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# Peer review in 2015

## A global view

A white paper from Taylor & Francis



**OCTOBER 2015**



# Contents

<b>1</b> Introduction	
<b>Research methodology, responses and survey notes</b> .....	3
<b>2</b> Key Findings .....	6
<b>3</b> Peer review: what's its purpose and how does it benefit me? .....	7
<b>Key aspects of peer review: views and expectations</b> .....	7
<b>4</b> The ethics of peer review .....	12
<b>Perception of prevalence of ethical issues</b> .....	12
<b>Do some peer review models address ethical concerns?</b> .....	13
<b>Who is responsible for managing ethical issues?</b> .....	14
<b>5</b> The mechanics of peer review .....	15
<b>How long is too long? Timeframes for peer review</b> .....	15
<b>Where's my paper? Communicating on time</b> .....	16
<b>Data: to review or not to review?</b> .....	17
<b>What am I checking? Structuring reviews</b> .....	18
<b>6</b> What's the alternative? Different models of peer review .....	19
<b>Who is reviewing? Revealing reviewer identities</b> .....	21
<b>7</b> Conclusion .....	22
<b>8</b> Survey demographics .....	23
About Taylor & Francis Group/Acknowledgements	

Version 2: Additional information comparing the representativeness of the survey response compared to the sample has been provided on page 4.

## 1 Introduction

Within the academic community, peer review is widely recognized as being at the heart of scholarly research. However, faith in peer review's integrity is of ongoing and increasing concern to many. It is imperative that publishers (and academic editors) of peer-reviewed scholarly research learn from each other, working together to improve practices in areas such as ethical issues, training, and data transparency.

This white paper has been researched and compiled to assist in this goal, presenting survey results and focus group findings from one of the largest international research studies on peer review in recent years, carried out in early 2015 by Taylor & Francis.

'Peer Review in 2015: a global view' builds upon two previous large-scale studies (*Publishing Research Consortium*<sup>1</sup> (PRC) and *Sense about Science*<sup>2</sup>) (SAS), enabling us to see how opinions and preferences towards peer review have evolved in recent years. It offers an insight into what is resonating with the scholarly community in 2015, with opinions from the three distinct roles studied – authors, reviewers, and editors – allowing attitudinal comparison and a 360° view.

With so much having been written and commented on in this area within previous research studies, academic articles, reports and blog posts, 'Peer Review in 2015: a global view' assumes the reader will have some knowledge of the issues and conversation surrounding peer review. Consequently, for brevity's sake, they will not be covered here but this white paper is accompanied by a references section, as well as the underlying survey data, providing a springboard to read more on all aspects of the conversation.

### Research methodology, responses and survey notes

The research comprised of six focus groups, an online survey, and desk research to identify relevant previous studies, articles, reports and blog posts. The survey responses presented here are from researchers who have published in Taylor & Francis or Routledge journals. We contacted researchers who published with Taylor & Francis in 2013, so that many would also be able to offer recent experiences ranging across many different publishers, reflecting the diverse publishing experience of today's research community. Their responses were then compared to a smaller sample of researchers from lists provided by Thomson Reuters, to ensure the results were truly representative.

Wherever technical terminology was used in the survey relating to peer review models, definition boxes were given alongside. Multiple item list order was randomized for each respondent, in order to avoid the effect of order-bias. All focus group participants and survey respondents have been anonymized in this reporting.

1. Ware, M and Monkman, M. (2008) Peer review in scholarly journals: Perspective of the scholarly community – an international study. Publishing Research Consortium

2. Peer Review Survey 2009: Full Report. Sense About Science

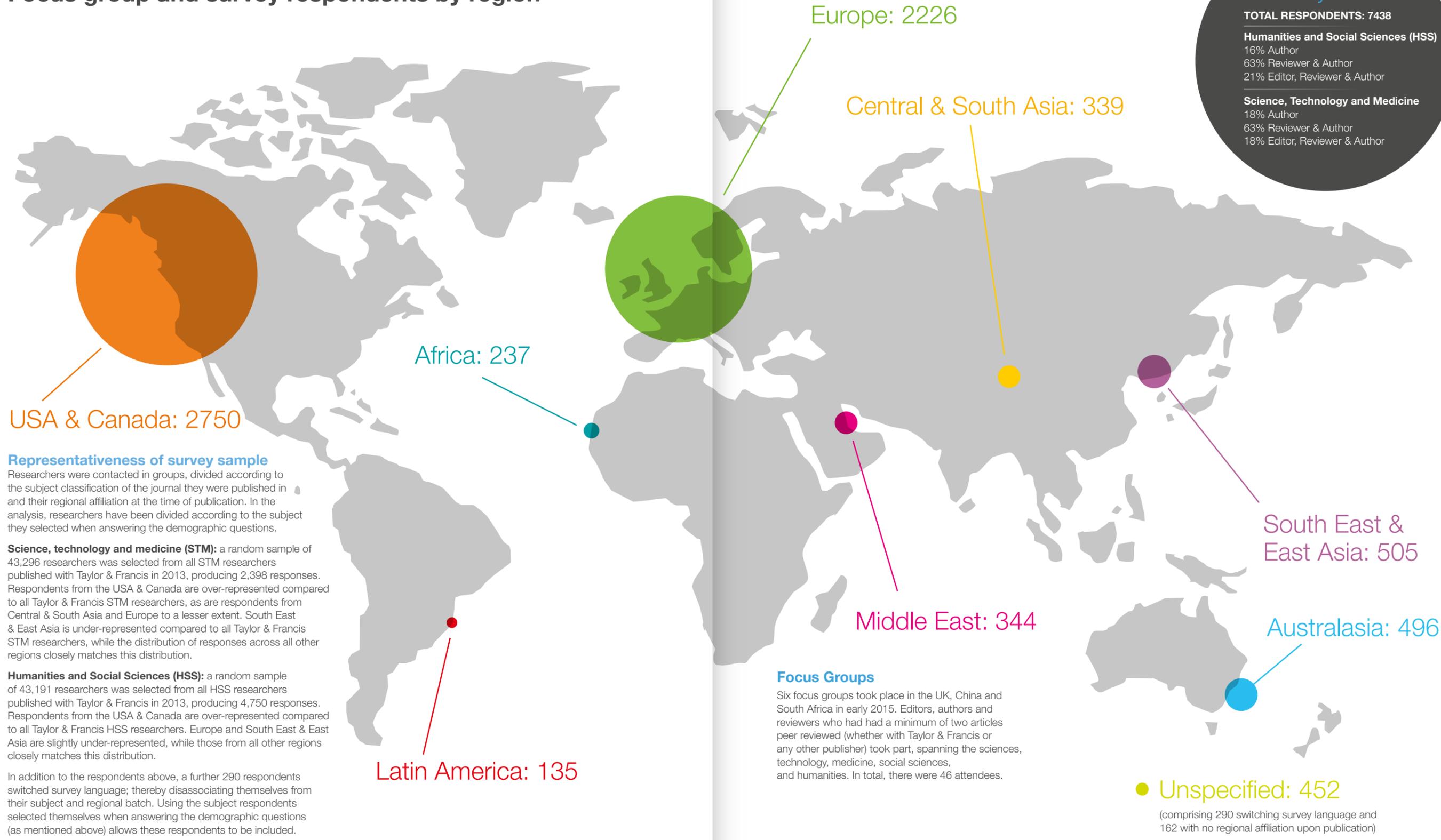
"If there is integrity it works well but we are dealing with people, and things go on."

Researcher, Business and Economics, UK





## Focus group and survey respondents by region



### Representativeness of survey sample

Researchers were contacted in groups, divided according to the subject classification of the journal they were published in and their regional affiliation at the time of publication. In the analysis, researchers have been divided according to the subject they selected when answering the demographic questions.

