

In defence of inferential statistics

In February *Basic and Applied Social Psychology* (an American Psychological Association journal) announced that it was banning the reporting of null hypothesis significance testing procedures (NHSTP) and confidence intervals (CI) (Trafimow & Marks, 2015). We are writing to express our hope that the journals published by the British Psychological Society will not be lured into similarly banning CIs and distancing psychology from medical research in which CIs are routinely employed. We believe that CIs offer an as yet undeveloped but potentially very valuable tool for psychologists to interpret their data (see e.g. Smith & Morris, in press). Any ban that involves throwing out the CI baby with the NHSTP bathwater should be avoided.

Trafimow and Marks (2015) condemn CIs because, they say, 'A 95% confidence interval does not indicate that the parameter of interest has a 95% probability of being within the interval. Rather, it means merely that if an infinite number of samples were taken and confidence intervals computed, 95% of the confidence intervals would capture the population parameter.' It is true, as Cumming (2012) points out (p.79), that a 95 per cent confidence interval refers to the whole process of taking a sample and calculating a CI, 95 per cent of which will capture the population mean. However, it follows that the 95 per cent CIs that you calculate will most likely capture the population parameter.

The great value of CIs is that they provide valuable probabilistic information about the true location of the population mean. NHSTP deals with the normally uninteresting null hypothesis: the probability of the data if the difference or relationship is zero, or some other specific value. CIs help us conceptualise the plausible locations of the parameter (e.g.

population mean or effect size), and the variability or precision of that estimate. As Smith and Morris (in press) point out, when we know both an effect size and its CI we can make a much more useful interpretation of the results of our research than when we have an effect size alone. We know of no alternative to standard errors in some form, such as CIs, for describing the likely variability in our effect size if we repeat our research. Given the relatively small sample sizes of much psychology research, the CIs of the effect sizes can be disconcertingly large and remind researchers that a simple effect size, or other point estimate, can suggest a precision that is not justified. Failure to report this variability does not make it go away but does expose those following up the research to dangers of misinterpretation.

Trafimow and Marks's (2015) solution to the banning of NHSTP and CIs is to require bigger sample sizes and the reporting of descriptive statistics with frequency and distributional data. In general, such information is welcome. However, the reason for the original development of NHSTP was that it is always necessary to decide whether or not to act in the future as if a real effect is likely. CIs of effect sizes give good guidance to such decisions, but it is not clear upon what evidence these fundamental decisions will be based if CIs and NHSTP are banned.

Another issue with demands for larger samples is that psychology researchers are inevitably faced with limitations through cost and time upon the number of participants that they can test. Resources devoted to doubling sample sizes for one study are not then available for new research questions. If the original sample size was, in fact, sufficient, there is a serious ethical and practical question of whether an unnecessary increase in sample sizes will do more harm than good to the future of psychology. How will one decide if the sample is large



TIM SANDERS

contribute

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Letters

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Robert Sternberg, Oklahoma State University

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enough? Given that the purpose of larger samples is to increase the precision of the estimates, reporting that precision should be required, rather than forbidden. Until there are alternative and generally accepted means of answering the question 'Could the effects have arisen by chance?', we recommend reporting CIs and, where researchers find them helpful, NHSTP.

Peter Morris, Catherine Fritz, Graham Smith, Amar Cherchar, Robin Crockett, Chris Roe, Roz Collings, Kimberley Hill, David Saunders, Martin Anderson and Lucy Atkinson

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Editor's note: Graham Smith and Peter Morris's article 'Building confidence in confidence intervals' is scheduled to appear in *The Psychologist* in June.

I've recently read of the abolition of p-values by the journal *Basic and Applied Social Psychology* (BASP) (Woolston, 2015). Whilst there are clearly issues with the misrepresentation or misunderstanding of what p-values mean, it seems a little radical to eradicate them altogether. Unfortunately even within the intellectual arena where we are encouraged to apply more scope and think less in terms of black and white, there still exists a bivalent division of opinion on null hypothesis significance testing (NHST). The fact is that NHST is not a bivalent issue and therefore the energy expended on only arguing either way is wasted.

