Peer review: The experience and views of early career researchers

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Abstract
This paper presents selected findings from the first year of a 3-year longitudinal study of early career researchers (ECRs), which sought to ascertain current and changing habits in scholarly communication. Specifically, the aims of the paper are to show: (1) how much experience and knowledge ECRs had of peer review – both as authors and as reviewers; (2) what they felt the benefits were and what suggestions they had for improvement; (3) what they thought of open peer review (OPR); and (4) who they felt should organize peer review. Data were obtained from 116 science and social science ECRs, most of whom had published and were subject to in-depth interviews conducted face-to-face, via Skype, or over the telephone. An extensive literature review was also conducted to provide a context and supplementary data for the findings. The main findings were that: (1) most ECRs are well informed about peer review and generally like the experience, largely because of the learning experiences obtained; (2) they like blind double-peer review, but would like some improvements, especially with regards to reviewer quality; (3) most are uncomfortable with the idea of OPR; and (4) most would like publishers to continue organizing peer review because of their perceived independence.

INTRODUCTION

The centrality of peer review to scholarship has been reaffirmed in study after study (e.g. Mulligan, Hall, & Raphael, 2013; Nature Publishing Group, 2015; Nicholas et al., 2015a, 2015b; Publishing Research Consortium [PRC]. 2016; Research Information Network [RIN], 2010; Sense about Science, 2009; Taylor & Francis, 2016). True, peer review has many well-known problems, among which problematic scientific gate-keeping, reviewer bias, ineffective detecting of error or fraud, and the suppression of innovation are the most notable (Bornman, 2011; Eghe & Bornman, 2013; Lee, Sugimoto, Zhang, & Cronin, 2013; RIN, 2010; Souder, 2011). Nevertheless, the reviewer’s work has famously been called ‘the lynchpin about which the whole business of Science is pivoted’ (Ziman, 1968, p. 111). What is more, peer review appears to have an ever-more important role in the disintermediated, information-rich, publish-or-perish-driven scholarly environment of the open digital era, in which the value and
dependability of some of the knowledge produced could be questionable (Casadevall & Fang, 2012; Colquhoun, 2011; Ness, 2014; Voas, Hurlburt, Miller, Laplante, & Michael, 2011). This is because the implicit trust that comes with peer review can effectively reduce the complexities of deciding what is worth reading, citing, building on, and being taken into consideration for funding and promotion purposes (Corritore, Kracher, & Wiedenbeck, 2003; Grabner-Kräuter & Kaluscha, 2003).

Indeed, as an international study of 4,000 academic researchers has shown, the digital transition has actually served to augment the perceived scholarly value of the peer review process (Nicholas et al., 2015b). Interestingly, however, it was the young researchers studied who represented a somewhat divergent voice. For example, with regards to choosing an outlet for the publication of their work, they were much less concerned with it being peer reviewed than their more senior colleagues (Nicholas et al., 2015b). Therefore, in this paper, we set out to find what early career researchers (ECRs) thought about peer review and how they perceived they fared in the processes associated with it.

**AIMS AND OBJECTIVES**

This paper reports the findings of an investigation into the experience, views, and criticisms of an international group of ECRs with respect to peer review. Specifically, we aimed to discover:

- How much experience and knowledge ECRs have of peer review, both as author and as reviewer?
- What ECRs feel the benefits of peer review are and whether they thought it fair to them?
- What ECRs thought of open peer review (OPR), a form of peer review alleged to be beneficial to them?
- Who ECRs felt should organize peer review?
- National differences in behaviour and attitude.
- How the findings relate to what previous studies have found, which is important because most past studies do not focus on ECRs.

The data on which the paper is built come from the first-year report of a 3-year, longitudinal study of ECRs, which sought to establish whether they are going to be the harbingers of change when it comes to scholarly communications (http://ciber-research.eu/download/20161120-ECR_Year_1_final_report_071116.pdf).