**Science, technology and medicine (STM):** a random sample of 43,296 researchers was selected from all STM researchers published with Taylor & Francis in 2013, producing 2,398 responses. Respondents from the USA & Canada are over-represented compared to all Taylor & Francis STM researchers, as are respondents from Central & South Asia and Europe to a lesser extent. South East & East Asia is under-represented compared to all Taylor & Francis STM researchers, while the distribution of responses across all other regions closely matches this distribution.

**Humanities and Social Sciences (HSS):** a random sample of 43,191 researchers was selected from all HSS researchers published with Taylor & Francis in 2013, producing 4,750 responses. Respondents from the USA & Canada are over-represented compared to all Taylor & Francis HSS researchers. Europe and South East & East Asia are slightly under-represented, while those from all other regions closely matches this distribution.

In addition to the respondents above, a further 290 respondents switched survey language; thereby disassociating themselves from their subject and regional batch. Using the subject respondents selected themselves when answering the demographic questions (as mentioned above) allows these respondents to be included.

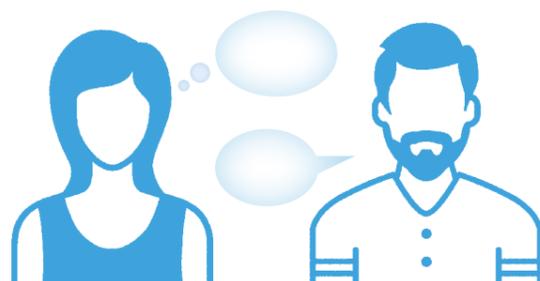
### Focus Groups

Six focus groups took place in the UK, China and South Africa in early 2015. Editors, authors and reviewers who had had a minimum of two articles peer reviewed (whether with Taylor & Francis or any other publisher) took part, spanning the sciences, technology, medicine, social sciences, and humanities. In total, there were 46 attendees.



## 2 Key findings

- Authors, editors and reviewers all agreed that the **most important motivation** to publish in peer-reviewed journals is **making a contribution to the field** and **sharing research** with others.
- **Playing a part in the academic process** and **improving papers** are the most important motivations for reviewers. Similarly, 90% of SAS study respondents said that playing a role in the academic community was a motivation to review.
- Most researchers, across the humanities and social sciences (HSS) and science, technology and medicine (STM), rate the benefit of the peer review process towards **improving their article as 8 or above out of 10**. This was found to be the most important aspect of peer review in both the ideal and the real world, echoing the earlier large-scale peer review studies.
- In an *ideal world*, there is agreement that peer review should **detect plagiarism** (with mean ratings of 7.1 for HSS and 7.5 for STM out of 10), but agreement that peer review is currently achieving this in the *real world* is only 5.7 HSS / 6.3 STM out of 10.
- Researchers thought there was a **low prevalence of gender bias** but **higher prevalence of regional and seniority bias** – and suggest that double blind peer review is most capable of preventing reviewer-discrimination where it is based on an author's identity.
- Most researchers **wait between one and six months** for an article they've written to undergo peer review, yet authors (not reviewers / editors) think **up to two months is reasonable**.
- **HSS authors** say they are kept **less well informed than STM authors** about the progress of their article through peer review.
- There is strong support across all researchers to **publish peer review times online (from submission to decision to publish)**: the majority of researchers rating this between 9-10 out of 10.
- Respondents are **close to neutral on whether underlying data** should be reviewed alongside the article, and are generally less exercised about this than respondents in the previous *PRC* study (which found more support for reviewers to review author data themselves).
- There is a **strong preference for double blind review** among all respondents, with a rating of 8 or above out of 10. This echoes both previous peer review studies. Single blind review is an unpopular choice but is more acceptable to STM researchers than HSS and, of those, editors and authors are more in favor than reviewers.
- There are balanced views across the options of **open, open and published, and post-publication review**; with a mean rating of between 5 and 6 out of 10 in many cases (with HSS editors less supportive than STM). Editors and reviewers are less supportive than authors of an *open and published review* model. This appears to be very much based on personal preference, with competing views for and against these newer models across roles, locations and experience levels.
- There is a strong desire to receive and publish global perspectives yet **publication of articles from non-native English-speaking researchers is negatively impacted by grammatical and language issues** in the real world. There is considerable editorial work involved in initial checking and processing of articles needing language or grammatical correction that may, or may not, reach review stage.
- During focus groups, editors discussed how **submission volumes** have increased in every discipline, deducing that the drive to publish in high Impact Factor journals (for reasons of professional advancement) is influencing this.



## 3 Peer review: what's its purpose and how does it benefit me?

### Continuing to value peer review

Most respondents agreed that scholarly communication is greatly helped by peer review of published articles (78% scoring this 7 or higher out of 10). Additionally 68% of researchers believed they could have confidence in the academic rigor of published articles because of the peer review process, rating this as 7 or higher out of 10.

The majority (55%) also strongly agreed that peer review improved their most recently published article (*improving quality* is voted most important of the list of ideal benefits) by rating this as 8 or higher out of 10. By including those who rated it 7 or higher out of 10, this rises from 55% to three quarters, echoing the responses in the *PRC* and *SAS* studies.

However, in many other areas there is divergence between what is perceived to be happening in the real world and what researchers envisage to be the ideal benefits, and it is evident that practice falls short of these ideals. All suggested benefits received a mean rating of 7 or above as an ideal benefit of peer review or in other words, all were judged important.

*"The best situation is when you get good constructive critical feedback".*

Editor, Linguistics, UK

#### Most important peer review outcomes in an ideal world\*

##### Improving quality

- Checking methodology
- Provide polite feedback
- Highlight omissions
- Suggest changes to improve readability
- Determine the importance of findings

\*Each had a mean score above 8.

#### Most achievable peer review outcomes in the real world\*

##### Improving quality

- Checking methodology
- Make a judgement about the novelty
- Determine the importance of findings
- Suggest changes to improve readability
- Check relevance to journal scope
- Highlight omissions

\*Each had a mean score of 7 or more. None of the options offered scored above 8 for real world achievement.

### Key aspects of peer review: views and expectations

Respondents also expected peer review to accomplish the key aspects of detecting plagiarism and fraud, checking factual accuracy, and judging novelty. These elements were rated higher than 5.5 as the most important outcomes in an ideal world. Yet in the real world, ratings show peer review falls short of this, with STM researchers moderately more satisfied than their HSS colleagues that these outcomes are achieved.

This concurs with the previous studies, which both found these aims important but hard to achieve. In our experience, most researchers have been exposed to one or more of the available plagiarism detection databases but as these systems aren't perpetually updated, this often leads to charges of them being ineffective when matches with very recently published material are not found.



On language, spelling and grammar issues, the survey results show that these were considered less important than the main (aforementioned) peer review functions in an ideal world. An indication of language issues was seen as more important than actual correction.

The relatively low importance rating on the survey belies the real-world editorial work involved in the initial checking and processing of articles needing language or grammatical correction – and these articles may or may not reach review stage. During the focus groups with editors, there was significant discussion about the levels of time and work created by language issues with international submissions. There was evidence of a strong desire to receive and publish global perspectives yet the reality is that publication of articles from non-native-English speaking researchers is hampered by grammatical and language issues.

“I tried to review a paper by non-native English authors in which the language was so poor that I had to give up half way through and advise that the entire paper should be re-written. It was particularly frustrating as one of the co-authors was a native English speaker. The paper should not have gone out to review in its existing form – a failure on the part of the editors.”

**Editor, History, UK**

“We should not be punishing non-native English speakers. We can’t punish someone doing amazing research in South America just because the researcher is not a native English speaker”.

