunting. I am delighted that the passport is now to be rolled out to other children's hospitals across Scotland, and I hope it can make a difference to the experiences of more children and their families.'

A parent involved in the pilot scheme said: 'It definitely helped me and my child talk more and made it easier to approach what is wrong with her and why she has come to hospital.'

Psychologist Dr Janie Donnan, who co-created the Hospital Passport Coping Kit at Yorkhill, explained: 'The passport has proven to be a great success not only among children but also with parents and staff, and we are delighted that we've had so much interest in developing it further and rolling it out across Scotland.'

'Of the children and parents we surveyed about the impact of the passport, 100 per cent of children said they would recommend it to their friends and more than 90 per cent of parents said they would recommend the Hospital Passport as a useful tool. It gives children a simple way to make choices about what would help them with procedures and treatments, and communicates those easily to staff, which helps place them at the heart of decision making around their own healthcare.' JS



Alex Neil MSP meets children from the pilot scheme and Dr Janie Donnan at Yorkhill Hospital

and the resounding answer was no, or at least “not yet”.

Meanwhile, the DCP issued a statement attacking DSM-5 from a different direction, for being too biologically based and for minimising ‘psychosocial factors in people’s distress’. The Division’s statement (tinyurl.com/dcpdsm5) calls for a ‘paradigm shift’ in the diagnosis of mental health problems, for an approach ‘that is multi-factorial, contextualises distress and behaviour, and acknowledges the complexity of the interactions involved in all human experience.’ It follows a similar statement published by the British Psychological Society last year.

However, challenging the DCP statement in *The Observer*, Sir Simon Wesseley, Professor of Psychological Medicine at the Institute of Psychiatry, wrote that ‘Psychiatry is the study of the brain and the mind. Psychiatrists look at the whole person, and indeed beyond the person to their family, and to society.’ He concluded that DSM ‘isn’t

the system of classification that we use over here in any case. In practice, most UK mental health professionals will barely notice much difference... most of those in the business of helping those with mental disorders will be less concerned with what is in and what is out than with the reality of underfunded and overstretched services. The idea that we are part of a conspiracy to medicalise normality will seem frankly laughable as we struggle to protect services for those whose disorders are all too evident under any classification system.’ CJ

I The Society’s Division of Educational and Child Psychology is holding a one-day event on 28 June: The Medicalisation of Childhood: Time for a Paradigm Shift. See www.bps.org.uk/decjune28 Also, Simon Wesseley is running a conference on DSM-5 at the Institute of Psychiatry in London on 4 and 5 June: (tinyurl.com/cgt56xr). Speakers include DSM-5 Chair Dr David Kupfer, and Honorary BPS Fellow, Professor of Clinical Psychology David Clark CBE.

FRAUD DETECTOR

When Jim McCormick was sentenced to 10 years behind bars in May for selling fake bomb detectors, one psychologist was particularly satisfied. Bruce Hood, Professor of Developmental Psychology in Society at the University of Bristol, had campaigned against McCormick for several years.

McCormick is said to have made £50m from sales to countries including Iraq and Georgia. He claimed that the device, modelled on a novelty golf ball finder, could bypass ‘all forms of concealment’, detecting drugs, people, ivory and money along with explosives. Richard Whittam QC, for the prosecution, said: ‘The devices did not work and he knew they did not work.’

Professor Hood read a 2009 report in the *New York Times* (see tinyurl.com/yg4e4ev), and was shocked to realise the devices were nothing more than dowsing rods, an age-old practice believed to reveal the location of water and minerals. ‘Despite the claims of various associations and practitioners, dowsing is nothing more than a psychological phenomena known as the ideomotor effect,’ Hood said. ‘Simply put, when you are aware of the location of a potential target, you make imperceptible body movements that make finely balanced rods or pendulums point in the same direction. There is no evidence that these devices or the user can detect sources through supernatural powers.’

After Professor Hood blogged about it (<http://brucehood.wordpress.com>), McCormick got in touch with him defending his actions and the device and issuing an invitation to check it out. ‘This was an opportunity to expose a fraud that was too good to miss. Maybe he really believed the device worked but I was dubious... When it became known that I was in contact with the elusive Mr McCormick, the BBC *Newsnight* team contacted me and we set about trying to set up a sting to confront the fraudster. I corresponded with Jim via email to organise a meeting but he failed to show. In any event, we decided to go ahead with the broadcast in January 2010. The following day, McCormick was arrested and an export order ban was imposed.’