**SCOPE**

There are many definitions of ECRs (Poli, 2016; for more detail see http://ciber-research.eu/download/20160901-Harbingers-ECRs_literature_review.pdf), and they vary from country to country. After an examination of the literature and consultations with international partners and the PRC, this definition was constructed:

Researchers who are generally not older than 35 and who either have received their doctorate and are currently in a research position or have been in research positions, but are currently doing a doctorate. In neither case are they researchers in established or tenured positions. In the case of academics, they are non-faculty research employees of the university. In addition, included were a small number of ECRs who had come from or were in positions that were essentially servicing clinicians or researchers.

The focus of the study was on ECRs in the sciences and social sciences, which is where the funder’s – PRC (http://publishingresearchconsortium.com/) – main priorities lay and also where the majority of ECRs come from (Higher Education Funding Council for England, 2015). A wide geographical reach was sought in order to support research on issues facing the STM industry globally. Balancing the need for representativeness (with regards to size, importance, level of development, and language) with PRC’s country interests and the availability of interviewers on the ground, the countries chosen were China, France, Malaysia, Poland, Spain, UK, and USA.

**METHODOLOGY**

Complete details of the methods can be found in a project report (http://ciber-research.eu/download/20160916-Harbingers-research_instruments.pdf) and in an article published in an earlier issue of this journal (Nicholas et al., 2017b), with just an abbreviated version provided here. The study was a longitudinal one, one of the very few conducted in the scholarly communication field, which sought to monitor changing behaviours and attitudes of a panel of ECRs over a period of 3 years. Deep, structured interviews were conducted face to face and/or remotely (Skype or telephone). The interview schedule contained around 60 open-
ended questions, but for the purposes of this paper, we are concerned with just these questions:

Do you have experience in responding to comments from peer reviewers on papers you have written and, if so, how did you find the experience?

Have you yourself been a reviewer and, if so, what did you learn from the experience?

Do you feel the peer review system in its current form is fair or does it fail you in any way?

Do you feel that peer review for most journals is in the hands of established researchers who are not always sympathetic to new ideas?

Do you feel peer review could be improved, and if so, how?

For example, do you think that double blind peer review is preferable or would you like all peer review to be open?

Most peer review is organised by publishers. Do you think this is a good idea or do you think it should be done by other entities – for example, learned societies?

Interviews were conducted by national interviewers, largely in their own languages. The proceedings of the interviews were taken down in note form. A transcript of the interview was returned to the interviewee for validation. The record was then translated into English by national interviewers for all non-English-speaking countries and then manually coded using a heuristic approach and a standardized thematic framework.

Table 1 provides the demographics of the ECRs recruited.

### RESULTS AND DISCUSSION

In the narrative that follows, the data from the interviews of ECRs are enhanced by the findings of relevant previous studies and clarified, where necessary, by their national interviewers who are academic researchers.

#### TABLE 1  The characteristics of the national samples (first published in Nicholas et al., 2017a).

<table>
<thead>
<tr>
<th>Country</th>
<th>No.</th>
<th>Subject</th>
<th>Gender</th>
<th>Age</th>
<th>PhD</th>
<th>Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>13</td>
<td>Science: 70% Soc. Sci.: 30%</td>
<td>Female: 46% Male: 54%</td>
<td>Twenties: 46% Thirties: 54%</td>
<td>8% Doctoral students</td>
<td>6</td>
</tr>
<tr>
<td>France</td>
<td>14</td>
<td>Science: 82% Soc. Sci.: 18%</td>
<td>Female: 35% Male: 65%</td>
<td>Twenties: 65% Thirties: 35%</td>
<td>100% Post-docs</td>
<td>4</td>
</tr>
<tr>
<td>Malaysia</td>
<td>12</td>
<td>Science: 58% Soc. Sci.: 42%</td>
<td>Female: 50% Male: 50%</td>
<td>Thirties: 100%</td>
<td>100% Post-docs</td>
<td>5</td>
</tr>
<tr>
<td>Poland</td>
<td>10</td>
<td>Science: 80% Soc. Sci.: 20%</td>
<td>Female: 40% Male: 60%</td>
<td>Twenties: 40% Thirties: 60%</td>
<td>50% Doctoral students</td>
<td>1</td>
</tr>
<tr>
<td>Spain</td>
<td>18</td>
<td>Science: 78% Soc. Sci.: 22%</td>
<td>Female: 44% Male: 56%</td>
<td>Twenties: 40% Thirties: 60%</td>
<td>28% Doctoral students</td>
<td>18</td>
</tr>
<tr>
<td>UK</td>
<td>21</td>
<td>Science: 62% Soc. Sci.: 38%</td>
<td>Female: 38% Male: 62%</td>
<td>Twenties: 24% Thirties: 76%</td>
<td>33% Doctoral students</td>
<td>21</td>
</tr>
<tr>
<td>USA</td>
<td>28</td>
<td>Science: 79% Soc. Sci.: 21%</td>
<td>Female: 41% Male: 59%</td>
<td>Twenties: 27% Thirties: 73%</td>
<td>34% Doctoral students</td>
<td>28</td>
</tr>
</tbody>
</table>

