



Transparency in peer review



Emily Jesper-Mir, Head of partnerships and governance
Sense about Science

Dr Riaz Agha, Managing and Executive Editor
IJS Publishing Group

Dr Richard D Morey, Reader
School of Psychology, Cardiff University

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Why public awareness of peer review matters

Why we started

**New evidence 'shows
MMR
link to autism'**

Daily Mail, 9th Aug 2002

**Kisses may lead
to cot death**

The Times, 24 Oct 2000

**Public says no to
pesticides**

Friends of the Earth, 19th June
2000

**Cleaning chemicals
'reach baby'**

BBC Online, 7th Sept 2005

**Fluoride water
'causes cancer'**

The Guardian, 12th June 2005

**Trials of GM crops bring
new fears of
'Frankenstein' food**

Daily Mail, 30th December 2002

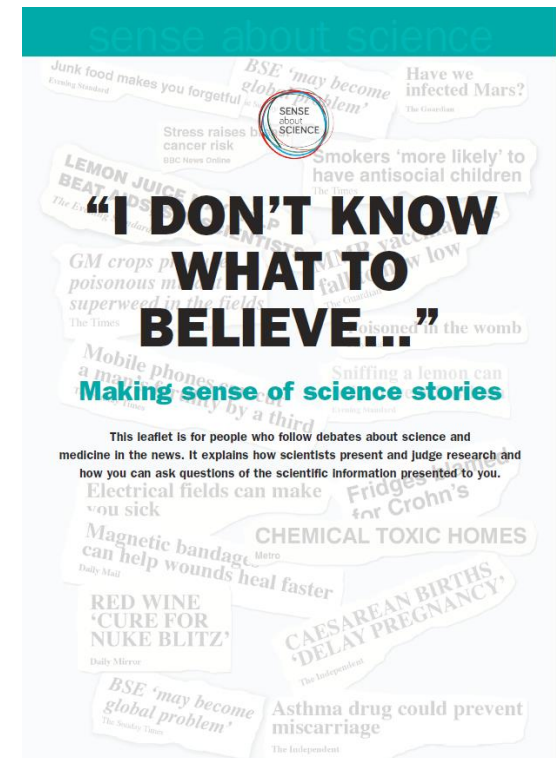
What people ask about

- Is it a scare story?
- What tests have been done?
- Who says it's safe?
- Is it a proper study?



Together, we have changed public perception of peer review

- Over **1/2 Million** copies of *I Don't Know What to Believe* downloaded internationally
- Influenced BBC editorial policy, civil service training and high school education
- Launched a US version, and translated into Chinese in 2013
- Wide media coverage



500,000+ copies requested to date

- News media
 - Press officers
 - Higher education
 - Teachers
 - Parliamentarians
 - Governments
 - TV programmers
 - NGOs
 - Medical charities
 - Health service
 - Companies
 - Policy groups
 - Community groups
 - Publishers
 - Discussion forums
 - Museums
 - Libraries
 - Celebrities
 - Lifestyle sector
 - Websites
 - Patient groups
- 

The background of the slide is a close-up photograph of numerous circular buttons. The buttons are arranged in a dense, overlapping pattern on a light-colored wooden surface. Each button features the text 'I ❤️ EVIDENCE' in a bold, sans-serif font, with a red heart symbol replacing the word 'love'. Below this text, the website address 'www.askforevidence.org' is printed in a smaller font. The buttons are primarily white, but there is a mix of colors including light green and light blue, creating a vibrant, textured background. A semi-transparent dark green rectangular box is centered over the buttons, containing the main text of the slide in white.

The next big transparency
challenge: Making sense of
patterns and data

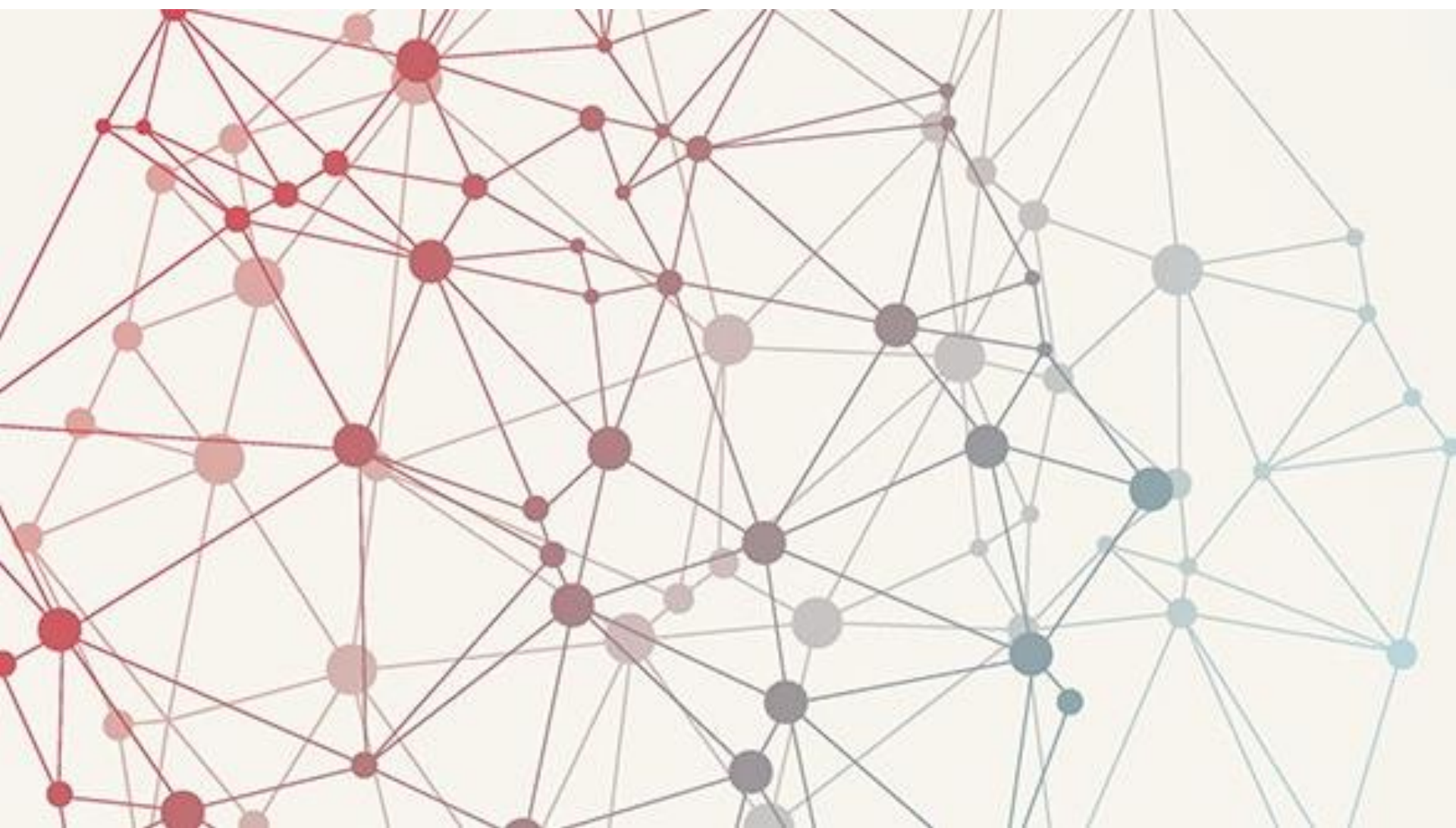
<https://cos.io/our-services/top-guidelines/>