Contrary to that which is often implied – at least within the social sciences – the p-value doesn't exist as an instruction to accept or reject the null hypothesis, but rather advises us on how seriously to take the data that we have analysed. Yes, the p-value tells us how likely our data is to occur under the null hypothesis, but it is not statistically strong enough to stand as a lone witness to the alternative hypothesis – It stands or falls conditionally on associated variables (e.g. effect size, sample size). Elimination of the p-value from BASP is a prime example of bivalent, simplistic thinking. Although I feel that I'm merely stating the obvious here, would it not be far better to insist that articles must feature sampling statistics, effect sizes and confident intervals alongside p-values; moreover why not insist on a lower alpha value, say $< .01$?

A 'smear campaign' against the p-value implies that use of the statistic has been noted as problematic and the knee-jerk reaction is 'Let's get as far away from this as possible'. This isn't the logical, measured approach that we should expect from those we rely on to publish our studies and review our submissions, but more comparable to the spin-doctor response that is often so glaringly obvious within the political arena! Given that most brain-related research seems to suggest that the most efficient and powerful result is derived from a combination of several elements working together toward a common goal, it seems surprising that we have missed this analogic lesson when addressing our use of statistical analyses – why not argue for all ways, used together, correctly?

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Increased training costs

I was appalled to learn recently that our Society has hugely increased fees for the Health Psychology Stage 2 qualification to a flat rate of £5995. Previously completing in two years cost £2421, three years cost £3154, and four years cost £3888. As the average completion time is three years, this represents a mean increase in fees of 90 per cent at a time when inflation rates are negligible. The service provided for this fee is minimal and consists of tasks such as ratification of training plans and arranging the examination. Trainees will still need to pay additional and considerable supervision costs.

I have been offered a range of explanations. These have included the fact that trainees have been previously encouraged to complete their training quickly to avoid annual fees; that fixed fees is the fairest approach; that fee rises ensure sustainability of qualifications, and that the BPS will now facilitate access to online journals and e-books via the University of London.

I have significant concerns about the decision of the Trustees. Most importantly, I feel the likely outcome is simply that fewer psychology graduates will pursue a career in applied psychology in those areas that do not receive public funding and where career opportunities are less certain post-qualification. This is hardly an ideal outcome for a charity that aims to promote and develop our profession.

The new cost will probably prove prohibitive to individuals and to organisations keen to pay fees, as £6K means creating trainee posts will become less attractive. For

example, over the course of a two-year project the cost of an Agenda for Change band 6 trainee health psychologist with only seven hours of 8A workplace and coordinating supervision per month (in reality considerably more is provided) is about £76K. For an additional £4K an organisation could employ a full-time, qualified band 8A who would arrive with greater skills and considerable lower supervisory needs.

Moreover, at an individual level, a single fee will not reflect accrued costs and penalises people who complete more quickly. Whilst some may find it beneficial to have access to University of London resources, others can access their local university or alma mater either free of charge or for a small fee of about £30 per annum, and NHS employees have access to considerable library resources.

One of the most striking aspects of my communication with our organisation about this has been the lack of openness, transparency and lack of debate about such a fundamental issue. For example, I requested details about training costs and was informed that this is confidential information. This seems odd because one way or another, the Trustees represent the membership and this is hardly commercially sensitive information.

If as an organisation we subsidise anything, then my view is that it should be our early career colleagues, but instead we seem to be using them to generate resource.

Dr Andrew Keen

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Jane Smith, BPS Director of Qualifications and Standards, replies: The move to a new, single-fee structure for the Society's suite of Stage 2 qualifications has been controversial. There are two related issues.

First, for many years our qualifications have been charged on a 'pay-as-you-go' basis, with candidates paying an enrolment fee,

an annual maintenance fee for each subsequent year on the programme, a fee each time they submitted work for assessment and a fee for any required reassessments. This meant that candidates never knew how much it would cost them to complete a qualification, especially as fees were revised each year in line with inflation. It also encouraged candidates to complete their training as quickly as possible to avoid paying annual fees. Indeed, there were examples of people wishing to submit for assessment but being unable to do so because of the associated costs. Unlike universities, we do not have a fixed 'course' length and we do not differentiate between full- and part-time students, as this is impossible to do with work-based learning programmes. A single, fixed fee with an open end date therefore seems the fairest approach to take.

Second, our fees policy has always been to ensure that the qualifications cover their costs. Over the years, with changes in the structure of our qualifications and in the number of candidates on each qualification (especially as the number of alternative programmes offered by universities has increased), it was no longer the case that each qualification was sustainable in its own right. When moving to the new structure, the fee for each qualification was calculated to ensure that it covered the full costs of delivery for that qualification. This has led to a re-balancing between qualifications and, in the case of Health Psychology, does mean that new candidates are paying more

than they would have done under the previous system.