#### TABLE 2  Early career researchers’ experience of being peer reviewed.

<table>
<thead>
<tr>
<th>Country</th>
<th>Experience</th>
<th>Good</th>
<th>Mixed</th>
<th>Bad</th>
</tr>
</thead>
<tbody>
<tr>
<td>China, no. 13</td>
<td>13 (100%)</td>
<td>7 (54%)</td>
<td>5 (38%)</td>
<td>1 (8%)</td>
</tr>
<tr>
<td>France, no. 14</td>
<td>12 (86%)</td>
<td>6 (50%)</td>
<td>6 (50%)</td>
<td>–</td>
</tr>
<tr>
<td>Malaysia, no. 12</td>
<td>9 (75%)</td>
<td>7 (78%)</td>
<td>2 (22%)</td>
<td>–</td>
</tr>
<tr>
<td>Poland, no. 10</td>
<td>4 (40%)</td>
<td>1 (25%)</td>
<td>3 (75%)</td>
<td>–</td>
</tr>
<tr>
<td>Spain, no. 18</td>
<td>17 (94%)</td>
<td>5 (29%)</td>
<td>12 (71%)</td>
<td>–</td>
</tr>
<tr>
<td>UK, no. 21</td>
<td>20 (95%)</td>
<td>13 (65%)</td>
<td>6 (30%)</td>
<td>1 (5%)</td>
</tr>
<tr>
<td>USA, no. 28</td>
<td>24 (86%)</td>
<td>12 (50%)</td>
<td>12 (50%)</td>
<td>–</td>
</tr>
<tr>
<td>Total, no. 116</td>
<td>99 (85%)</td>
<td>51 (52%)</td>
<td>46 (46%)</td>
<td>2 (2%)</td>
</tr>
</tbody>
</table>

**Experiences of being peer reviewed**

Being the productive authors that they are, having published an average of 10 articles and six conference proceedings in their relatively short careers (Nicholas et al., 2017a), our ECRs are quite familiar with peer review. Thus, 85% said they had experience in responding to comments from peer reviewers with respect to papers they had written (Table 2). In the case of Chinese ECRs, all had some experience in answering reviewers’ comments, and the figures are over 90% for the UK and Spain. The most inexperienced group are the Polish ECRs, of whom just 40% had peer review experience, and this could be because there is a higher percentage (50%) of doctoral students among the Poles. Sometimes, inexperience results from their supervisors taking the publishing reins and answering the queries for them, as was the case for two French and four US ECRs.

So, what was the peer review experience for the 85% of our ECRs who had undergone review? Table 2 shows that very few researchers have had a bad experience (2%), most had a good one (52%), but a large minority (46%) had a mixed experience. Of the countries, Malaysian ECRs had the best experience, with 78% stating this, followed by UK ECRs (65%). Spanish ECRs are the least impressed, with only 29% having had a good experience and most of them having a mixed one. Looking at what ECRs said in the form of justification, it seems that they found it hard but enriching.
Positive comments tend to mention that peer review helps improve the paper, keeps them on their toes, and that it is an important learning, albeit painful, experience. The following comments are illustrative:

I am happy with the reviewers, they can direct me to the flaws of my paper, which are sometimes difficult to correct (Malaysia).