I asked Professor Hood about the psychology involved in the case. ‘Many people regard magical beliefs as a bit of harmless fun, and in most cases that is true,’ he said. ‘However, there are those who are prepared to take advantage of others’ gullibility with lethal consequences.’ Was there any chance that McCormick himself believed in his product? ‘Clearly not’, Hood replied. ‘But the really big question is how he persuaded the various authorities that dowsing really did work?’ JS

FEELING OVERWHELMED

The Stroke Association has called for more investment in clinical psychology services as part of its campaign drawing attention to the emotional impact of the condition.

In a report published in May, *Feeling Overwhelmed*, the organisation notes that over two thirds of stroke survivors reported feeling depressed or anxious as a result of their stroke, and yet 79 per cent said they’d received no information or practical advice to help them with the emotional impact of their condition (see tinyurl.com/c4a2zuj).

The findings are based on a UK-wide survey of 1774 stroke survivors and 937 carers. The results also exposed the impact of stroke on carers, with 79 per cent reporting anxiety and over half saying that their

relationship with a stroke survivor had suffered or changed.

Despite the emotional impact of stroke, over half of stroke units in England, Wales and Northern Ireland have no access to psychology services; in Scotland this rises to two thirds. The new report cites research by the NHS Stroke Improvement Programme (in England), which indicates an ‘investment of around £69,000 in psychological care through a clinical psychologist-led service... may deliver a benefit of around £108,000 in around two years’.

Several psychologists were involved in the *Feeling Overwhelmed* report, including: Chartered Psychologist Professor Reg Morris, Clinical Psychologist at Cardiff and Vale

University Health Board; BPS member Jack Smith; Associate Fellow and Chartered Psychologist Dr Audrey Bowen at the University of Manchester; and Chartered Psychologist and Associate Fellow Dr Becky Simm, Principal Clinical Psychologist at Southport and Ormskirk NHS Hospital Trust.

‘Depression, anxiety and fear of another stroke are common feelings amongst those touched by the condition, and in the most extreme cases people can be left feeling suicidal,’ said Professor Morris. ‘Better recognition of the emotional effects of stroke by health and social care professionals is essential in order to address the need for integrated psychological support for survivors and their families.’ CJ

RESEARCH AWARD

Chartered Psychologist and BPS Associate Fellow Professor Emily Holmes, a senior scientist at the MRC Cognition and Brain Sciences Unit, has won a prestigious Friedrich Wilhelm Bessel Research Award from the Alexander von Humboldt-Foundation. Worth €45,000, the awards are made to researchers who are 'expected to continue producing cutting-edge achievements'.

OLIVIER AWARDS

The theatrical adaptation by Simon Stephens of Mark Haddon's 2003 novel that stars a boy with Asperger's – *The Curious Incident of the Dog in the Night-Time* – won a record-breaking seven awards at the Laurence Olivier Awards in April, including best new play and best actor (Luke Treadaway). The play is currently showing at the Apollo Theatre in London's West End.

NATHAN AZRIN

Nathan Azrin, the psychologist who developed the principle of 'token economies' as a way to reward mental health patients for constructive behaviour, has died aged 82. According to an obituary in the *New York Times*, his most influential publication was his 1968 book *The Token Economy*, co-authored with Teodoro Ayllon.

PRESIDENT OF INSAR

Professor of Cognitive Neuroscience Francesca Happé is now President of The International Society for Autism Research (www.autism-insar.org), after taking over at the organisation's annual meeting held in Spain in May. Happé is director of the MRC Social, Genetic and Developmental Psychiatry Centre at the Institute of Psychiatry and a winner of the Society's Spearman Medal.

KEEP AN EYE ON IT

Placement of a poster showing 'watching eyes' above bicycle racks in Newcastle led to a 62 per cent drop in thefts over a 12-month period, compared with a 65 per cent increase in control locations without the poster. The research led by Daniel Nettle at Newcastle University was published in *PLoS One* (tinyurl.com/cxd88rr).