**Researcher, Environmental Science, UK**

“...sometimes English can determine whether your paper can be published.”

**Editor, Medicine, China**

Discussion in the UK focus groups suggest editorial time spent handling language aspects may be more of an issue for those in HSS disciplines than in STM, which are less discursive in nature.

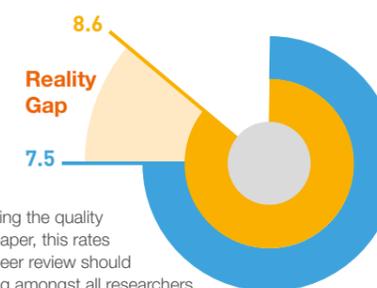
For HSS respondents the biggest shortfall between the ideal and the real world is in peer reviewers providing polite feedback, with a mean score of 8.5 saying it should achieve this, but only 6.5 saying it does.

For STM respondents, the biggest shortfall between the ideal and the real world is in peer review's ability to detect fraud, with a mean score of 7.9 saying it should achieve this, but only 6.3 saying it does.

## Mind the gap: peer review expectations vs. reality

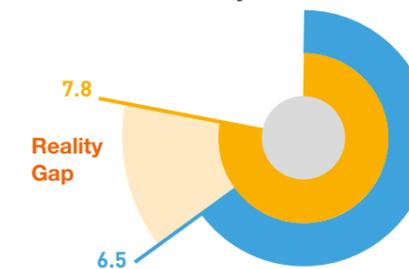
In most cases HSS and STM responses were closely aligned; therefore the charts below show a combined mean score out of 10 for both HSS and STM. Any significant differences are highlighted in the text.

### Check for appropriate & robust methodology



Along with improving the quality of the published paper, this rates highest for what peer review should ideally be achieving amongst all researchers.

### Check factual accuracy

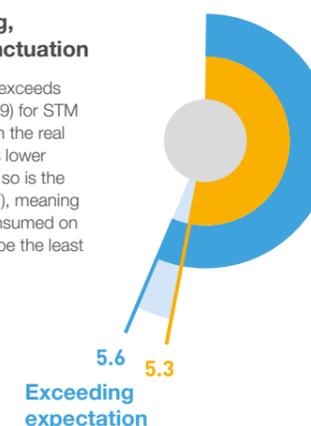


“I’d like to see a pre-publication online comment system, where the submitted paper was posted online, and comments were invited. These could then be dealt with in the final, published version of the paper. It would also help: 1) to avoid people running off with others’ data/ideas (the pre-publication posting would identify ownership); 2) detect plagiarism; 3) identify errors in the data or methodology.”

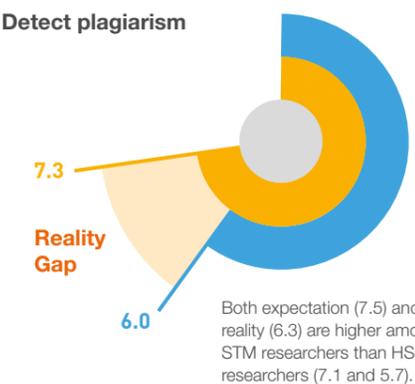
**Editor, Geography, UK**

### Correct spelling, grammar & punctuation

Here reality (6.1) just exceeds ideal expectations (5.9) for STM researchers. Although the real world average (5.1) is lower for HSS researchers, so is the ideal expectation (4.7), meaning reviewers’ time is consumed on what is perceived to be the least beneficial activity.



### Detect plagiarism

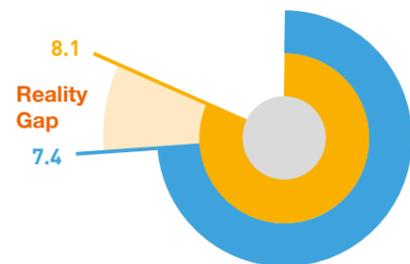


Both expectation (7.5) and reality (6.3) are higher amongst STM researchers than HSS researchers (7.1 and 5.7).

● Ideal world average    ● Real world average



### Determine importance of findings

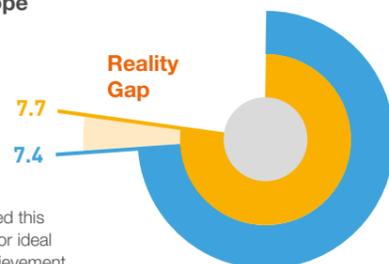


"Am I briefing the editor on whether this is worthy of publication or am I helping the author improve the paper? Because of time pressures more and more I go for briefing the editor".

Editor, STM, United Kingdom



### Article's relevance to aims and scope



Researchers scored this outcome closest for ideal and real world achievement.

"Editors should be more pre-emptive in detecting plagiarism & other types of fraud. Editors must be sure the manuscript is in good shape and worth publishing before sending it out for review. If reviews are contradictory the editor should decide in the end."

Researcher, Medical Research, United Kingdom

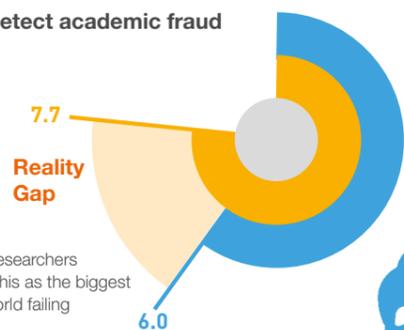


"Training on how to detect fraud, I would not feel comfortable having that responsibility thrust upon me in case I missed something. I would feel completely responsible."

Researcher, Public Health, United States



### Detect academic fraud



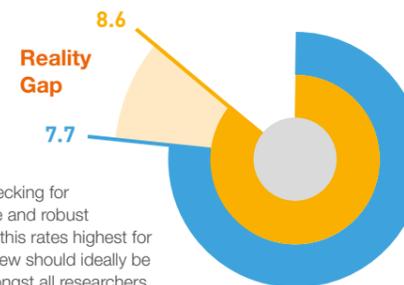
STM researchers rated this as the biggest real world failing

"A reviewer asking me to add a reference I suspect was to their work which didn't add anything but the paper is now in press..."

Researcher, Medical Research, United Kingdom



### Improve quality of published article



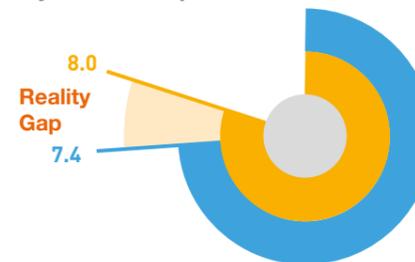
Along with checking for an appropriate and robust methodology, this rates highest for what peer review should ideally be achieving amongst all researchers.



"...the learning opportunity that peer review provides to me is something I treasure".

Reviewer, Health Studies, South Africa

### Judge novelty of manuscript

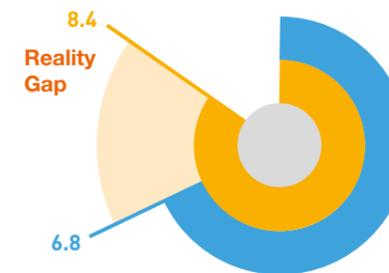


"The worst reviews are short, snitty, patronising and not remotely useful. The best are critically engaged, add something and improve the quality."