The Trustees explicitly considered the policy of requiring qualifications to be self-supporting. It decided that qualifications are offered as an individual member service and as such it would not be within the Society's charitable objective to subsidise them from other sources of income. However, for those candidates in difficult financial circumstances, the Society can – and does – offer significant discounts on its fees, taking individual circumstances into account. We have also ensured that candidates can spread the cost of the qualification over several years, to avoid the need for a large up-front payment.

The new structure is therefore designed to ensure that each qualification is sustainable and that the costs of completing a qualification are more transparent to candidates and employers at the point of enrolment. The new system will also be significantly less bureaucratic than the old, which required multiple invoices over the course of a candidate's enrolment. Freeing up staff time will allow us to focus on further improving the service we provide to candidates. We have made strides in recent years with the introduction of supervisor and candidate workshops, online forums for candidates and, more recently, a new service enabling candidates to access academic resources through the University of London's Senate House library, but there is much more we can and will do in the future.

Tattoo regret

Waiting with the herd of parents at the school gates, I overheard a discussion about painful and expensive tattoo removal. The conversation spread like a contagious therapy session, more wounded men and women came forward; and scars were being shared. It wasn't the first time I'd heard people in their thirties and forties discussing 'tattoo regret', an area that requires more investigation.

Tattoo removal may be a booming industry, yet so still is tattooing, particularly with under 25s. More young people than ever are having tattoos. Tattoo regret looks certain to rise in correlation.

Getting a tattoo that you later regret may just be part of being young. The prefrontal cortex, a part of the brain responsible for planning ahead and risk taking (Blakemore & Mills, 2014), is not fully developed until around 25-years-old, so behaviour later viewed as foolish or risky can be considered typical. And, of course, the influence of celebrity is significant on this age group; a tattoo offers the opportunity to mimic, to belong; therefore, become cool too. Young people are merely pursuing Carl Rogers' 'ideal self.'

I asked some of the parents for their reasons for removal. Some were thinking about the example to their children; others no longer liked tattoos and were fed up with covering up; some worried



about perceptions of employers and colleagues; others were disappointed with the art they'd chosen, which had often dated. Fashion is impermanent; the idea of a fashionable tattoo is a paradox. Whether it be a dolphin on the shoulder, barbed wire around the triceps, or a full tattooed sleeve, either fashion or your own psyche moves on.

There seems to be more than a hint of self-dissatisfaction inspiring many tattoos. Statistically, people with tattoos are more likely to have self-harmed (Stirn & Hinz, 2008), often saying they had previously had a bad relationship with their body or that a tattoo was a way of getting over a negative event.

For those seeking attention tattoos certainly induce reaction, be it praise or disdain; drawing the eye to youthful skin, often erotic areas of the body. But is attracting attention, the same as being attractive? People with new tattoos report

feeling more attractive, but what happens when the eyes are drawn to skin that is no longer youthful or to a body no longer in shape?

The blandest of walls and ugliest of buildings are more likely to be a magnet for graffiti than the chiselled ornate stone of an ancient church or temple. It is rare too for Mother Nature's designs to be attacked. Nobody thinks trees require added art. It is also rare to attack pets with a spray can; we seem happy with how evolution intended them. Yet our own bodies do not appear safe from artistic modification. Maybe when we fail to see any beauty or worth we feel the design could be improved.

For many people a tattoo is a youthful demonstration of self-expression that they stand by throughout their lives. For others, tattoo regret can be the symptom of psychological progress, as life experience develops identity and self-worth. Few events affect this more than becoming a parent. Perhaps this is the true age of tattoo regret.

Peter Sear

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Consciousness complexity

I should start by saying that I am extremely sympathetic to Jessica Bockler's view, as presented in her letter 'A misleading juxtaposition' (April 2015). There are many unnecessary lines being drawn in psychological research, and the most popular one made between the conscious and the unconscious is, on closer inspection, only feebly supported in empirical evidence. So, there may in fact be a touch of the *argumentum ad hominem* in Bockler's letter, for the following reasons.