TOP THINKERS

Two psychologists, Steven Pinker and Daniel Kahneman, were among the world's top ten thinkers in an annual poll conducted by *Prospect* magazine (tinyurl.com/cqheqjt). CJ

'Nudge unit' in the news

The UK government's Behavioural Insights Team – nicknamed the Nudge Unit and headed by psychology graduate David Halpern – is to become a part-privatised mutual. The Unit advises the government on the use of psychological principles to encourage people to change their behaviour in ways judged to be for their own good, or for the good of the country. It also conducts research: example projects include using personalised text messages to boost the payment of Court fines, and exploring the impact of alcohol pricing. The BPS has collaborated with the Unit in the past, although there is no formal relationship.

A competition is now underway to attract a private partner who will own one third of the Unit. The government will retain a third and the Unit's 13 personnel will own the remainder, following a mutual model similar to that used by the John Lewis department store.

This is the first time a government policy unit has been spun off in this way, in accordance with the Civil Reform Plan to increase efficiency in the civil service. The Nudge Unit claims to have saved the government over £300 million since its conception in 2010, and its success has led to interest in its services from the private sector and even foreign governments.

Deputy Director Owain Service told us the team 'would continue to prioritise its work for the Cabinet Office, which in the short to medium term will focus on jobs and growth. But the creation of the joint venture will enable the team to expand its external programme of work, but only where there is an underlying social purpose. As ever, the team are really keen

to engage with the academic community, including members of the BPS. If members would like to talk to the team about collaborating in these areas or others, they should get in touch.'

The Nudge Unit made the headlines for the wrong reasons late in April, after the anti-Coalition Skwawkbox blog (skwalker1964.wordpress.com) claimed that job seekers were being required to complete an online strengths questionnaire that gave similar results regardless of the way it was completed. Devised by the Nudge Unit, the test was a shortened version of a questionnaire created by the VIA Institute on Character, a positive psychology organisation based in Ohio and headed by clinical psychologist Neal Mayerson. *The Guardian* picked up the story and reported that the VIA's communication director had told Nudge Unit psychologists not to use the shortened version, which was non-validated. The newspaper added that complaints against 'the unit's use of the bogus survey' had been lodged with the BPS and the Health and Care Professions Council, and the BPS supplied a statement in response to a *Guardian* request.

Replying in *The Guardian* (tinyurl.com/meqzfm), Halpern and psychologist Professor Martin Seligman denied the test was either required or bogus, saying: 'Like any test of this kind, meaningless responses to the questions will lead to meaningless results... Exercises such as this test help rebuild self-confidence and identify character strengths, such as being good with people. It would be a shame if that confidence, and help, is knocked by a cheap exercise in showing it is possible to game a test.' CJ



Neuroscientist Professor Melvyn Goodale, a major contributor to the dual system account of visual processing, is among the newly elected Fellows of the Royal Society announced in May. Goodale, who's based at the University of Western Ontario, won the British Psychological Society's Book Award in 2005 for *Sight Unseen*, which he co-authored with David Milner. Their research on the separate visual pathways for perception and action is a staple of undergraduate courses on visual cognition. Also elected to the fellowship as a foreign member was Professor Eric Kandel, renowned for his ground-breaking research into the biological basis of learning and memory. CJ

Fist shaken

A new study purporting to show an effect of fist-clenching on episodic memory has attracted withering criticism and sparked a debate about the reputation of open-access journals.

In an experiment with 51 right-handers, Ruth Propper at Montclair State University and her colleagues claimed that right-hand clenching immediately prior to memory encoding and left-hand clenching immediately prior to memory retrieval boosted their participants' memory performance. They said this provided support for the HERA (hemispheric encoding/retrieval asymmetry) model.

Their paper published in April on *PLoS One* attracted widespread media coverage and has been viewed nearly 17,000 times. But despite its popular appeal, the research has provoked

scathing criticism from other memory researchers. Among the concerns are the small group sizes ($n < 10$), and the lack of a statistically significant effect for the crucial comparison between fist-clenching versus a control condition with no clenching.

Most damning in his commentary was Jon Simons, principal investigator in the memory laboratory at the University of Cambridge. Writing on the *PLoS One* website, he branded the paper 'fist-clenchingly poor science' and said it would reinforce the prejudice that 'open access journals will publish any old rubbish'. Propper subsequently posted a defence of her work. You can read her comments, as well as further criticism from Hal Pashler and others, at tinyurl.com/cxm7hlg. CJ

Trivial research

A row has erupted over the replicability of another well-known social priming effect – the finding published in the late 1990s that thinking about a professor boosted participants' performance on Trivial Pursuit general knowledge questions, compared with thinking about a secretary or a hooligan.