THE GUIDELINES

Transparency, open sharing, and reproducibility are core values of science, but not always part of daily practice. Journals, funders, and societies can increase reproducibility of research by adopting the TOP Guidelines and helping them evolve to meet the needs of researchers and publishers while pursuing the most transparent practices.

8 MODULAR STANDARDS

Citation Standards Describes citation of data	Data Transparency Describes availability and sharing of data
Analytical Methods Transparency Describes analytical code accessibility	Research Materials Transparency Describes research materials accessibility
Design and Analysis Transparency Sets standards for research design disclosures	Preregistration of Studies Specification of study details before data collection
Preregistration of Analysis Plans Specification of analytical details before data collection	Replication Encourages publication of replication studies



'How should we read patterns and data'

- Help the public understand the opportunities provided by big data, the potential benefits and risks, and how responsible, transparent organisations mitigate those risks.
- Explain how patterns in data are spotted, and the potential to misread them – this happens all the time, the patterns are not visible to the naked eye.
- How big data can be misunderstood (and how to avoid that).

For transparency that matters to people:

Researchers CAN:

- Make sure peer review isn't your best kept secret
- Check, does the press release state whether it's peer reviewed research?
- Trust the public by clearly explaining research findings in human language
- Share the right questions for the public to weigh up data





www.senseaboutscience.org



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email@senseaboutscience.org

Emily Jesper-Mir

ejesper@senseaboutscience.org;

Publishing Peer Review Reports

A Breadth of Journals & Resources 2003-2017



13,000 papers submitted

5,500 papers published

70-75% is
original research

10 million downloads



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 RESEARCH REGISTRY

IJS Careers



Editorial

Peer-review developments at the IJS – publishing reviewer reports



The traditional process of peer-review for medical journals has been an integral part of the scientific process for centuries. Over the years however, the process has come under increasing scrutiny and criticism. Critics point to a lack of openness, accountability and transparency [1,2]. These are precisely the areas in which large parts of our society are making advances. On the 28th June 2013, approximately 3500 surgeons in the UK achieved a world first, publishing their individual surgical results [3]. In all, 99% consented to having their data published. This historic moment, followed the publication of named cardiac surgeon mortality data in 2005 by the Guardian newspaper following a Freedom of Information Act Request. This was followed by the launching of a publicly accessible website providing such data in 2006 by the Healthcare Commission and the Society of Cardiothoracic Surgeons of Great Britain and Ireland [4]. We vividly recall the debate at the time; surgeons will avoid taking on high-risk patients and that outcomes won't improve. A subsequent retrospective analysis of 25,730 patients undergoing Cardiac Bypass Grafting Surgery found that publication of results was associated with decreased risk adjusted mortality and that there was no evidence that higher risk patients were not undergoing surgery [5]. Today few cardiac surgeons think that such data should not be published. We must remember of course that the stimulus for publishing such data came from the Bristol Heart Scandal, a tragedy where the subsequent public inquiry called for the publication of performance data of both cardiac units and surgeons [6]. It is no surprise that today words like: governance, quality, outcomes, surveillance, audit and benchmarking permeate the surgical literature [7].

Changes are occurring in the law too. In the UK, the Freedom of Information Act 2000 entitles a member of the public to have information about them disclosed by a public body [8,9]. This seems progressive but in the USA, a similar bill was signed into law in 1966 [10]. Another powerful example comes from UK medicolegal law. The traditional Bolam test has been augmented by the Bolitho case i.e. a doctor is not guilty of negligence if a group of expert peers in the field would do the same thing – but that the basis of their opinion should be put forth and subject to logical analysis and scrutiny [11]. For the significant decisions that affect us as individuals and society at large, we expect to know who made them and the basis or logic for their decision. Drummond Rennie, the former Editor at JAMA and an advocate of open peer-review (where authors and reviewers identities are revealed) argues: “The editors, assisted by the reviewers, are judges ... we have an ample history to tell us that justice is ill served by secrecy.” [12] Lack of transparency can also affect the perceptions if not the reality; recent examples include the FIFA world cup bidding process and whether Iraq had weapons of mass destruction. Shining light on a process tends to improve it – be

it expenses claims by a Member of Parliament or phone hacking by the press.