It is a learning process, I also learn how to review from the reviewers’ feedback (Malaysia).

It definitely improved the paper (UK).

It stops you being sloppy (UK).

Good even if painful (UK).

The feedback is always constructive, it obliges us to reconsider the issue and to extend experimentations (France).

It was interesting, as it brings new lines of thought from the reviewer’s questions, it is rather positive (France).

This is very much in keeping with Mulligan et al.’s (2013) finding that 91% of researchers said their most recent paper had been improved by peer review.

The mixed comments that came from ECRs reflect the unevenness in the quality of reviewers and their lack of understanding and experience:

TABLE 3  The experience early career researchers have as peer reviewers.

<table>
<thead>
<tr>
<th>Country</th>
<th>Experience</th>
<th>Good</th>
<th>Mixed</th>
<th>Bad</th>
</tr>
</thead>
<tbody>
<tr>
<td>China, no. 13</td>
<td>6 (50%)</td>
<td>6 (100%)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>France, no. 14</td>
<td>7 (50%)</td>
<td>5 (71%)</td>
<td>2 (29%)</td>
<td>—</td>
</tr>
<tr>
<td>Malaysia, no. 12</td>
<td>12 (100%)</td>
<td>7 (58%)</td>
<td>5 (42%)</td>
<td>—</td>
</tr>
<tr>
<td>Poland, no. 10</td>
<td>3 (30%)</td>
<td>3 (100%)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Spain, no. 18</td>
<td>12 (66%)</td>
<td>12 (100%)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>UK, no. 21</td>
<td>16 (76%)</td>
<td>10 (63%)</td>
<td>1 (6%)</td>
<td>5 (31%)</td>
</tr>
<tr>
<td>USA, no. 28</td>
<td>20 (71%)</td>
<td>16 (80%)</td>
<td>3 (15%)</td>
<td>1 (5%)</td>
</tr>
<tr>
<td>Total, no. 116</td>
<td>77 (58%)</td>
<td>60 (78%)</td>
<td>11 (14%)</td>
<td>6 (8%)</td>
</tr>
</tbody>
</table>

Some reviewers are very good, they help to improve your work substantially, after a couple of rounds, but some are really laymen who cannot present valuable feedback! You have to be easy going about this. You have to accept them as humans who make mistakes (Malaysia).

Almost as frustrating is when you are asked by a reviewer who seems to be okay with your paper but then asks you to carry out further work that is completely impractical in the timescale given, or is so very expensive it would require funding to pay for it (Malaysia).

It is a lottery! It depends on referees! (Spain).

For one Chinese ECR, it is much more serious: ‘Sometimes, I encountered racial discrimination’ (China). A French ECR touched on the problems caused by too many publications chasing too few qualified reviewers: ‘The peer review is botched, as there are too many articles (consequences of the pressure to publish) and few experts to do the reviewing’. For another French ECR, it is simply too rushed: ‘Peer reviewer cannot read everything in detail, he reads the general "music" and that’s it’ (France).

Experiences as a peer reviewer

Of the 116 ECRs, 77 (58%) had experience in reviewing, which – given that, by definition, they are starting careers as researchers – is quite impressive (Table 3). However, it does vary considerably by country. Thus, all Malaysian ECRs have experience, which is not surprising as Malaysia is the only country where all the ECRs interviewed are in their 30s, and all of them are post-docs. For the other countries, it varies from 30% in Poland, where half are doctoral students, to 76% in the UK, where three-fourth quarters of ECRs are in their 30s. Some ECRs, such as those in the USA, actually stand in for busy colleagues; that is, they are handed reviews to perform which their seniors do not have the time to do.