I too have been arguing that the modern distinctions being drawn between conscious and unconscious mechanisms in the domain of reasoning, judgement, decision making, learning and problem solving reflect a false dichotomy (Osman, 2004, 2010, 2013, 2014). Not only does the distinction misrepresent the rich range of phenomena that psychologists study by boxing them into category X or Y, the dual-process framework that is built around it can only offer a neat and enormously broad classification system that describes differences, but not much more than that. This clearly is a limitation, since while theory is designed to offer descriptions and explanations – which dual-process frameworks do – crucially theory should generate new predictions – which dual-process frameworks struggle to do.

As to the empirical side of things, is there still a role for the unconscious in reasoning, judgement, decision making, learning and problem solving. What I have been arguing here is that we need to return to basics by considering the reliability and validity of the methods used to examine the unconscious in cognition. Thus far what we have is a considerable body of research that either fails to meet one or both of these essential

empirical criteria for theory building (Osman 2004; 2010, 2013, 2014). In fact, the replication crisis in psychology indicates just how significant a problem we face in establishing our empirical foundations, particularly with regard to the involvement of the unconscious in our cognition.

This doesn't rule out a place for the unconscious or dual-process theories, only that as they are currently conceptualised, they fall short of standards the community has set. To end, yet again, in absolute agreement with Bockler's view, what we do face is a dynamic and complex world, and the nature of our cognition is in turn complex and dynamic. The interplay between the environment we are in and how we act and react to it is where psychologists have often looked in order to best understand human behaviour (Osman, 2010, 2014). Throughout the history of psychology this is where the most significant advances in theory and practice have been made.

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FORUM SURVIVAL GUIDE

Anyone who has a PhD will remember that first moment when someone addresses you as Dr. Although you have spent years of your life earning that doctorate, it comes as an initial shock. After a while, though, it becomes not only familiar but expected. Indeed, you may feel demoted if somebody refers to you as Ms or Mr. For many academics, the next moment of joyous transition is when you make it to the pinnacle of being called Professor.

Last year, Dr Tom Hartley of the University of York carried out a fascinating little survey of modes of academic address in e-mail (see <https://thermaltoy.wordpress.com/2013/01/26/dr-who-or-professor-who-on-academic-email-etiquette/>). This was initially stimulated by a discussion on Twitter about whether it was appropriate for a potential PhD applicant to start an e-mail to a UK Professor with 'Hey Rebecca!'. The general view was that it was not. Though I have to say it is better than 'Esteemed Madam Mrs Professor Dorothy', which was how one recent e-mail started. It is easy to laugh at these things, but the sad part is that the sender clearly has nobody to tell them about appropriate modes of address.

However, Tom's survey turned up another intriguing fact of which I had been unaware, concerning UK vs. US differences. It turns out that in the UK, once you are a Professor you expect that title to be used in formal communications. In the US, though, 'Professor' has the connotation that you are a student addressing a teacher, and the title 'Dr' is deemed more appropriate for a senior member of a university, recognising their academic qualification.

It is fascinating how much is bound up with this terminology. Until I read Tom's post, I had been puzzled when I got e-mails from the US, starting 'Dear Dr Bishop'. I tended to assume they just did not know my proper title. No doubt my e-mails in the other direction to 'Dr Professor X', had elicited similar bafflement at my crassness.

Gender can make these issues all the more complicated. One of Tom's respondents commented: 'I am happy with being called Ms, though it suggests a lack of research into my real title, but I get very annoyed at being called Miss or Mrs because it seems to me to be a form of disrespect for my hard won qualifications. In some cases, when done by men of a certain age, I suspect it is deliberate denigration, as if they cannot cope with the idea of a female full professor.'

This issue came to a head recently when people on Twitter noticed a piece in the *Wall Street Journal* (tinyurl.com/pm2uyoe) by Raymond Tallis reviewing books by Susan Greenfield and Norman Doidge. Susan Greenfield (who is Dr, Professor and Baroness) was referred to as 'Ms' Greenfield whereas Doidge (who is Dr and Professor) was referred to as Dr Doidge. People leapt upon Tallis, assuming he was being sexist. They should have noticed, though, that he himself (both a Dr and a Professor) was referred to in the piece as 'Mr Tallis'. Unfortunately, as he explained, it is a weird stylistic convention of the *Wall Street Journal* to restrict the title 'Dr' to MDs, so even a UK medic doesn't qualify.

I was irritated enough to write to the editor concerned to ask that they reconsider this convention. For anyone with a PhD to be referred to as Mr or Ms in an article seems to reflect at best ignorance in the writer, and at worst deliberate insult. This problem is compounded if titles are recognised for some individuals but not others. The response I got did not give me any optimism that the venerable *Wall Street Journal* will reconsider its policy; they seem to regard tradition as more important than clarity and avoidance of offence.