Editor, Linguistics, United Kingdom

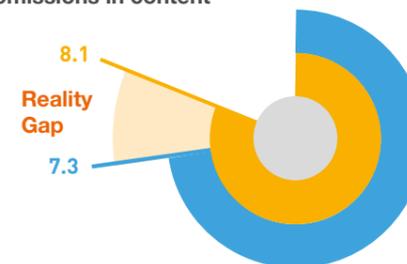


### Provide polite feedback

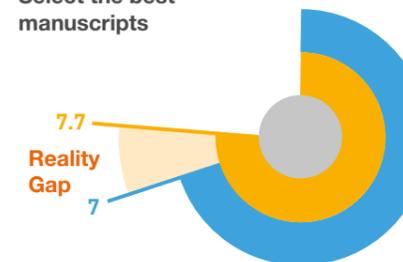


The biggest difference for HSS respondents was here, with an ideal rating of 8.5 to a real world rating of 6.5. STM respondents gave a higher real world rating (7.0), narrowing the gap to their ideal world rating (8.3).

### Highlight omissions in content



### Select the best manuscripts



● Ideal world average ● Real world average

## 4 The ethics of peer review

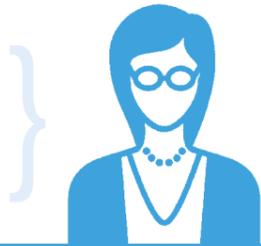
### A sensitive issue?

There was a notable drop-off in the response rate at this point in the survey. In previous Taylor & Francis surveys of this length and complexity, there were up to a fifth fewer respondents to the last question than the first – with drop-outs throughout the course of the survey. Unusually here, there was a sizeable, and sudden, drop-off in the response rate at the beginning of this section: 11% of respondents did not answer this set of questions, and a minority of those returned for the following section.

In focus groups, there was less unprompted engagement with ethical questions than practical ones, with more prompts needed to uncover any issues.

“Peer review can be used as a gatekeeping mechanism to keep certain views out of circulation. In which article are there not personal views? Which personal views should be in the public domain and which shouldn't?”

Researcher, Anthropology, South Africa



### Experiences of bias and discrimination

Respondents were asked to rate how common they felt a set of ethical situations are in peer review practice currently, with 1 being extremely rare and 10 extremely common.

Researchers rated regional and seniority bias highest, and suggest that double blind peer review is most capable of preventing any reviewer discrimination based on aspects of an author's identity. Reviewers falsifying their identity and gender bias was rated lowest of the list.

### Perception of prevalence of ethical issues

Prevalence of the following situations in the peer review process, from 1 (extremely rare) to 10 (extremely common). Scores above 5.5 means this happens more often than not.

“Some of the reviewers don't exist. The author forges a name, creates an identity, applies for a new mailbox and reviews their paper themselves. They submit their paper the first day and get their comments the next day.”

Researcher, Healthcare, China

I used to be at a university which is low ranking in my current field. When I was there I couldn't get a paper accepted but now I am at a well-respected institution, I feel some papers are accepted too easily!”

Researcher, Environmental Science, UK



“I know of groups now planning for the next REF by thinking about which special issues to suggest enabling publication in a certain journal; and special issue editors can be influenced to use certain reviewers.”

Researcher, Business and Economics, UK

Asked about steps that can be taken to ameliorate these problems (such as using only initials to disguise gender or switching institutional affiliation), for each method a majority (>50%) said they never do this. The only exception (1 -2% short of a majority) was asking competitor labs not to review the work, which is considered standard practice in many STM subjects.

### Do some peer review models address ethical concerns?

There have been suggestions that different peer review models could reduce the prevalence of potential ethical problems by, for instance, changing whether the author and reviewer are aware of each other's identities, or by the prospect of having reviews published online.

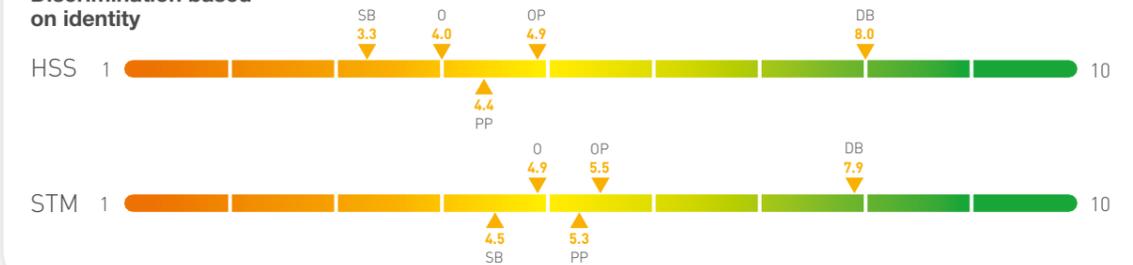
Unsurprisingly, respondents scored double blind review as most effective at preventing discrimination based on identity, and for avoiding overly positive reviews by reviewers known to the author. This is concurrent with findings in the 2008 PRC study, which found:

“Double-blind review was primarily supported because of its perceived objectivity and fairness. Many respondents did however point out that there were great difficulties in operating it in practice because it was frequently too easy to identify authors.”

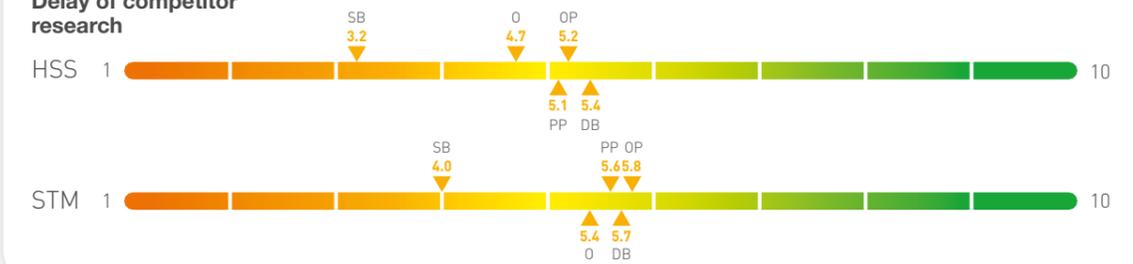
“I think that if both the authors' and reviewers' names are known to each other, it is more difficult to delay or belittle the paper of another competitor researcher.”

Researcher, Geology, Italy

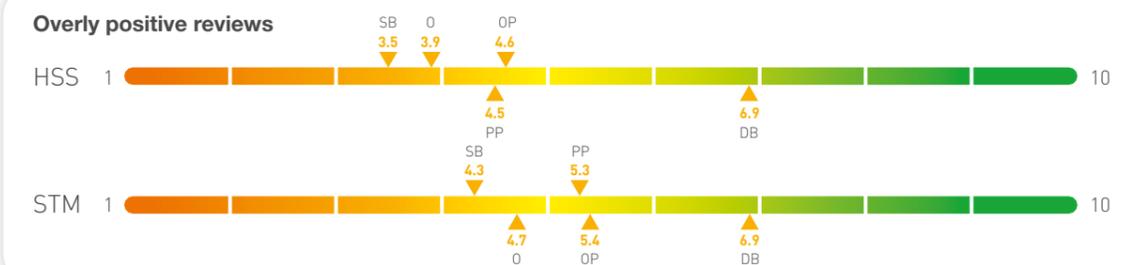
#### Discrimination based on identity



#### Delay of competitor research



#### Overly positive reviews



“In open review, the authors know whether the reviewers are their competitors which might prevent delay in review and idea transfer.”