The large majority of ECRs (78%) thought peer review to be a good experience, considerably higher than the proportion that thought the same about being reviewed. Maybe this is a case of ‘handing it out is always preferable to receiving it’.

TABLE 4  The benefits of peer reviewing for ECRs as authors.

<table>
<thead>
<tr>
<th>Benefit</th>
<th>China</th>
<th>France</th>
<th>Malaysia</th>
<th>Poland</th>
<th>Spain</th>
<th>UK</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improves writing skills</td>
<td>X</td>
<td>—</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Improves presentation skills</td>
<td>—</td>
<td>X</td>
<td>X</td>
<td>—</td>
<td>X</td>
<td>—</td>
<td>X</td>
</tr>
<tr>
<td>Helps to plug holes in your own knowledge</td>
<td>—</td>
<td>—</td>
<td>X</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Helps to understand the academic publishing process</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Reminds one of general academic norms/standards</td>
<td>X</td>
<td>—</td>
<td>—</td>
<td>X</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Contributes information about latest research</td>
<td>—</td>
<td>X</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>X</td>
</tr>
<tr>
<td>Good for career progression</td>
<td>—</td>
<td>X</td>
<td>X</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Provides an opportunity to suggest the author cites some of your work</td>
<td>—</td>
<td>X</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

ECR, early career researcher; X, mentioned at least once.
Many ECRs commented on their experience and mentioned that they learnt a lot from seeing other people’s errors. Table 4 shows the main positives, many of which are also cited as the positives of being reviewed. In France, those ECRs with peer reviewing experience had more nuanced views, which, however, indicate that being on the other side of the fence enabled them to discover the specificities, difficulties, and responsibilities involved in the process. Doing peer review is so time consuming that it made appreciate much more the work of those who did the peer review of my articles. I learned so much that I’m ready to do it again.

There was just one mention of the possibility that the reviewer can benefit from suggesting that the author cites some of their work, which, according to a recent study, is an uncommon practice in any case (Schriger, Kadera, & Von Elm, 2016).

Other researchers (Casnici, Grimaldo, Gilbert, & Squazzoni, 2016) support the fact that ECRs see the benefits of peer reviewing and are both more willing and industrious in their role as reviewers: junior researchers accept requests to review more often, although they have more requests, and are faster in reporting. This, the authors surmise, may be because junior researchers are motivated to take the reviewing task more seriously, both as a means for learning and for building a reputation with the journal’s editor for future submissions. Warner’s (2016) findings lend support to this possibility: reviewing as a path to improving writing skills, along with reputation building and career progression, were ranked higher by those who have been reviewing for fewer years, and were therefore more likely to be in their early career.

The biggest complaint about the process from the point of view of our ECRs (as authors) is its time-consuming nature, which, interestingly, is not mentioned much in the literature. However, according to the PRC (2016), the average time per article spent reviewing is a median 5 hr. However, as the PRC report notes, this is unchanged from 2007, which suggests that reviewers are not feeling it necessary to trim the time per review in response to increased reviewing (or other) pressures. Hardly surprising, the PRC findings also indicate that there is a steady reduction in the mean time needed for peer review with increasing age, from the under-36 reviewers (9.6 hr) to the over-65 reviewers (5.8 hr), which may be due to increased experience (although there was no correlation with number of papers published) or other factors (e.g. older researchers may have more other demands on their time).

Another major complaint voiced by our ECRs as reviewers is the superficiality of reviewing, largely because it is thought that they are not given sufficient time to do the job properly. Polish, Spanish, British, and American ECRs mentioned this. This certainly comes as no surprise as ECRs’ views on the topic echo those often heard in the scholarly community in general. For example, in the PRC Survey (2016), the third most common reason for declining to review, cited by 21% of respondents, was that the deadline was too short to conduct a high-quality review. By the same token, in the previously cited international project on trust in the scholarly digital environment, respondents associated the variable quality of reviewing to the increasing pressures on reviewers to get the job finished quickly (Nicholas et al., 2015b).