In a new paper published in the open-access journal *PLoS One*, David Shanks at UCL and Ben Newell at the University of New South Wales attempted to replicate this professor effect across nine experiments involving 475 participants, but they found no sign of its existence. 'We do not deny outright the possibility of unconscious influences on behavior...' they wrote. 'However the present results are consistent with many other examples where claims of unconscious influences have not withstood

subsequent scrutiny.'

The negative finding comes after a failed attempt last year (also published in *PLoS One*) to replicate another highly-cited paper 1990s paper, which purported to show priming with the elderly stereotype led participants to exit a lab more slowly (see News, April 2012). At the time, Yale University social psychologist John Bargh reacted angrily to the failed replication of his work, writing on his blog that the authors of the replication attempt were 'incompetent and ill-informed' (the blog post was later removed).

Now the reaction of Ap Dijksterhuis at Radboud University in Nijmegen, co-author of the original professor priming research, has led some commentators to fear history is repeating itself. Dijksterhuis posted a lengthy comment on *PLoS One* accusing Shanks and Newell of committing 'beginners' mistakes' and conducting their research



under 'unprofessional circumstances', with the result that their 'sub-standard experiments' failed to follow the protocols of his original research.

Shanks subsequently defended his work and, as was the case last year, the row has attracted the attention of science reporters. In particular, *Nature* published a news item headed 'Disputed results a fresh blow for social psychology' (tinyurl.com/bmw3jeq). Their coverage has since been criticised by psychologists, including David Nussbaum at the University of Chicago. Writing on *Nature's* website, he said: 'Ideally, science is self-correcting, so why would it be a blow to an entire field when it engages in self-correction?' CJ

FUNDING NEWS

Call 3 of the National Awareness and Early Diagnosis Initiative to promote **earlier diagnosis of cancer and access to optimal treatment** is now open for applications.

The key questions are:

- I investigating the reasons for late presentation to primary care or A&E and low uptake of screening;
- I developing effective interventions to prompt change, at individual and systemic levels;
- I investigating reasons for delays occurring within primary care and onward referral.

Within these questions, behavioural responses to symptoms and clusters of symptoms are of interest. A call workshop will be held on 28 June for those interested in applying. The closing date for applications is 13 September.

tinyurl.com/d34557q

Under the **EC 'European Partnership on Sports'** action, a call is open for proposals to support transnational projects, put forward by public bodies and not-for-profit organisations, to identify and test suitable networks and good practices in:

- I strengthening good governance and dual careers in sport through support for the mobility of volunteers, coaches, managers and staff;
- I protecting athletes, especially the youngest, from health and safety hazards by improving training and competition conditions;
- I promoting traditional European sport and games.

Applications must be made by 19 July 2013.

tinyurl.com/bqf3jps

The Paul Hamlyn Foundation have an **Education and Learning Programme** that supports proposals under the following themes: tackling school exclusion and truancy; developing speaking and listening skills; and supplementary education. The grants seek to support projects that have the potential influence policy and practice beyond a single organisation.

tinyurl.com/c2aml5f

Remedi supports research projects in any medical condition that causes impairment, activity limitation, restriction in participation and reduced quality of life for which **rehabilitation** is an appropriate response.

tinyurl.com/cm2vxg4

info

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

Serious power failure

Psychology has had a torrid time of late, with fraud scandals and question marks about the replicability of many of the discipline's key findings. Now it is joined in the dock by its more biologically oriented sibling: neuroscience. A team led by Katherine Button at the School of Experimental Psychology in Bristol, and including psychologist Brian Nosek, founder of the new Center for Open Science, make the case in a new paper that the majority of neuroscience studies involve woefully small sample sizes, rendering their results highly unreliable. 'Low statistical power is an endemic problem in neuroscience,' they write.

At the heart of their case is a comprehensive analysis of 49 neuroscience meta-analyses published in 2011 (that's all the meta-analyses published that year that contained the information required for their purposes). This took in 730 individual papers, including genetic studies, drug research and papers on brain abnormalities.