Few of us though can recall a manuscript that was not improved through peer-review – so the fundamental process of having independent experts review one's work is sound. A randomised controlled trial looking at the impact of open peer-review, found that it did not increase review quality [13]. The authors still concluded that the ethical arguments in favour of open peer-review outweighed its disadvantages. However, our view is that this particular study was flawed in its design, especially if its aim was to assess whether quality would be improved. Of the reviewers invited to participate, 55% refused to take part – hence a self-selected group goes forward with a 50% chance of being randomised to the open peer-review arm – significant Hawthorne effects are likely to have biased the outcomes (people knew their review would be scrutinized and may have upped their game). A more appropriate design would be a *before and after* study [14].

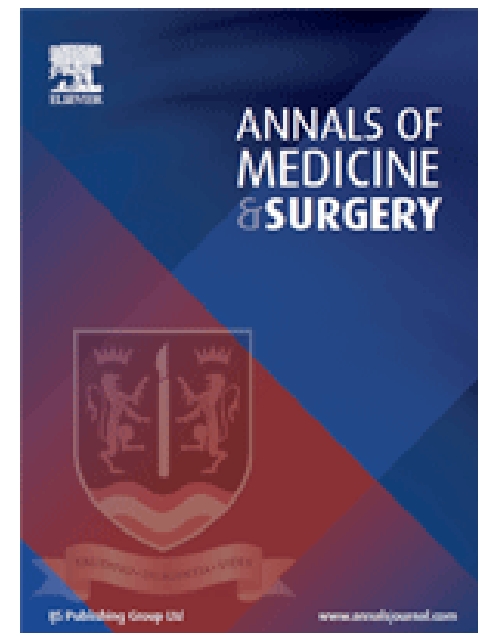
At the IJS, we have utilised a double blind peer-review system since our launch over a decade ago. We feel that the focus should be on the science and the surgery rather than the individuals who were involved. This system has worked well for us but we are continuously looking for areas across the journal that can be improved and we are relentless in this drive for quality. This philosophy is essential when respected commentators are stating that there is a scandal in medical research, that surgical research is a ‘comic opera’ and that there is a crisis in scientific peer-review [15–18]. At the nexus of all these concerns is the potential loss of confidence and trust of patients and the public in published research. Critical appraisal teaches us to scrutinize what we read, with open access liberating increasing amounts of content – surgery and science at large must raise its game.

We feel that peer-review at the IJS needs a shake-up with greater accountability, transparency and openness. So for manuscripts submitted in mid September 2014, we will be publishing the peer-reviews reports (from all rounds) along with the initially submitted and final versions of the manuscript, as well as any revisions along the way (as a one year trial). We will allow our peer-reviewers to make an important choice in this process – whether they wish for their name to be revealed once a manuscript has been accepted and published online. The default will be to remain anonymous and reviewers can opt-in to having their name revealed. This is a gradual yet significant foray into a more open system but still keeps the focus on the science and the surgery. We will monitor the impact of this change in a variety of ways, assessing both quality, participation, feedback and usage of reviewer reports.

Whilst this is an important step forward in terms of accountability, openness, transparency and potentially quality, we feel