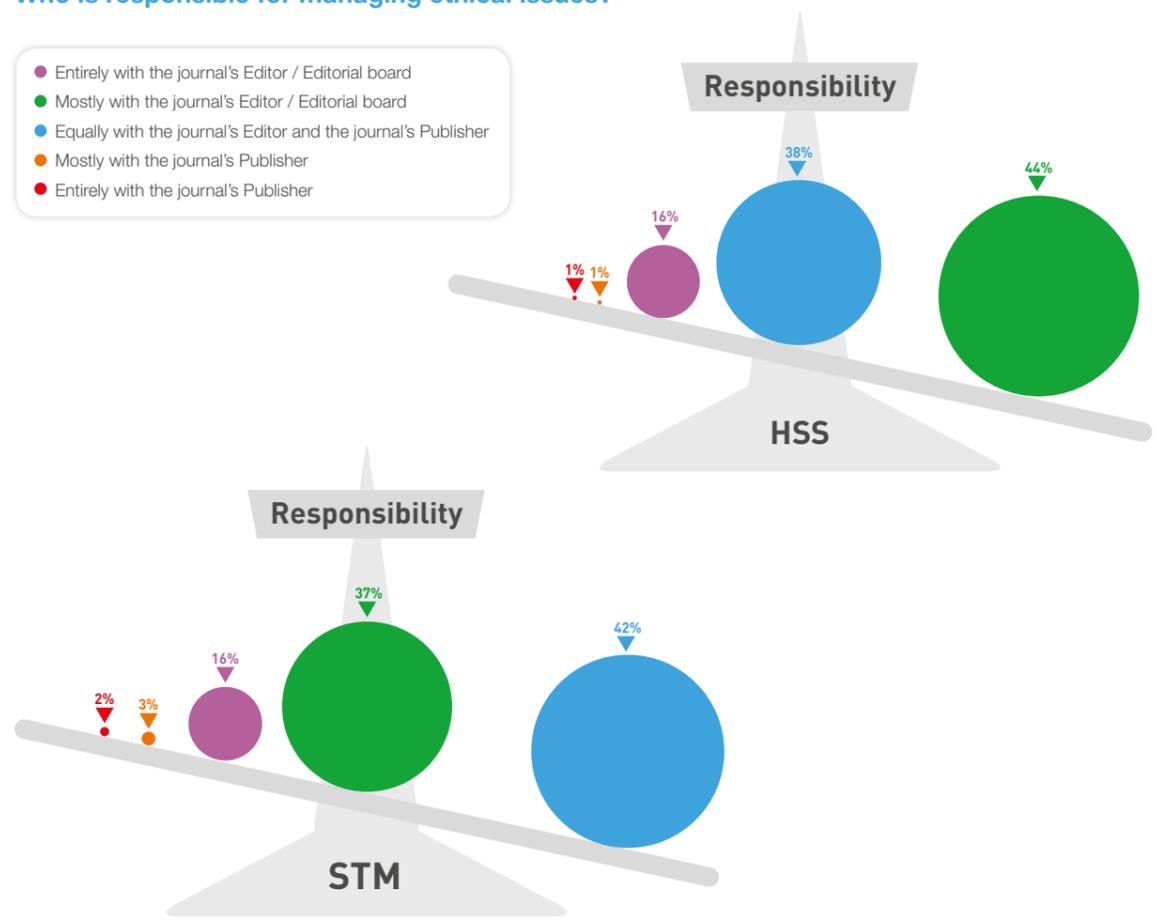
Researcher, Biological Sciences, United States

SB = Single blind peer review  
 DB = Double blind peer review  
 O = Open peer review  
 OP = Open and published peer review  
 PP = Post-publication peer review  
 N.B Please see page 19 for definitions, as given in our survey.



## Who is responsible for managing ethical issues?

- Entirely with the journal's Editor / Editorial board
- Mostly with the journal's Editor / Editorial board
- Equally with the journal's Editor and the journal's Publisher
- Mostly with the journal's Publisher
- Entirely with the journal's Publisher



Particularly in the UK, the focus groups discussed responsibility for managing ethical issues lying with the journal editor or publisher, but agreed that there should also be collegiate responsibility across authors, editors, reviewers and publishers for maintaining the effectiveness and rigor of peer review.

“Editors need to be able to see when a negative review is simply a bad review done by someone who has failed to understand the paper or who has a grudge against some aspect of it.”  
**Editor, History, United Kingdom**

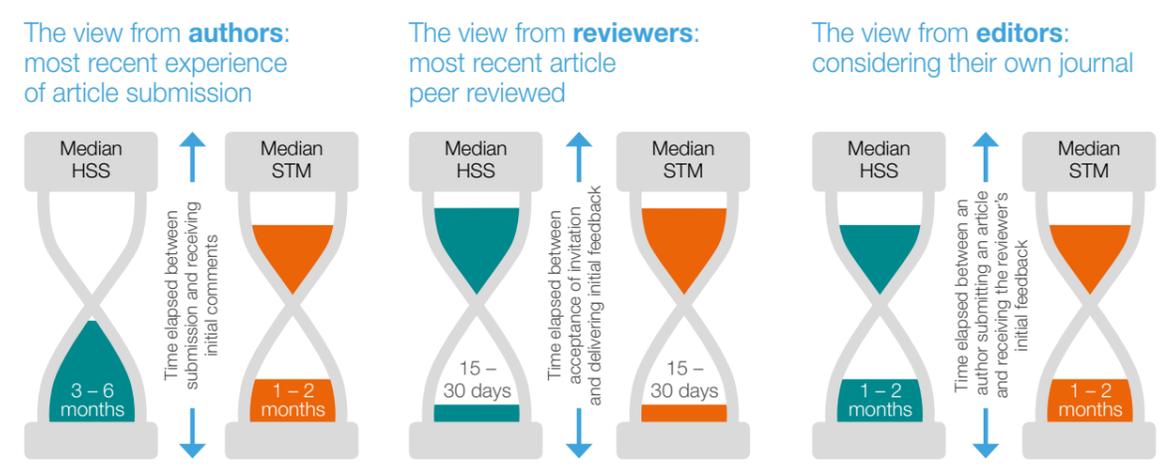
Locating the ‘right’ reviewer was also a topic of some discussion, highlighting the importance of ensuring qualified and appropriate reviewers are available and willing to review papers. The role (and effectiveness) of automated tracking systems, which allow authors to suggest potential reviewers, was discussed. However, this is not without its flaws and several attendees felt author-selected reviewers was not always the best approach.

“It makes me a bit lazy and my job as an editor easier, which is nice, but it makes the peer review process less vigorous. I used to look back at references in older issues and select past authors in the subject area. If there was some way of automating that process it would be revolutionary.”  
**Editor, Natural History, United Kingdom**

## 5 The mechanics of peer review

### How long is too long? Timeframes for peer review

Reviewers and editors agree that 15 – 30 days is a reasonable timeframe to deliver initial feedback, and most reviewers state that they were able to meet that deadline in their latest review. However, most authors (85% HSS / 73% STM) said they had to wait longer than this on the most recent article they submitted.



### Timeframe discrepancies

Most reviewers consider up to 60 days a reasonable amount of time to deliver their initial feedback and of those, almost all said that they achieved this on the most recent article they reviewed. However, most authors report waiting longer than this for feedback – a clear discrepancy.

Interestingly though, by reviewing the process timeframes reported by the editors, we see the discrepancy may be due to editorial matters. There is actually close alignment between the length of time editors consider reasonable to grant reviewers to undertake their review, and the time reviewers are reporting they take. However, there are extra processes (usually invisible to authors) such as administrative checks, plagiarism detection, reviewer search and selection, or tiered editorial decision-making processes (more common in STM than HSS). These tiered processes can include editor assignment, associate editor recommendation and editor-in-chief final decision, all adding time to the review stage.

This raises the question: could editors and publishers do more to communicate what is going on around the actual peer review more effectively?

There is also a divergence between editors’ and authors’ reports of the time that elapses between submission and initial feedback. Many authors reported that feedback takes longer than two months. It is possible that perspective and expectation levels are influencing how well researchers are correctly recalling these timeframes.

In the previous studies, 38% (PRC) and 43% (SAS) felt peer review was too slow.