Meta-analyses collate all the findings in a given field as a way to provide the most accurate estimate possible about the size of any relevant effects. Button's team compared these effect size estimates for neuroscience's subfields against the average sample sizes used in those same areas of research. If the meta-analyses for a particular subfield suggested an effect – such as a brain abnormality associated with a mental illness – is real, but subtle, then this would indicate that suitable investigations in that field ought to involve large samples in order to be adequately powered. A larger effect size would require more modest samples.

Based on this, the researchers' estimate is that the median statistical power of a neuroscience study is 21 per cent. This means that the vast majority (around 79 per cent) of real effects in brain science are likely being missed. More worrying still, when underpowered studies do uncover a significant result, the lack of power means the chances are increased that the finding is spurious.

Thirdly, significant effect sizes uncovered by underpowered studies tend to be overestimates of the true effect size, even when the reported effect is in fact real. This is because, by their very nature, underpowered studies are only likely to turn up significant results in data where the effect size happens to be large.

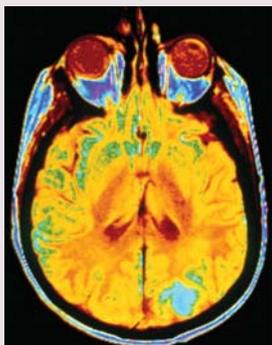
It gets more worrying. The aforementioned issues are what you get when all else in the methodology is sound, bar the inadequate sample size. Trouble is, Button and her colleagues say underpowered studies often have other problems too. For instance, small studies are more vulnerable to the 'file-drawer effect', in which negative results tend to get swept under the carpet (simply because it's easier to ignore a quick and easy study than a massive, expensive one). Underpowered studies are also more vulnerable to an issue known as 'vibration of effects' whereby the results vary considerably with the particular choice of analysis. And yes, there is often a huge choice of analysis methods in neuroscience. A recent paper documented how 241 fMRI studies involved 223 unique analysis strategies.

Because of the relative paucity of brain-imaging papers in their main analysis, Button's team also turned their attention specifically to the brain-imaging field. Based on findings from 461 studies published between 2006

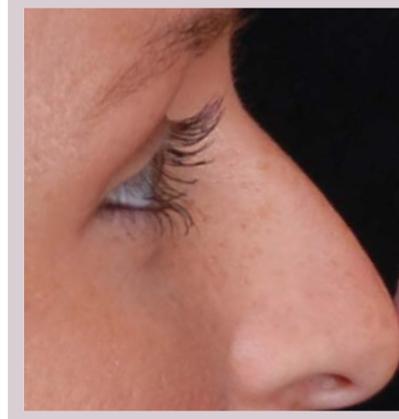
and 2009, they estimate that the median statistical power in the subdiscipline of brain volume abnormality research is just 8 per cent.

Switching targets to the field of animal research (focusing on studies involving rats and mazes), they estimate most studies had a 'severely' inadequate statistical power in the range of 18 to 31 per cent. This raises important ethical issues, Button's team said, because it makes it highly likely that animals are being sacrificed with minimal chance of discovering true effects. It's clearly a sensitive area, but one logical implication is that it would be more justifiable to conduct studies with larger samples of animals, because at least then there would be a more realistic chance of discovering the effects under investigation (a similar logic can also be applied to human studies).

The prevalence of inadequately powered studies in neuroscience is all the more disconcerting, Button and her colleagues conclude, because most of the low-lying fruit in brain science has already been picked. Today, the discipline is largely on the search for more subtle effects, and for this mission, suitable studies need to be as highly powered as possible. Yet sample sizes have stood still, while at the same time it has become easier than ever to run repeated, varied analyses on the same data, until a seemingly positive result crops up. This leads to a 'disquieting conclusion', the researchers said – 'a dramatic increase in the likelihood that statistically significant findings are spurious.' They end their paper with a number of suggestions for how to rehabilitate the field, including performing routine power calculations prior to conducting studies (to ensure they are suitably powered), disclosing methods and findings transparently, and working collaboratively to increase study power.