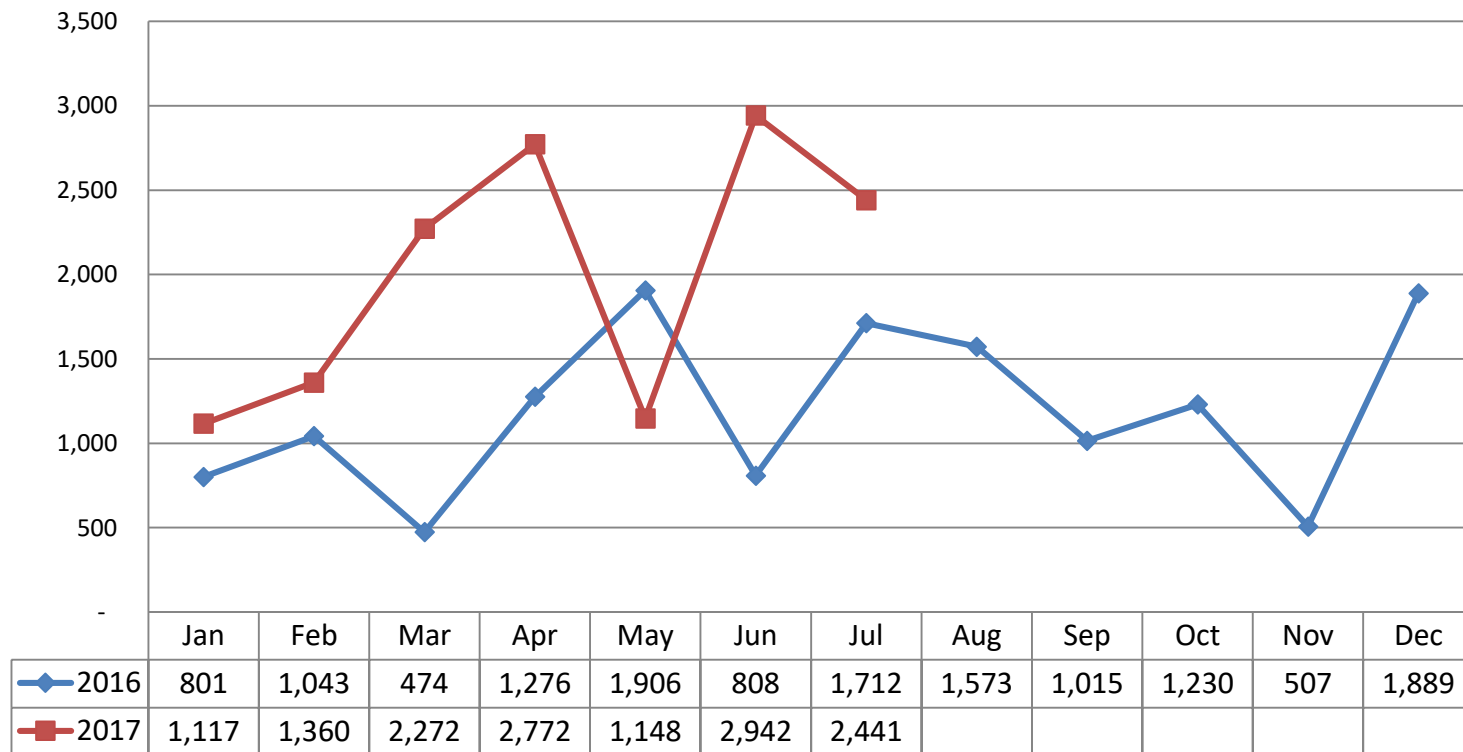
Annals of Medicine and Surgery



ScienceDirect: Review Supplements

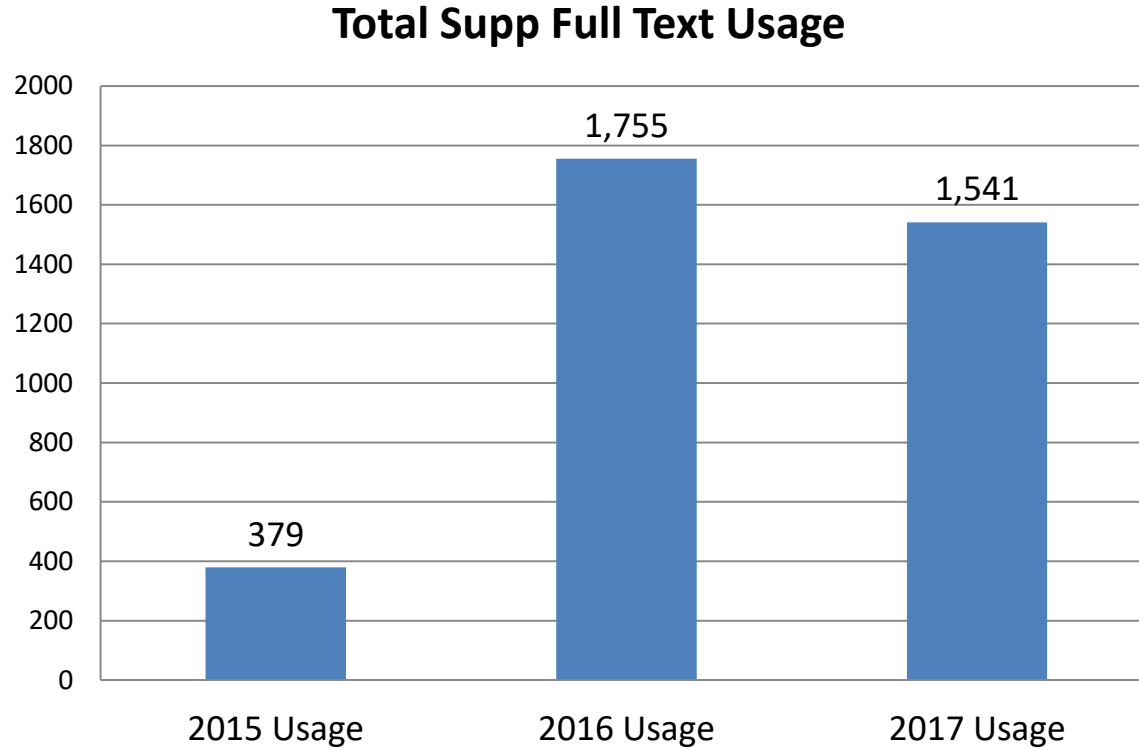
Total of:
Jan 2015 Vol 4 Supp
Jan 2016 Vol 5 Supp
Jan 2017 Vol 13 Supp

ScienceDirect Review Supplements Total Full Text Requests



HA/JBS: Supplement Full Text Requests: Usage Per Year

Total of:
Jan 2015 Vol 4 Supp
Jan 2016 Vol 5 Supp
Jan 2017 Vol 13 Supp



ScienceDirect: Top 10 articles for Review Supp Jan 2015 Vol 4

Usage from Jan 2016-Jul 2017

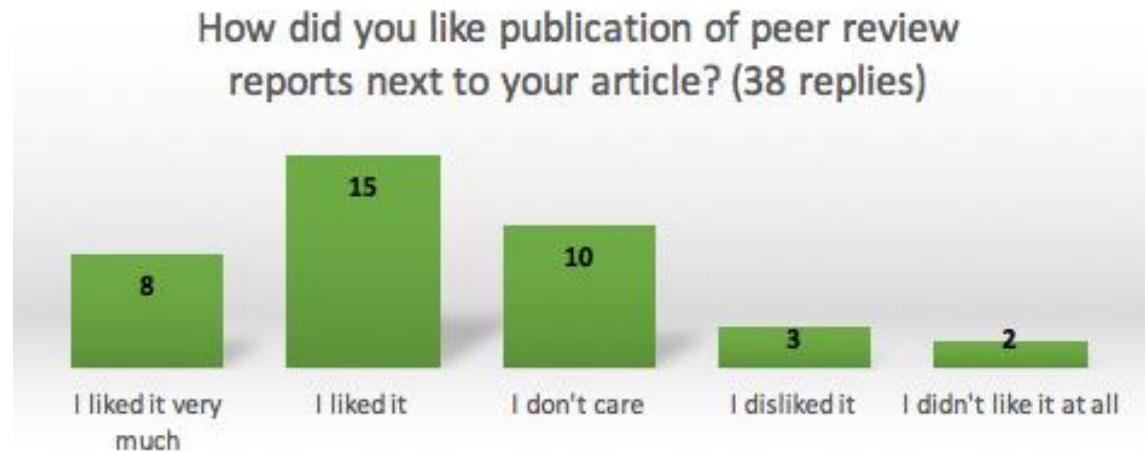
Article title	Online date	Total
Peer review report 1 on "Management of intestinal obstruction in advanced malignancy	12/20/2015	220
Peer review report 1 on Attitudes towards the Surgical Safety Checklist and factors associated with its use: A global survey of frontline medical professionals	4/24/2015	152
Peer review report 1 on ENCAPSULATING PERITONEAL SCLEROSIS AS A LATE COMPLICATION OF PERITONEAL DIALYSIS	4/24/2015	145
Peer review report 1 on A UK perspective on smartphone use amongst doctors within the surgical profession	4/24/2015	138
Peer review report 1 on "Large cell neuroendocrine – Adenocarcinoma mixed tumour of colon: Collision tumour with peculiar behaviour. What do we know about these tumours?	12/20/2015	137
Peer review report 1 on "Role of HLA typing on Crohn's disease pathogenesis	12/20/2015	136
Peer review report 1 on "Swallowed dentures: Two cases and a review	12/20/2015	132
Peer review report 1 on "Lower extremity necrotizing fasciitis: A unique initial presentation of Crohn's disease	12/20/2015	127
Peer review report 1 on "Laparoscopic versus open surgery for colorectal cancer in the older person: A systematic review	12/20/2015	125
Peer review report 2 on "Arthroscopic treatment of synovial chondromatosis of the shoulder: A case report	12/20/2015	120