ECRs in all countries commented on the poor writing standards of authors’ papers, which genuinely surprised many ECRs as reviewers. At least half a dozen ECRs mentioned this. A researcher put it like this: ‘at first I thought they had given me just the bad papers and then after a while I realised that was not the case’. This presents quite a problem because, according to the Taylor and Francis (2016) survey, reviewers’ time was found to be spent on language, spelling, and grammar issues, which were considered [by reviewers] to be among the least important among peer review functions. An interesting point in this context is that while in the PRC Survey (2016) only 5% of the respondents cited poor quality English of the paper as the reason for declining to review a paper, it was the younger researchers among them who were more likely to say so. Perhaps, this is because junior researchers are more prone to feeling that they are being used (or abused) by the system or by their colleagues, which is what one UK ECR in our study thought, saying that it was a ruse and that authors had intended them to improve their papers. Of course, there might be other reasons for rejection – for instance, that poor papers are just harder work to get through and that poor writing is an indicator of lower-quality work – so reviewers may prefer to devote their time to more important work.

Finally, two French ECRs felt that reviewing is an uncomfortable experience because they did not feel it legitimate to criticize and reject the paper of their peers. It was not clear whether this is because they lack confidence, but Casnici et al.’s (2016) finding, according to which senior researchers are harsher in their judgments than junior researchers, lends support to this notion.

Is peer review seen to be fair to ECRs?

To begin with, it is important to highlight that when ECRs talked to us about the fairness or otherwise of the peer reviewing system, they generally had double-blind review mainly in their mind as most of them emphasized their concerns about anonymity. In this respect, ECRs certainly endorse the prevalent view in academia: it is widely held that maintaining anonymity makes peer review fairer and, as a result, more effective. This is why double-blind review is considered the preferred method by many (Mulligan et al., 2013; Sense about Science, 2009; Taylor & Francis, 2016; Ware & Monkman, 2008), although, again surprisingly perhaps, the PRC (2016) differed, finding no clear-cut preference shown for single compared to double-blind review. Believed to be the most capable of preventing any reviewer discrimination based on aspects of an author’s identity (Taylor & Francis, 2016), the blinded peer review is thus seen as eliminating bias, encouraging forthright opinion, and allowing the reviewer to focus on the quality of the manuscript (Mulligan et al., 2013).

Indeed, equating peer review with blind peer review, the large majority (66%) of our ECRs think the current system fair, with only a quarter considering it unfair (Table 5). However, as we shall learn, many ECRs who think it fair are not wholly convinced, but they cannot think of ways and means for improving
things. There are, again, considerable country differences, with all the Malaysians endorsing the system whilst the French ECRs are particularly displeased with it (57% thinking it unfair). On the other hand, it comes as no surprise that Malaysian ECRs feel the current system is fair because they are very familiar with peer review, with half being editorial board members of Malaysian journals indexed in Scopus.

The French ECRs are not alone in criticizing the fairness of the review system, and Table 6 lists the broad criticisms raised in open-ended questions by a third of our ECRs who had reservations. One dozen criticisms are listed, showing that there is a wide range of concerns about the system. Among ECRs, there is a high degree of consensus (mentioned in five countries) about two issues – (1) conflicts of interest between reviewers and authors and (2) the process not really being blind – and some degree of consensus (mentioned in four countries) regarding: (1) lack of specialist reviewers; (2) poor editorial control; (3) insufficient time spent on the review; (4) the fact that it is a closed shop; and (5) takes too long. In this respect, again, the ECRs’ views are no different from those widely held among scholars. Thus, previous studies cite a host of problems associated with peer review (Bornman, 2011; Egghe & Bornman, 2013; Lee et al., 2013; RIN, 2010; Shatz, 2004; Souder, 2011), many of which – such as the suppression of innovation or the inability to truly hide the identity of the author – compromise the integrity.