Dorothy Bishop is Professor of Developmental Neuropsychology and a Wellcome Principal Research Fellow at the Department of Experimental Psychology in Oxford. This column aims to prompt debate about surviving and thriving in academia and research.

FORUM SPORTING LIFE

Stumped by the big numbers

England's exit at the group stages of the recent Cricket World Cup has reopened speculation about the organisational aspects of effective teams. It has been mooted that playing for England in a climate of constant screening and data analysis places unsustainable demands on players and curbs individual flair. While it is difficult to comment on any particular team from the sidelines, the possible side-effects of micro-management in modern sport are worth exploring.

The pertinent question, given that the number of support staff in most professional sports teams has increased vastly in the last decade, is whether the merits of such an approach outweigh the potential issues. It is undeniable that the sport science era has greatly enhanced sport physiologically and technically; so why might players be disgruntled?

Increasing support staff (e.g. technical coaches, strength and conditioning experts, data-analysts) may be problematic for many reasons. As in all working environments, disagreement with management is the principal source of unhappiness. Put simply, the greater number of staff increases the likelihood of this. Secondly, needing to impress a wider circle of coaches can increase pressure on players. Apart from being observed more, it increases the number of professional interactions in a day and thus emotional labour. Thirdly, staff may compete for time and attention – which can frustrate players. Finally, repeated exposure to coaches can exaggerate the possible pitfalls present in all learning environments, namely, habituation or dependence.

It is often posited that discontent amongst athletes stems from the modern preoccupation with data. The concept, 'you can't manage it if you can't measure it' is as prevalent in sport as it is in the likes of business and education. Data *per se* is not a problem – athletes have always collected information about opponents (Jardine apparently studied footage of Bradman prior to the 'Bodyline' series in 1932). The issue is that, if not used skilfully, it can lead to a form of premeditation that contravenes the moment-by-moment decision making required in sport. Leadership in action (i.e. tactical flexibility in performance) is a facet of sport that must continue to be valued, or our athletes' development as people and performers will be stunted. A further issue regarding data usage relates to flow and peak performance. Literature suggests that such experiences are derived from joy, freedom of expression, and clarity (absence?) of thought. Data could certainly assist this clarity, but without care it might also obfuscate.

As part of support staff, psychologists must emphasise that athletes are not machines. Management that does not consider the wider psychological issues of mental fatigue, individual differences, flow and empowerment is fatally flawed. Athletes won't be stimulated by the environment and, in time, will be found wanting in competition.

Questions:

How has the sport psychologist's role at the elite level changed over the past decade due to the growing role of data analysts?
Have sport psychologists noticed a decrease in athlete enjoyment in the modern era due to increasing sport science demands?
Have psychologists felt pressured to produce data in such environments, where observation and interaction might be more effective?

Alastair Storie is a former professional cricketer and a Chartered Psychologist and runs the company Performer Consulting. Share your views on this and other sport psychology issues – e-mail psychologist@bps.org.uk.

What has neuroscience done for psychotherapy?

I want to thank Jon Roiser for demonstrating the promise that neuroscience holds for mental health practice ('What has neuroscience ever done for us?', April 2015). However, I feel that more could be said about what neuroscience offers psychotherapy given the large proportion of readership either personally or professionally involved in this.

Jon argued that in order to enhance the treatment of mental health problems, we need to understand the neural basis of symptoms. He referred to the neural circuits underlying symptoms as proximal mechanisms because they directly cause symptoms. At the other end of the spectrum, distal mechanisms, such as personality and upbringing, indirectly shape symptoms. This view is undoubtedly useful as it integrates neurobiological and psychosocial frameworks. However, by specifying the neural circuits underpinning symptoms, we remain at a descriptive level, which may not further psychotherapies.

What difference does it make knowing that fixated thinking and stereotyped actions are represented by cortico-basal ganglia circuits in obsessive-compulsive disorders? The target of exposure interventions remains the same. We thus need to go beyond the 'How' and ask 'Why?' Imagine a car breaking down due to over-revving. We could change the damaged parts of the engine (neural circuits) but we would neglect the underlying cause: the driver's over-revving habit (underlying emotional conflict).