ScienceDirect: Top 10 articles for Review Supp Jan 2016 Vol 5

Usage from Jan 2016-Jul 2017

Article title	Online date	Total
Peer review report 2 on "How to approach supervisors for research opportunities"	2/5/2016	417
Peer review report 1 on "How to approach supervisors for research opportunities"	2/5/2016	274
Peer review report 1 on "Pharmacogenetics and anaesthetic drugs: Implications for perioperative practice"	1/25/2016	179
Peer review report 1 on "How to make an academic poster"	12/2/2016	164
Peer review report 2 on "An audit into the management of chronic anal fissure"	1/25/2016	157
Peer review report 1 on "Role of microRNAs in carcinogenesis that potential for biomarker of endometrial cancer"	3/17/2016	154
Peer review report 1 on "An audit into the management of chronic anal fissure"	1/25/2016	153
Peer review report 2 on "A cost-minimization analysis of first intention laparoscopic compared to open right hemicolectomy for colon cancer"	1/25/2016	148
Peer review report 1 on "Clinical audit of ankle fracture management in the elderly"	2/5/2016	140
Peer review report 2 on "Is cold therapy really efficient after knee arthroplasty?"	1/25/2016	139

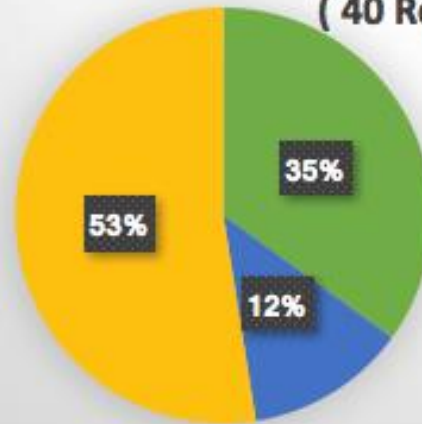
Feedback in 2015



- 61% liked it or liked it very much
- 13% disliked or didn't like it at all

Feedback in 2015

**Does this change in policy influence your decision
to publish in Annals of Medicine and Surgery?
(40 Replies)**



- That makes it more likely for me to publish in this journal.
- That make it less likely for me to publish in this journal.
- This policy will have no influence on my decision where to publish.

International Journal of Surgery



ScienceDirect: Review Supplements

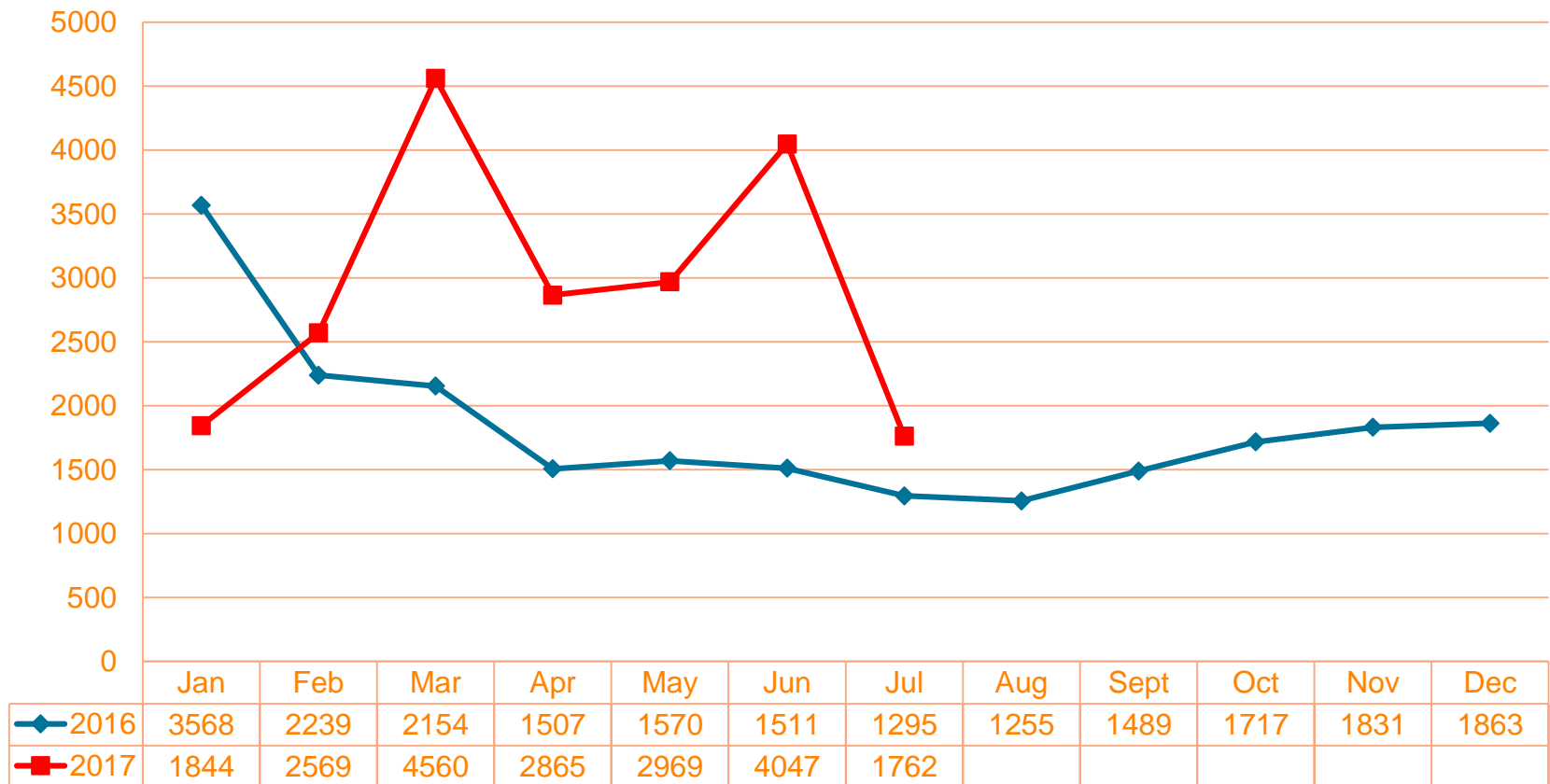
Total of:

Jan 2015 Vol 13 Supp

Jan 2016 Vol 25 Supp

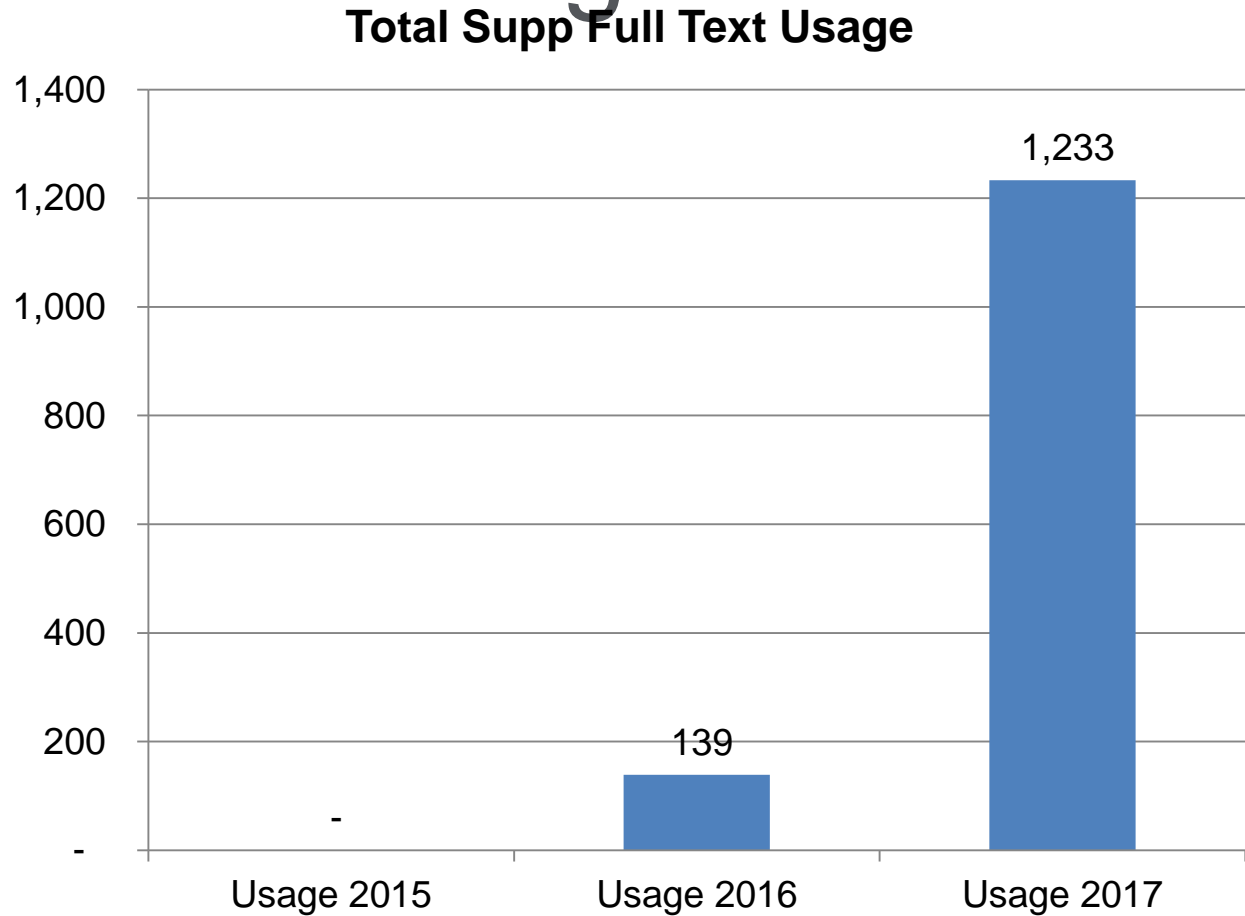
Jan 2017 Vol 37 Supp

ScienceDirect Review Supplements Total Full Text Requests



HA/JBS: Supplement Full Text Requests: Usage Per Year

Total of:
Jan 2015 Vol 13 Supp
Jan 2016 Vol 25 Supp
Jan 2017 Vol 37 Supp



ScienceDirect: Top 10 articles for Review Supp Jan 2015 Vol 13

Usage from Jan 2016-Jul 2017

Article title	Online date	Total
Peer review report 1 on "P53 suppresses cell proliferation, metastasis, and angiogenesis of osteosarcoma through inhibition of the PI3K/AKT/mTOR pathway"	04/30/2015	175
Peer review report 1 on "Early implementation of Enhanced Recovery After Surgery (ERAS®) protocol – Compliance improves outcomes: A prospective cohort study"	09/08/2015	163
Peer review report 1 on "Randomized clinical trial of Desarda versus Lichtenstein repair for treatment of primary inguinal hernia"	06/30/2015	152
Peer review report 1 on "Factors affecting the selection of minimally invasive surgery for stage 0/I colorectal cancer (Design:cohort study)"	03/06/2015	148
Peer review report 2 on "Low-grade adenosquamous carcinoma of the breast: A diagnostic and clinical challenge"	05/15/2015	145
Peer review report 2 on "P53 suppresses cell proliferation, metastasis, and angiogenesis of osteosarcoma through inhibition of the PI3K/AKT/mTOR pathway"	12/20/2015	144
Peer review report 1 on "Mucocoele and mucinous tumours of the appendix: A review of the literature"	04/30/2015	143
Peer review report 2 on "Mucocoele and mucinous tumours of the appendix: A review of the literature"	04/30/2015	134
Peer review report 1 on "Systematic review and meta-analysis of enhanced recovery programmes in gastric cancer surgery"	05/21/2015	134