Chinese ECRs are particularly critical about the time it takes to get reviewed, as the following quotes show: ‘It is necessary to shorten the reviewing time span to accelerate the paper publishing procedure’, ‘Another problem is the slow feedbacks of some reviewers’, ‘Sometimes it took half a year for their comments’. Two scientific Spanish ECRs would like to see some kind of evaluation of reviewers based on feedback from authors. They, along with their US and UK colleagues, also feel that reviews would be better and conducted more quickly if the process is rewarded in reputational terms or if reviewers are paid. Payment in kind (e.g. book tokens, free access to websites) was found to be quite effective, and according to Mulligan et al. (2013), it was the most likely incentive to encourage future reviews.

### The potential of OPR

There is not a universally agreed definition of OPR, but its characteristics typically include: (1) disclosure of the identities of author and reviewer to each other; (2) reviewer reports published alongside articles; and (3) only invited experts are able to comment. OPR was brought into the discussions because it claims to address some of the issues that ECRs raised about peer review as they knew it (double-blind). The move towards open review at the end of the 1990s came as a result of concerns that ‘the anonymity involved in both single-blind and double-blind systems can shroud reviewer bias, misconduct or abuse, including misappropriation of ideas and data, failure to disclose conflicting or

---

**TABLE 5** Early career researchers’ views on the fairness of peer review to them.

<table>
<thead>
<tr>
<th>Countries</th>
<th>Fair</th>
<th>Unfair</th>
<th>Mixed</th>
<th>Do not know or did not answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>China, no. 13</td>
<td>11 (85%)</td>
<td>2 (15%)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>France, no. 14</td>
<td>4 (28%)</td>
<td>8 (57%)</td>
<td>–</td>
<td>2 (15%)</td>
</tr>
<tr>
<td>Malaysia, no. 12</td>
<td>12 (100%)</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Poland, no. 10</td>
<td>7 (70%)</td>
<td>3 (30%)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Spain, no. 18</td>
<td>15 (83%)</td>
<td>3 (17%)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>UK, no. 21</td>
<td>13 (62%)</td>
<td>7 (33%)</td>
<td>1 (5%)</td>
<td>–</td>
</tr>
<tr>
<td>USA, no. 28</td>
<td>15 (54%)</td>
<td>6 (21%)</td>
<td>5 (18%)</td>
<td>2 (7%)</td>
</tr>
<tr>
<td>Total, no. 116</td>
<td>77 (66%)</td>
<td>29 (25%)</td>
<td>6 (5%)</td>
<td>4 (3%)</td>
</tr>
</tbody>
</table>

**TABLE 6** Broad reasons why peer review is thought to be unfair by ECRs.

<table>
<thead>
<tr>
<th>Reason</th>
<th>China</th>
<th>France</th>
<th>Malaysia</th>
<th>Poland</th>
<th>Spain</th>
<th>UK</th>
<th>USA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of specialist reviewers, especially with regards to interdisciplinary papers</td>
<td>X</td>
<td>X</td>
<td>–</td>
<td>X</td>
<td>X</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Editorial lack of control (over reviewers)</td>
<td>–</td>
<td>–</td>
<td>X</td>
<td>–</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Conflict of interest between authors and reviewers (they might be a competitor)</td>
<td>X</td>
<td>X</td>
<td>–</td>
<td>X</td>
<td>–</td>
<td>X</td>
<td>–</td>
</tr>
<tr>
<td>Reviews are less blind than they are supposed to be (so less anonymity)</td>
<td>X</td>
<td>–</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>–</td>
</tr>
<tr>
<td>Insufficient time devoted to reviewing</td>
<td>–</td>
<td>X</td>
<td>X</td>
<td>–</td>
<td>X</td>
<td>X</td>
<td>–</td>
</tr>
<tr>
<td>Poor or abbreviated reviews, which do not provide sufficient feedback</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Hard to get original research published because reviewers not receptive to new ideas</td>
<td>–</td>
<td>X</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Reviewers get ECRs/PhD students to do the reviews because they do not have the time</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>It is a closed shop and reviewers and editors are too influential</td>
<td>–</td>
<td>X</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Lack of reputational rewards for peer review work</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Should be done more quickly</td>
<td>X</td>
<td>–</td>
<td>X</td>
<td>–</td>
<td>–</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Better to have a more open process</td>
<td>–</td>
<td>–</td>
<td>X</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

ECR, early career researcher; X, mentioned at least once.
competing interests, or undue or deliberate delays in returning reviews’ (RIN, 2010).