“An extremely lengthy and frustrating wait for your research to appear when administrative errors and issues hold it up - for two years in my case!”

**Author, Psychology, South Africa**

“There really is quite a difference between natural science and social science. Most economic journals to which I submitted often take six months for review.”

**Researcher, Economics, China**





### Realities of submission – feedback timeframe



### Where's my paper? Communicating on time

Being kept informed on the progress of an article as it went through peer review was not something respondents rated as being handled effectively at the moment. STM authors scored communication slightly higher with a mean score of 6.5 out of 10 compared to 5.5 out of 10 for HSS authors. Interestingly, editors and reviewers (who were also asked to answer this as an author) scored communication lower across the board, suggesting that perhaps expectations are higher within this group.

There was strong support, 8 or more out of 10 in every case, for journals to publish review times, from submission to publication decision, online.

“When I was a subject editor the communication between myself and the main editor was appalling. Editorial boards and subject editor structures have been problematic in my experience”.

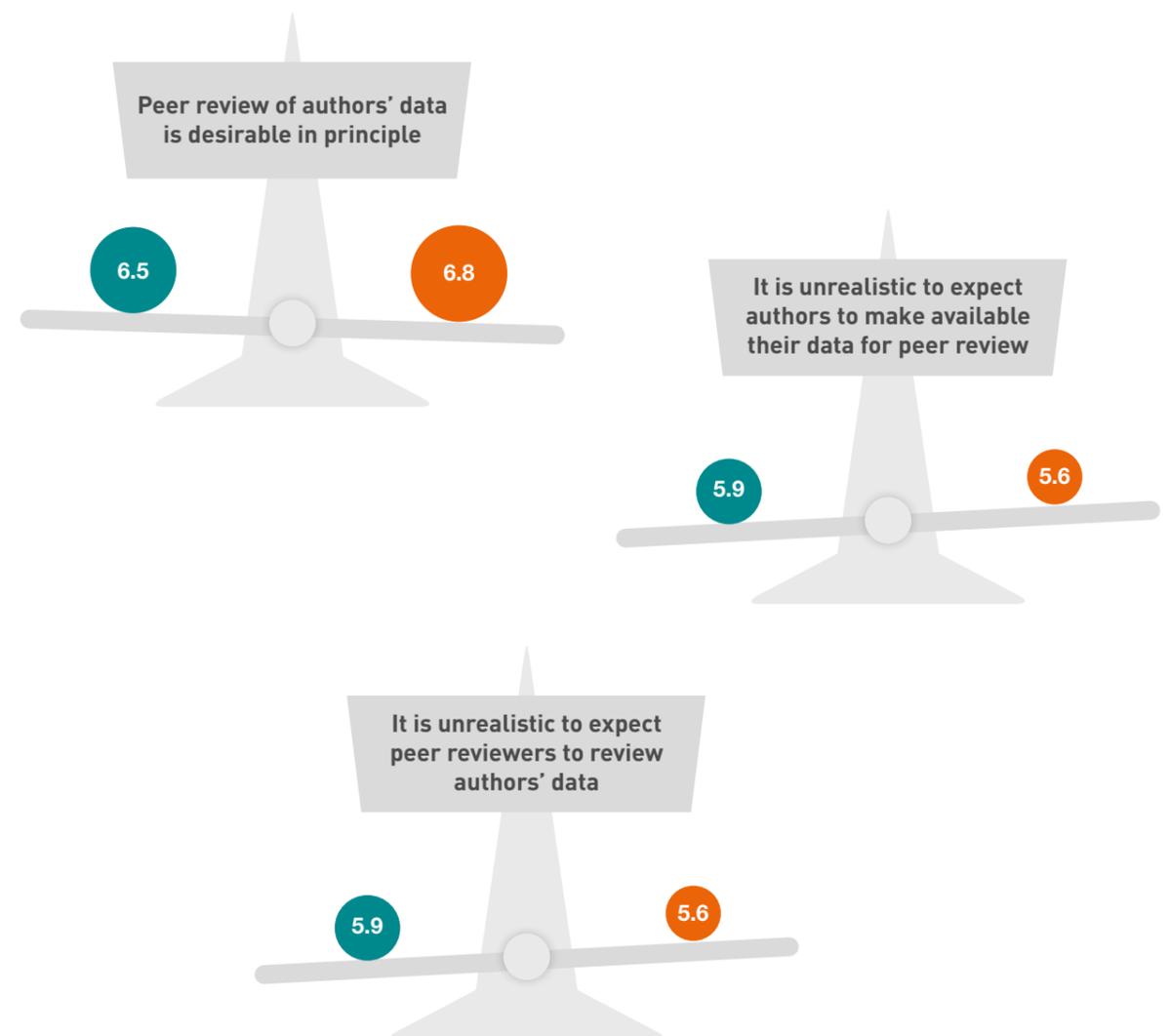
**Editor, Natural History, United Kingdom**

“I sent my paper two years ago. I was told it was going to peer review, I didn't receive the reviewer comments but I got editor comments. The way the editor asked me to tweak it gave me a strong sense that they wanted me to cite their research. It is still ongoing, two years and counting.”

**Editor, Soil Science, South Africa**

### Data: to review or not to review?

When asked about views on peer reviewing the data authors gather and use during their research, there is moderate support for this in principle. Researchers are fairly balanced on the subject of whether or not it is realistic to expect authors to make their data available, and show modest agreement that it is unrealistic to expect reviewers to peer review author data. Although this finding is reflected in the earlier PRC study, that study did see a stronger willingness with a small majority of reviewers (51%) saying that they would be prepared to review authors' data themselves.



All scores are on a scale of 1-10, with 1 being strongly disagree to 10 being strongly agree

● HSS ● STM

### What am I checking? Structuring reviews

Reviewers find a basic checklist the most beneficial format for ensuring the quality of the review. The more highly structured and rigid the review format is, through structured forms to numerical rating scales, the less beneficial reviewers find them. However, the least beneficial of all formats was a totally unstructured review, suggesting reviewers like some guidance but not too much.

“Sometimes the amount of feedback received is very meagre and poor. It is not really true to say it has been peer reviewed. I want something that is benchmarked, that has had the minimum attention we expect when we do peer review. We need a sufficient quality so that the person that is reviewed can feel satisfied that my paper might not get in this journal, but the comments raised by the reviewers are excellent so that I can revise my paper and resubmit it. Not just to this journal, but maybe to other journals as well.”

Author, Literature Studies, South Africa

Despite many publishers creating guides for reviewing, whether online or in other formats (including Taylor & Francis), it does not seem, based on the responses given here, that these are reaching a wide number of reviewers at the point at which they review. Others have asked the question whether now is the time for publisher-wide agreement and guidance on reviewing. Could this help to ensure that everyone involved in peer review is fully aware, and comfortable, with the expectations of their role?

“It would be great if the journal could make a list of do’s and don’ts, with clear examples. Give training in how to write a good and useful review, while minimizing the invested time. Provide examples of good and bad reviews. How to politely phrase critique. Explain how to structure a review, etc. ... I think that every publisher should make such an online guide available for free, since improving the quality of the reviews leads to improving the quality of the publisher’s journals.”