So should mental health professionals still care about neuroscience? I argue that we can advance psychotherapy by understanding how the brain internalises distal mechanisms, particularly negative

psychosocial experiences. Assuming that the consequent emotional conflicts underlie symptoms that are adaptations to these conflicts, can we reshape or even erase conflicts to ease a client's suffering? Bruce Ecker and colleagues claim to have achieved this by applying the principles of reconsolidation to psychotherapy.

Reconsolidation describes how consolidated, or stable, memories can be modified during their reactivation (Tronson & Taylor, 2007). By identifying and experiencing the implicit memory or conflict-driving symptoms and concurrently experiencing something that sharply contradicts the memory's expectations, we can overwrite the conflicting memory with an adaptive one (Ecker et al., 2012). Repeating this procedure is argued to deliver profound cessation of symptoms. Despite several laboratory studies in humans demonstrating the erasure of fear learning, clinical trials are needed to assess the validity and utility of this approach.

Of course, both the neural mechanisms that relate to symptoms and those that drive them need therapeutic intervention: residual proximal mechanisms may ignite newly developed conflicts. However, there is no reason why distal mechanisms are not represented by neural circuits, given that 'the brain is the interface at which genetic and environmental influences interact'.

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A straightforward interview

How refreshing to read the interview with Sergio Della Sala and his straightforward responses (April 2015). As a wannabe neuropsychologist I often come across references to, 'use it or you'll lose it' and comments such as 'listening to Mozart will improve cognitive functioning' in both my clinical work and social life when my area of work is revealed. Only the other day I gently disputed an article saved for me from one of the Sunday papers. I don't pretend to have an in-depth knowledge of neuroscience and the workings of the brain, but Della Sala helpfully reminded that it is, of course, complex and 'discussions about the functioning of the mind [can't be] reduced to slogans or simplistic concepts'.



My favourite part of the interview was the assertion that 'playing computer games...won't do us any better than seeing friends, enjoying a walk or doing crosswords' – indeed, one of my most effective clinical interventions was giving a former acquired brain-injury patient permission to stop daily brain-training practice! This game, prescribed by a well-meaning case manager, had been increasing her anxiety and providing a stark daily dose of failure, neither of which was conducive to her rehabilitation.

Dr Hayley Entwistle
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NOTICEBOARD

I am a postgraduate student at Coventry University and am currently completing my empirical research for my MSc. In order to do this I need to recruit participants to engage in the study. My research aims to understand the experience of **psychologists who are employed as expert witnesses** in terms of how they feel they are viewed as a source of evidence. The study would involve a telephone interview. If you are interested in taking part, please contact me.
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EDUCATIONAL IMBALANCE

As educational psychology trainers in Newcastle, we have noticed over the years that there is a significant demographic imbalance in our applicants and in those who undertake the programme. This is shown most starkly for us in the preponderance of white females among those interviewed and entering the programme and then the profession. We are intrigued and somewhat puzzled as to why this is so, and wonder if any demographic imbalance has been noted elsewhere across the discipline.

We would be interested to hear of others' experience and thoughts on the matter – is it a concern for others?

Billy Peters, Dave Lumsdon, Richard Parker, Simon Gibbs and Richard Parker
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Autism confusion

I am confused by two recent letters (April 2015) about the importance or otherwise of an autism diagnosis. Both Professor Rita Jordan (also Letters, February 2015) and Dr Waseem Alladin seem to agree that service provision should be based on individual need, a view substantially similar to that expressed by Graham Collins (Letters, December 2014 and March 2015), with whom both nevertheless take issue. Dr Alladin also argues that a diagnosis is an important precursor to treatment planning. In contrast, Professor Jordan states that 'diagnosis is a poor determiner of services'. So what exactly does an autism diagnosis add?

Both evidently agree that complex social deficits are distinctive of autism. Dr Alladin also cites DSM-5 as a diagnostic guide. However, DSM-5 specifies two possible and distinct diagnoses in this context – 'autism spectrum disorder' and 'social-communication disorder'. The DSM is explicit about the difference: the individual

must also display restricted or repetitive behaviours or interests to justify an ASD diagnosis: so apparently this is what is really distinct about autism. Either complex social deficits are *not* uniquely characteristic of autism or the DSM has got it wrong.

However, Professor Jordan questions the reliance by diagnostic systems on behavioural symptoms, arguing that we should somehow go beyond these in considering autism. But how could we devise a reliable diagnostic system without using behavioural indicators? How else could we ever agree about the unique social deficits of autism, or even whether there are any?