In the May issue of *Nature Reviews Neuroscience*



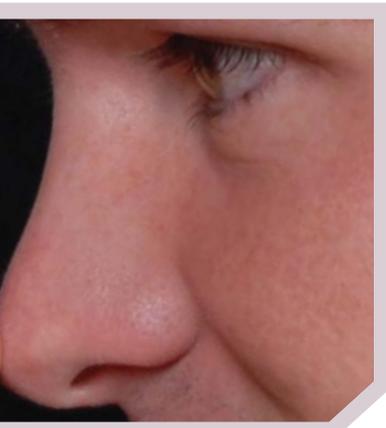
The love lives of the men and women who have no sense of smell

In the February issue of *Biological Psychology*

Around one in 7500 otherwise healthy people are born with no sense of smell, a condition known as isolated congenital anosmia (ICA). So dominant are sight and hearing to our lives, you might think this lack of smell would be fairly inconsequential. In fact, a study of individuals with ICA published last year showed just how important smell is to humans. Compared with controls, the people with ICA were more insecure in their relationships, more prone to depression and to household accidents.

Now, in a follow-up paper involving the same 32 patients with ICA, Ilona Croy and her colleagues have looked at how this lack of a sense of smell affects their sexual relationships. The researchers' analysis uncovered an intriguing sex difference. Compared with 15 age-matched controls, the 10 men with no sense of smell reported having substantially fewer sexual partners in their lifetime (male controls averaged five times the number of partners). In contrast, women with no sense of smell averaged just as many sexual partners as women with smell.

On the other hand, the 22 women (but not the men) without a sense of smell tended to report feeling more insecure in their relationship with their current partner, than did the healthy controls. This insecurity was specific to their sexual partner and wasn't found in



Female political role models have an empowering effect on women

In the May issue of the *Journal of Experimental Social Psychology*

relation to friendships or maternal attachment.

Across both sexes, the impact of a loss of smell makes sense given the mounting evidence for the social importance of smell, for example we can use smell to detect other people's anxiety; people with more empathy are more likely to remember your smell; and smells convey at least some personality traits. Also, common sense suggests people without a sense of smell might worry about any odours they could be exuding without their knowledge. But the question still remains – why should not having a sense of smell affect men and women differently?

The researchers surmised that not having smell reduces men's 'exploratory sexual behaviour', perhaps due to their lack of social confidence. Consistent with this interpretation, there was a negative correlation between the male (but not female) patients' levels of social insecurity and their number of sexual partners.

On the other hand, the researchers think the effect of a lack of smell on women makes sense in light of past research suggesting that smell is more important for their relationship security, than it is for men. For instance, a study published in 2008 found that a half of the women surveyed had worn someone else's clothes (usually a partner's) because of

its smell, compared with just 13 per cent of men. Also relevant – the female patients' had lower social confidence than the female controls, and this correlated with their lack of relationship security.

Other research has shown that odour is more important to women than it is to men in choosing a partner: women supposedly prioritise good odour over good looks, the opposite, although it's not clear how this fits with the current findings. Women also seem to have a superior sense of smell, on average, compared with men, and value the sense more highly.

Croy and her colleagues acknowledged the need for caution given their small sample size, but they said their results emphasise 'the importance of the sense of smell for intimate relationships'.

The late Margaret Thatcher – Britain's first and, so far, only female Prime Minister – is criticised for failing to do more to help other women get ahead in politics. Supporters argue, however, that the example she set will, on its own, have been of profound benefit to women with leadership ambitions. A new study puts this principle to the test, examining the effect on women of reminders about the contemporary female political high-flyers Angela Merkel and Hillary Clinton.

Ioana Latu and her colleagues recruited 149 Swiss student participants (81 women) to make a persuasive public speech against the rise in student fees. The speeches were made in a virtual reality room in front of a virtual audience of 12 men and women. Crucially, some of the participants performed their

speech in a room with a poster of Hillary Clinton on the back wall; others with Merkel on the wall; a third group with Bill Clinton's poster on the back wall; and for a final group, there was no poster.

The key result is that the female students spoke for significantly longer (a sign of dominance) when Merkel or Hillary Clinton was on the back wall (as opposed to Bill or no poster) – an increase of 49 per cent and 24 per cent, respectively, making their speeches just as long as the men's. These female students' speeches were also rated as better quality by two coders blind to the experimental condition, and they also evaluated their own performance more positively. The presence of the different posters made no difference to the performance of the male students.

'We believe these findings are important because although a wealth of research has studied the effects of role models on academic and math performance, there is no research that investigates the effect of female political role models on successful leadership behaviour,' the researchers concluded. 'Yet, exactly such behaviour is crucial because not only is an increase in female politicians the goal of equality, it can also be (as our results show) the engine that drives it.'



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