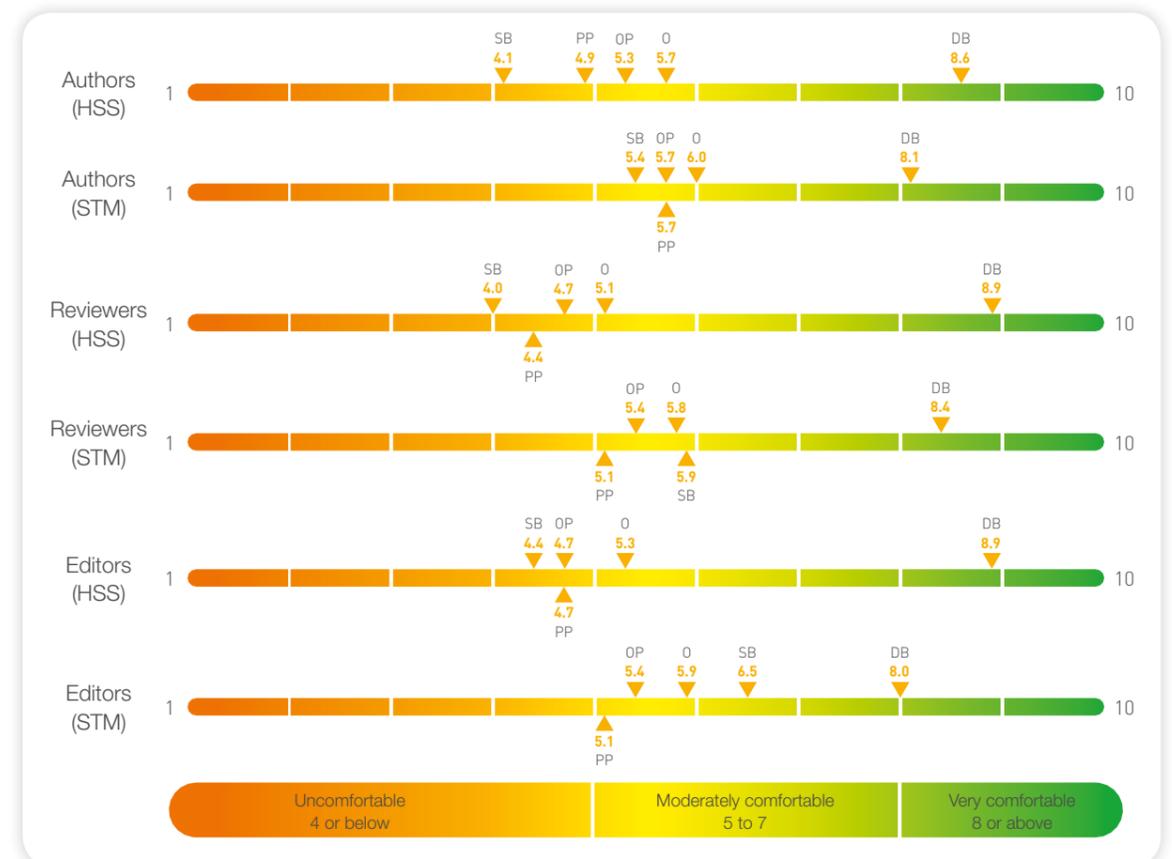
Researcher, Computer Science, Luxembourg

	Most beneficial		Least beneficial	
	Basic checklist	Structured form	Numerical rating scale	Totally unstructured
HSS reviewers	7.2	6.7	5.4	4.5
STM reviewers	7.2	7.0	6.3	4.7

Mean scores on a scale of 1 - 10, 1 being the lowest, 10 the highest.

## 6 What's the alternative?

Different models of peer review



### Definitions of types of peer review

(as given in the online survey and at focus groups)

**Single blind (SB):** Peer review where only the author's name is known to the reviewer but the reviewers' names are not known to the author

**Double blind (DB):** Peer review where neither the author's nor the reviewers' names are known to each other

**Open (O):** Peer review where both the author's and reviewers' names are known to each other

**Open and published (OP):** Peer review where both the author's and reviewers' names are known to each other and the reviewers' signed reports are openly published alongside the paper

**Post-publication (PP):** Peer review where online readers comment on, or rate the paper following publication



"I think double blind should be used more often. As far as I know, both of the articles that I published were single blind, which was fine, but I suspect that double blind would add another layer of impartiality. Sometimes people know who is writing the article just by looking at the subject matter, so this is not foolproof."

**Researcher, Arts, United States**



The responses from researchers in all roles show they are far more comfortable with double blind review than any other type, matching the findings of the previous studies. *Single blind review* is least popular with many respondents, but STM reviewers and editors are more comfortable than their HSS counterparts.

"You have to be quite secure about your career to unblind yourself. I don't want to offend a future employer or someone sitting on an interview panel by rejecting their paper. Double blind is fairer."

**Researcher, Environmental Sciences, United Kingdom**



*Open review* elicits moderate scores overall. Attitudes towards open peer review are quite balanced, with approximately as many rating their level of comfort 6 or above as rating it 5 or below (mean scores are between 5 and 6). Notably, HSS editors are less comfortable with open review. This moderate or neutral scoring overall though is accompanied by a lot of commentary from researchers, much of it expressing strong views.

When commenting on all types of open model, feedback is mixed and contradictory. Many feel "blind" is illusory as it is easy to find someone's identity if wanted. Within focus groups and free text survey comments, there is evidence of concern that junior researchers may feel inhibited to honestly critique senior, potentially more established, researchers if their identity is known and that generally, open review will compromise candor. There is much concern that bias is inevitable in open review, whilst supporters feel it will hold reviewers to account.

"This (open review) may discourage junior researchers from posting daring questions of senior researchers' work."

**Researcher, Education, Hong Kong**



"I think this is the most transparent way of dealing with academic publication. It may put some pressure on the reviewer, but it also gives him/her credit, considering the amount of time spent serving the community."

**Reviewer, Humanities, Lebanon**



Survey results show authors are neutral in their level of comfort towards *open and published review* (mean rating 5.3), with reviewers and editors slightly less comfortable. However, actual free text responses offer evidence of polarized views.

"Added value compared to open: reputation of the reviewer is also at stake".

**Reviewer, Biological Sciences, Switzerland**



"This would shift attention from the work of improving the article to writing for a third-party audience".

**Reviewer, Sociology, Norway**



"This may discourage younger scholars from submitting papers because they might be scared of receiving bad reports and be ashamed to see them published."

**Reviewer, Business and Economics, Belgium**



The majority of HSS researchers are uncomfortable with *post-publication review* (which had a mean rating below 5). STM authors are slightly more in favor of post-publication peer review, with reviewers and editors less so. Polarized views are, once again, seen here.

Some researchers state a need for standards and moderation to avoid "trolling". Those in favor value transparency, accountability, and the chance for continued improvement of a piece of research. Those against feel public review removes impartiality; that comments on early versions of papers may divert attention from later amended versions; and that the qualification of non-expert commenters dilutes the scholarly value.

Some strongly feel anonymity is essential in a post-publication open world, whilst others demand accountability via full identity disclosure.

Some researchers feel that the ideal model is pre-publication double blind review supplemented by post-publication open review or commentary.

"This method is limited to those who can actually read the articles (are subscribed) online unless the articles are open access. Without open access this method becomes segregative."

**Reviewer, Agriculture & Food Science, Zimbabwe**



"It is overtly transparent and ensures objectivity in the peer review process."

**Reviewer, Nigeria, Public Health**



"I sign all my reviews. It helps an author understand my critique and forces me to remain polite and respectful, even when I reject a manuscript."

**Researcher, Behavioural Science, United States**



"Reviewers should not know author identity when they review; they should sign their reviews (i.e. disclose reviewer identity to authors). Reviewers need to take responsibility for their critiques."

**Researcher, Behavioural Sciences, South Africa**



### Who is reviewing? Revealing reviewer identities

The responses show no clear consensus on whether reviewers' identities being known to an author affects a reviewer's ability to critique effectively. However, when asked about potential motivations to encourage more researchers to review, the data shows that reviewers are very reluctant to have their identities known, with this seen as a deterring factor.