Yet diagnosis apparently does matter. I know from my own clinical experience that valuable support services may be reserved for children with a formal diagnosis, while others with equal needs often miss out. There will inevitably be pressure, often from parents, for clinicians to assign

diagnoses for a condition with no determinate biomarkers. One can ask whether it is right that services be allocated this way, particularly when it seems so difficult to specify what exactly constitutes the unique features of autism. Whilst it may be commendable for advocacy groups to campaign for dedicated services, this has surely contributed to widening the boundaries of autism and the so-called 'autism epidemic'. This perhaps exemplifies Hacking's (2015) argument that activists have even shaped our *understanding* of autism. Where is the difference between having autism and having a diagnosis of autism?

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Reference

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Sorcery with words

I have read with much interest the article 'Words and sorcery' by Simon Oxenham and Jon Sutton (March 2015). I believe that writing is a talent and for those who need to learn how to do it, the process is long, tough and made up of several trails and exercises. As an undergraduate student, the aim of our essays, lab reports and coursework is generally to convey a clear, concise, coherent message about a certain topic with a critical point of view. It is also important to explain the main concepts through the use of an accurate style and to define jargon and psychology terms as well.

The suggestions and tips that I have read in Oxenham and Sutton's article are extremely useful, and I have noticed some similarities with what our professors taught us – taking time to construct your work, thorough researching references that may help us to better understand the topic we have to write about, and

building a logic and objective argument. Sometimes, even reading badly written articles might be an effective technique to understand what we, as students, have to avoid doing.

Here, I would like to share some articles and books that I find fascinating and wonderfully written.

It is hard to choose only few papers among all those that have been published in these years, and therefore I have selected my own favourites. The article 'The construction of autobiographical memories in the self-memory system' by Conway and Pleydell-Pearce in *Psychological Review* (2000) is a brilliant work; Loftus and Palmer's 1974 study in the *Journal of Verbal Learning and Verbal Behaviour* 'Reconstruction of automobile destruction: An example of the interaction between language and

memory' about false memories and how they can be formed is fascinating, and I remember I enjoyed reading it when I had to do a lab report related to this concept; then, Kapur et al.'s 2005 paper

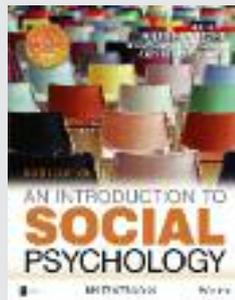


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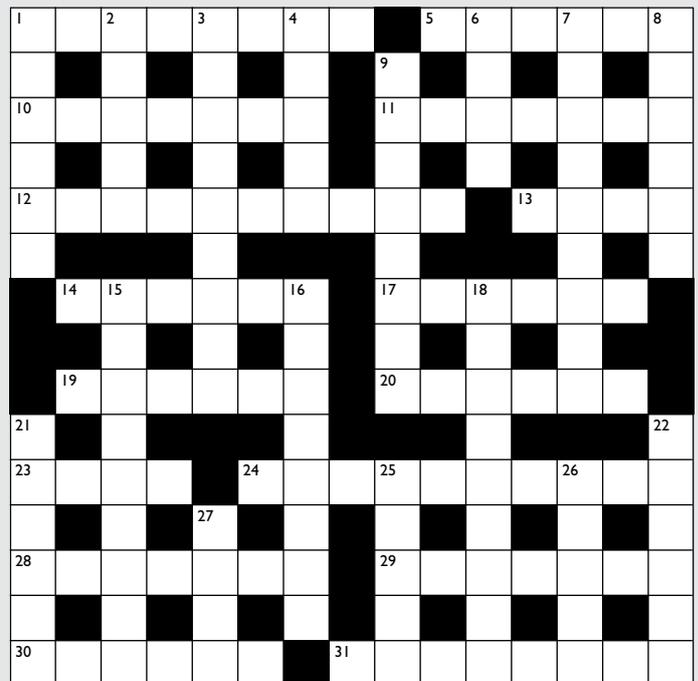
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no 80 solution Across 1 Reflex reserve, 8 Often, 9 Ape, 10 Tense, 12 Croquette, 13 Pluto, 14 Mayfair, 15 Tempest, 17 Raiment, 20 Burette, 22 Zloty, 24 Appealing, 25 Roald, 26 Lei, 27 Irish, 28 De Clerembault. Down 2 Entropy, 3 Lingulate, 4 X factor, 5 Element, 6 Estop, 7 Venture, 8 Occam's razor, 11 Ego strength, 16 Margarita, 18 Isolate, 19 Trailer, 20 Baptism, 21 Trivial, 23 Yodel.

in *Schizophrenia Research* 'From dopamine to salience to psychosis – linked biology, pharmacology and phenomenology of psychosis' is in my own opinion a hallmark in the schizophrenia research field – it is written in such a way that the major complex concepts are clearly explained and can be understood also by non-professional individuals.