Peer review report 1 on "Safety and efficacy of intra-articular tranexamic acid injection without drainage on blood loss in total knee arthroplasty: A randomized clinical trial"	06/03/2015	133

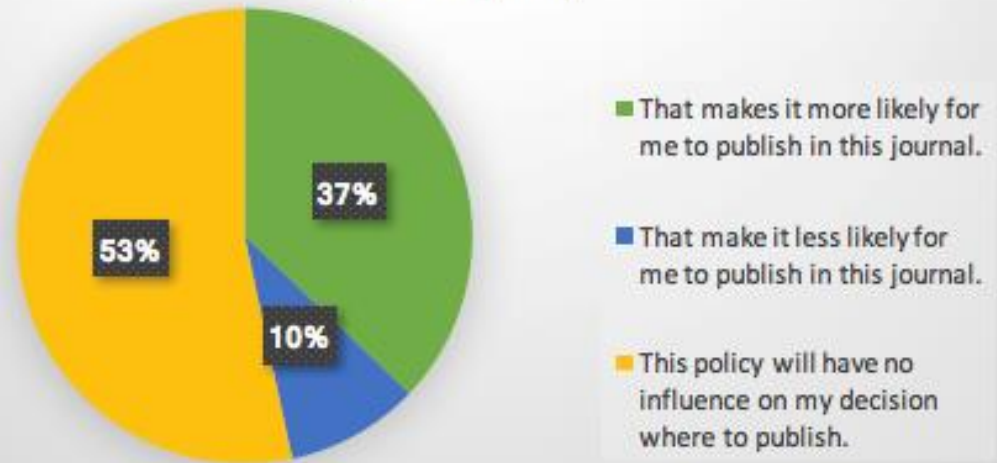
ScienceDirect: Top 10 articles for Review Supp Jan 2016 Vol 25

Usage from Jan 2016-Jul 2017

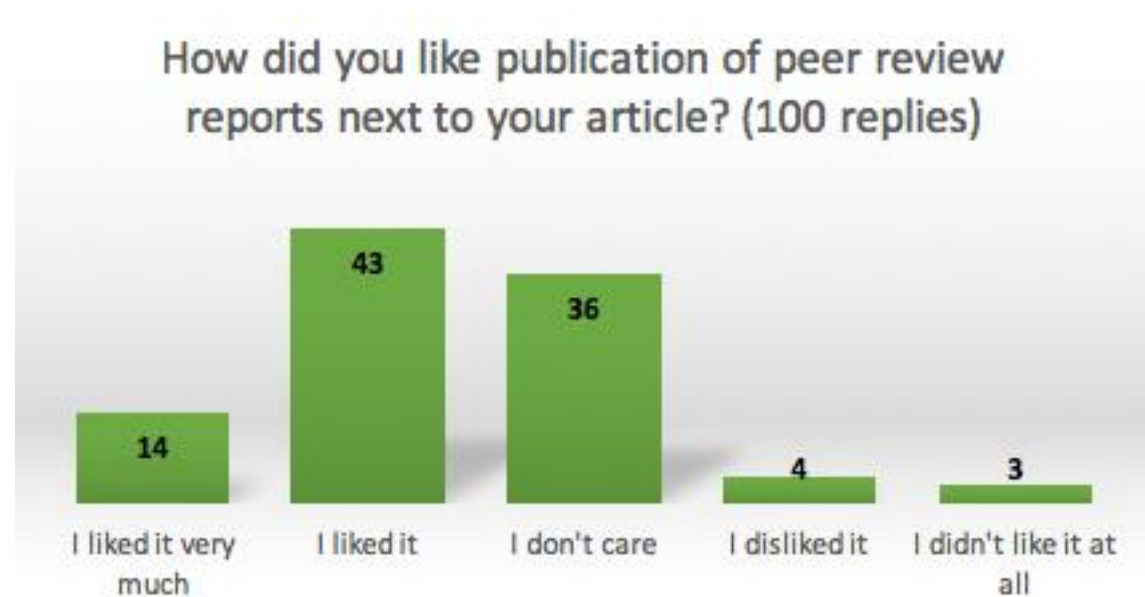
Article title	Online date	Total
Peer review report 1 on "Thyroid carcinoma in graves' disease: A meta-analysis"	11/26/2015	187
Peer review report 2 on "Diagnostic value of serum fibrinogen as a predictive factor for complicated appendicitis (perforated). A cross-sectional study"	11/28/2015	149
Peer review report 1 on "Approaches to optimize focused extracorporeal shockwave therapy (ESWT) based on an observational study of 363 feet with recalcitrant plantar fasciitis"	01/30/2016	140
Peer review report 2 on "Nationwide analysis of short-term surgical outcomes of minimally invasive esophagectomy for malignancy"	12/31/2015	136
Peer review report 1 on "Retrospective evaluation of the pre- and postoperative factors influencing the sensitivity of localization studies in primary hyperparathyroidism"	12/02/2015	128
Peer review report 1 on "The effect of 0.9% saline versus plasmalyte on coagulation in patients undergoing lumbar spinal surgery: A randomized controlled trial"	01/29/2016	127
Peer review report 2 on "Accurate triage of lower gastrointestinal bleed – Cohort study"	12/31/2015	127
Peer review report 1 on "Is laparoscopic surgery the best treatment in fistulas complicating diverticular disease of the sigmoid colon? A systematic review"	12/31/2015	120
Peer review report 2 on "Benefit of rectal washout for anterior resection and left sided resections"	11/25/2015	120
Peer review report 1 on "Adapting the ideal framework and recommendations for medical device evaluation: A modified Delphi survey"	2/08/2016	117