Some respondents did, however, feel that reviewers should be known to authors (who remain anonymous), as reviewers hold the balance of power.



## 7 Conclusion

We hope this study offers many useful insights, as well as up-to-date views, from the global research community on peer review. It provides a large amount of data, all of which is available to explore at [authorservices.taylorandfrancis.com](http://authorservices.taylorandfrancis.com). The practical and ethical aspects of prevailing peer review models are addressed, as well as opinions on newer open models. The focus groups enabled an exploration of views and nuances between disciplines and roles, as well as a check for global agreement or disagreement. There was much lively interaction in them, ranging from the interrogation of editorial methods to personal tales of peer review and submission practices.

In line with previous studies, researchers agreed that **playing a part in the academic process, and improving papers are the most important motivations to carrying out reviews** (more on motivations to review and training in a later supplement to this white paper). What's more, most researchers rate the improvement of their article as the most important aspect of peer review both in the ideal and the real world, and feel this is being achieved. This is countered though by the responses showing that on a variety of other peer review outcomes, real-world achievement is falling short of ideal expectations. There was some discussion in focus groups about the difficulty of locating reviewers and of a perceived shortage of reviewers but this did not dominate findings overall.

There is a **strong preference for double blind review** among respondents, reflecting both previous peer review studies. There are balanced neutral ratings across the options of open, open and published, and post-publication review; however these questions garnered much commentary in the survey's free text questions and elicited strong views. Personal preference seems a strong influencer, with contradictory views for and against these newer models prevalent across roles, locations and experience levels. It is unlikely consensus can be reached on one best approach, as one person's accountability is another's exposure.

With post-publication review discussion comes the warning that reviews must be moderated and commenters validated in some way. Who takes this on is a discussion to be had. **To sum up views on newer models: those researchers with a view want it all – anonymity preserved by blind pre-publication review coupled with the benefits of transparent identifiable open commentary post-publication.**

In both the survey and focus groups, the role of the academic journal editor comes under some scrutiny. In many respondent and participant reports, it was suggested editors could be doing more quality control work at each end of the review process. Many felt unpublishable papers should not make it past the editor to the reviewer, as they sometimes do now, and unhelpful reviewer reports should not reach authors, but be intercepted by the editor. **In the very many cases where editors are performing the role well, enabling a fast time to publication and efficient handling of papers, large amounts of important work is hidden – no news is good news, as it were.**

But it is important to remember (and was raised in focus groups) that the journal editor's role is not a full-time one – for the vast majority it is an add-on to researching, writing and teaching. This imposes limitations and difficulties, and this study has **highlighted the role of the publisher in providing support and training** (with findings on this area to follow).

There are reports, blog posts, articles, tweets and journalistic pieces weekly, if not daily, concerned with peer review; its challenges, its importance, its inadequacies and its future direction. For all of those determined that double blind pre-publication review is the gold standard, there are an increasing number of open review advocates, amongst them non-native English speakers and earlier career researchers who welcome review in the open and suggest closed review has not always served them well. Increasingly, technological "solutions" are appearing that promise to improve many aspects of the process. These include academic open approaches and commercial ventures. They proliferate at a pace and some will undoubtedly disappear whilst others gain traction. It is an interesting and fast-moving area to watch. **With that said, overall this study still found a fairly conservative researcher view, demonstrating a wish for tweaks to the current systems rather than a radically new way of assessing the quality and validity of research outputs.**

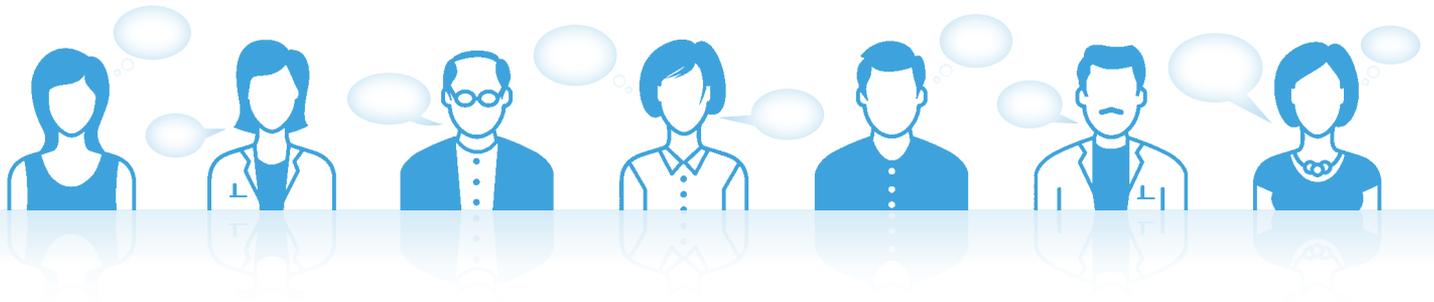
Peer review remains as central to the scholarly endeavor as it remains flawed and contentious. It is right that it should garner such attention and critique, such is its centrality to scientific communication. **It is for publishers, editors and researchers to work across disciplines and organisations to debate, test and innovate.** We should look closely at the risks of inadequately addressing areas of concern, assess evolving models openly and do our utmost to ensure the rigor of peer review is strengthened and preserved well into the future.

## 8 Survey demographics

Below is an outline of survey respondent demographics. Of note are the recency of first paper published and the total number of papers published for each of the groups, with the author group publishing most recently and with fewer papers overall. A higher percentage of STM respondents are male than female. Of HSS respondents, only within the editors group do men outnumber women.

The study data offers more detailed demographics, and is freely accessible at [authorservices.taylorandfrancis.com](http://authorservices.taylorandfrancis.com).

	Authors		Reviewers		Editors	
	HSS	STM	HSS	STM	HSS	STM
Median age	30 – 39	30 – 39	40 – 49	40 – 49	50 – 59	50 – 59
Gender split	41% M 59% F	58% M 42% F	49% M 51% F	68% M 32% F	57% M 43% F	77% M 23% F
Proportion in academic sector	77%	64%	90%	73%	95%	81%
Median year of first paper	2011	2010	2005	2002	1996	1991
Mean number of published papers	8.5	16.8	23.2	43.5	59.5	117.1



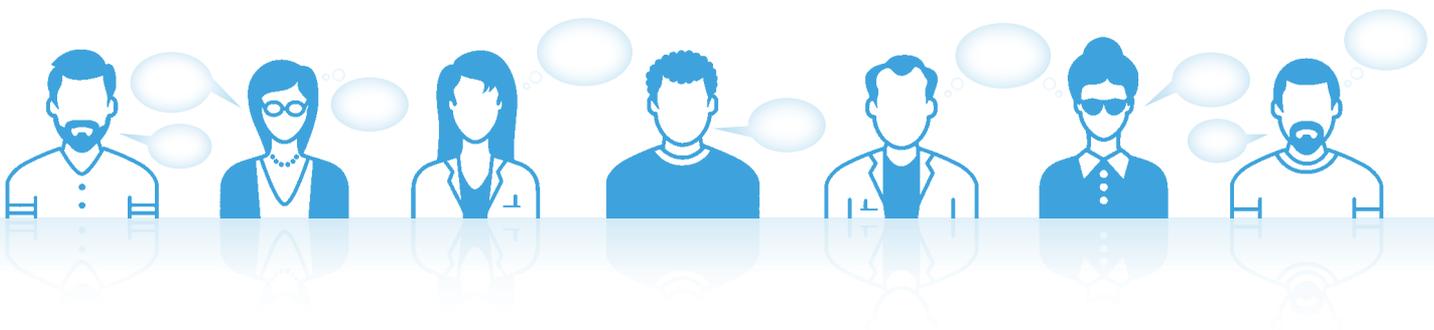
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