Finally, in terms of books, *The Man Who Mistook His Wife for a Hat* (1985) and *Musophilia* (2007) by Oliver Sack are both masterpieces that I would recommend to everyone. Sack's books are a journey into the fragile human mind, and through his style he enables the reader to understand the processes and implications underlying neurological and clinical disorders in a clear, engaging and touching way.

Sarah Pisani

*Psychology undergraduate
City University London*

Thank you for including my response alongside the three other responses (April 2015) to your article 'Words and sorcery' (March 2015). I particularly enjoyed the response from James Hartley, especially when I discovered that my response's Flesch count (46.3) was within a smidgeon of his (47.8). Will you warn future contributors 'Under 30 not admitted'?

A further thought: What a pity you did not quote the opening paragraph of Karl Wiggins's poetry collection *Words Are Our Sorcery* (2014):

'Words are the writer's sorcery, our dark arts and our sleight of hand. They're our enchantment and our temptation. Words flow around my brain, pulsating and swimming, knocking into one another until I can finally ambush them and leak them out onto the page. This, believe it or not, is how I write. Sometimes I overindulge myself and it

gets out of hand, but that's how I like it, it's how I've ghosted some of my best creations.'

Is this what you had in mind when you wrote the title? Would you accept the 'ghosted creations' of we mere psychologists?

Joshua Fox

Hailsham, East Sussex

Editor Jon Sutton, co-author of the article, replies: I wish I could say that link was deliberate, but I wasn't aware of that piece! Instead, I chose the headline based on my desire for a painfully extended metaphor about fantasy lands, and for the anagram of 'sword' as in 'sword and sorcery'. The point in the article about falling on barren land is apt, given that even the Assistant Editor didn't pick up on that until about a month after publication.

across

down

- | | |
|--|--|
| <p>1 Capone's endlessly insane kept at prison (8)</p> <p>5 Drink by quiet river in Syrian city (6)</p> <p>10 Work without match official in clover (7)</p> <p>11 Altered dimension of glue solution with colourful coat (7)</p> <p>12 Psychiatrist's censure recorded for plastic film (6,4)</p> <p>13 Slight mumble (4)</p> <p>14 Measuring instrument limited one's occupation (6)</p> <p>17 Owing popular girl who's coming out on time (2,4)</p> <p>19 Confront back street aspects (6)</p> <p>20 Host of stars at charity event meeting unknowns (6)</p> <p>23 Crazy to take drug with alcoholic drink (4)</p> <p>24 Arranged in rows and columns as a clean slate (6,4)</p> <p>28 Forgetting that's been broadcast in cinemas (7)</p> <p>29 Primary sign (7)</p> <p>30 Sailors recline back to descend by rope (6)</p> <p>31 Overwhelm one sister on romantic engagement (8)</p> | <p>1 Ought, say, to take one's medication at first for developmental disorder (6)</p> <p>2 Encourage church, always poetically (5)</p> <p>3 Psychologist's side irritant over embankment, say (9)</p> <p>4 Softly lit with silver and blue (5)</p> <p>6 Shine after religious teaching's eradicated sin (4)</p> <p>7 Throw fight as part of 3's experiments (6,3)</p> <p>8 Arranges to follow marching? (6)</p> <p>9 Doctor, for example, admits a short time having night vision (8)</p> <p>15 With unease, gal transplanted shrub (9)</p> <p>16 Look again at study (8)</p> <p>18 Spotted canine wagging a tail? Damn! (9)</p> <p>21 Almost run through a graceful creature (6)</p> <p>22 Surety that is secured by Scottish magistrate (6)</p> <p>25 NUS, say, in college briefly - working (5)</p> <p>26 Largely savage inner self, to Jung (5)</p> <p>27 Hastily bottles wine (4)</p> |
|--|--|



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