Feedback in 2015

**Does this change in policy influence your decision
to publish in International Journal of Surgery?
(105 Replies)**



Feedback in 2015



- 57% liked it or liked it very much
- 7% disliked or didn't like it at all

Conclusion

- A useful pilot experience that we have incorporated long-term
- 60% authors like it or like it a lot and 35% are more likely to publish because of it
- Transparency, openness, accountability, governance
- Learning and developments in peer-review
- Insights into peer-review for early academics
- Recognition for reviewers
- Archived in perpetuity, a permanent record (DOI) of the decision making process that led to the publication
- If peer-review, is considered an integral part of the scientific process and peer-reviewers (along with editors) are 'guardians' of the scholarly literature, then why not publish their analysis and views?



Increasing research transparency through peer review

About the speaker



Richard D. Morey is Reader in the School of Psychology at the Cardiff University. He earned a PhD in Cognition and Neuroscience and a Master's degree in Statistics from the University of Missouri, and is the author of over 60 articles and book chapters. Currently, Richard is a statistical advisor for the Journal Psychological Science and an associate editor at the Journal of Experimental Psychology: General. In 2017, Richard and his collaborators launched the Peer Reviewers' Openness initiative (<http://opennessinitiative.org>) which aims to increase the transparency of science through the collective action of peer reviewers.

Why do we publish?

What is primary purpose of publishing scientific work?

- To make publishers wealthy
- Increasing our own status
- Describing what we did and what was found in our scientific work, for the universal good
- For the greater glory of God

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**Oldenburg (1665): Introduction to the first
Philosophical Transactions of the Royal Society**

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- For the greater glory of God **the University for the next national research evaluation**

**Oldenburg (1665): Introduction to the first
Philosophical Transactions of the Royal Society**

Openness: still a core principle

National Academy of Sciences:

- "[T]he act of publishing is a quid pro quo in which authors receive credit and acknowledgment in exchange for disclosure of their scientific findings. An author's obligation is not only to release data and materials to enable others to verify or replicate published findings (as journals already implicitly or explicitly require) but also to provide them in a form on which other scientists can build with further research. **All members of the scientific community** — whether working in academia, government, or a commercial enterprise — **have equal responsibility for upholding community standards** as participants in the publication system, and **all should be equally able to derive benefits from it.**" ([p. 4](#))

Committee on Responsibilities of Authorship in the Biological Sciences, National Research Council. 2003 Sharing publication-related data and materials: responsibilities of authorship in the life sciences. Washington, DC: National Academies Press.

Openness and modern science

We want to be open...

- Scientists endorse Merton's norms, including communality, at very high rates (Anderson et al, 2007)

We want others to be open...

- Many scientists say they are negatively impacted by others' lack of openness (Vogeli et al, 2006)

But we aren't open.

- Data "on request" is default; fewer than half respond with data (Vanpaemel, 2015)

The social dilemma

As *scientists* we value openness. As *evaluators and consumers* of research we want openness.

As *authors*, we may not feel that it is in our best interest to be open.

- Openness may not be reciprocated: competitive disadvantage
- Openness takes time
- Openness may not be rewarded in hiring/funding

The social dilemma

As *authors*, incentives are...

- Publish faster
- Avoid work that doesn't benefit us directly
- Avoid possible embarrassment of public mistakes

As *reviewers*, incentives are...

- Encourage better science in general
- Get others to share their data
- Avoid extra review workload
- See possible mistakes

Peer Reviewer's Openness Initiative: started January 2017

Asking about openness

- To the editor: “Will the authors publicly provide the **data** and **materials** underlying the paper on publication, and if not, will they justify that decision?”
- Link to data **and/or** justification should be in final, published paper
- Important: Any *public* justification will do!

Non-comprehensive review

“The purpose of a scientific paper is to describe what was done and what was found. Unfortunately, the authors have not shared their materials and data, so it will be impossible for readers to adequately evaluate this work. Neither have they justified this decision. I consider this a critical flaw in the manuscript, and therefore recommend against publishing this manuscript in its current form. I would be happy to review a version of this manuscript that corrects this major oversight.”

Our paper

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The Peer Reviewers' Openness Initiative: incentivizing open research practices through peer review

Richard D. Morey, Christopher D. Chambers, Peter J. Etchells, Christine R. Harris, Rink Hoekstra, Daniël Lakens, Stephan Lewandowsky, Candice Coker Morey, Daniel P. Newman, Felix D. Schönbrodt, Wolf Vanpaemel, Eric-Jan Wagenmakers, Rolf A. Zwaan

Published 13 January 2016. DOI: [10.1098/rsos.150547](https://doi.org/10.1098/rsos.150547)

Effects

- Over 400 signatories: mass action
- Journal guideline/policy changes
- Internal journal discussions

Elsevier Publishing Campus

Thank you