Nevertheless, despite all these advantages, surveys suggest that researchers shun OPR, preferring the option of retaining anonymity for reviewers (Mulligan et al., 2013; PRC, 2016; Sense about Science, 2009; Taylor & Francis, 2016; Van Rooyen, Delamothe, & Evans, 2010). The problem does seem to be the importance accorded to reviewer anonymity: in the PRC Survey (2016), for example, in which OPR was ranked significantly behind blinded review by authors and reviewers, support for open review was nevertheless voiced by about 50–70% of researchers, but this fell to 35–55% if it included publishing signed reviews alongside the paper.

In fact, our ECRs’ testimonies generally exhibited a wary attitude to OPR. Dwelling on the comparisons between double-blind and OPR, rather than answering the broad question concerning possible improvements to the procedure, they certainly made it clear what they thought of the ability of the two methods to lead to a better system. In the UK, as elsewhere, double-blind review obtained the most support, with 17 of 21 ECRs saying they like it. Still, 10 ECRs did support the open variant, which indicates that ECRs could like both forms. A supporter of the open variant, for instance, said that double blind is not realistic in their field (because everyone knew everyone), whereas an opponent felt it made the rejection of manuscripts more difficult. In the USA, ECRs are less interested in OPR than in the UK. They talk about the risk of ‘unwanted effects’. Another ECR put forward the view that it ‘creates unrest among researchers’.

In Poland, as a consequence of their relative junior status, only 4 out of 10 ECRs offered an opinion, with 3 of them saying that double-blind peer review is preferable. With respect to Spanish ECRs, two-thirds (67%) felt comfortable with the double-blind system. It is thought to be fairer, more objective, and less biased. They also said that anonymity benefits young people and women. Only three ECRs preferred OPR, and for them, the benefits (echoing what we have heard from previous studies) are as follows: (1) it enables them to compare the current paper with previous papers from the same author; (2) they can spot duplicate work more easily; and (3) reviewers have to be more polite and professional because they are on show.

The only Malaysian ECR who supported OPR felt that a more open system would reduce the (unchecked) power of the reviewers and editors and furnished a very considered argument: ‘In theory, peer review is a great idea, but it does not work in practice. The main problem is the anonymity of reviewers, the possibility that reviewers might know who the authors are. This may conflict with the reviewer’s own findings, the stealing of research ideas or even the pursuit of scientific or personal feud. Even the peer choice review system may not address potential negative biases, I know at least one fellow academic that I would not trust to review our work with full integrity, although he is an expert in the field. I am keener with the open review system, I salute journals that identify the reviewers with the manuscript they reviewed, make their comments available online. They felt it should be conducted through a scholarly network, like ResearchGate, and should be undertaken before submission to a journal. They also suggested that OPR is conducted by prolific researchers in the scholarly network, who are experts in the field. A few Malaysian ECRs were sympathetic.

However, among French ECRs, there is no call whatsoever for OPR. In fact, they are antagonistic to all things open, feeling that it constitutes ‘A new means of imposing control and evaluation’ and ‘that it is too risky’.

To conclude, then, OPR is not the silver bullet (for ECRs) some have claimed (Groves & Khan, 2010). The use of terms like ‘dangerous’, ‘risky’, and ‘unwanted effects’ indicates that anonymity outweighs the benefits of transparency. There is a sense that opening the reviewing door to everyone means anything could happen and be said. After all, would not reviewers be abused on the social media and why would you want to attract that kind of attention? Even the advocates of open science and open access among the ECRs did not support OPR.

Who should organize peer review?

As Ware (2011) notes, it has been suggested that learned societies might offer peer review/certification services as a future core function. Most of our US ECRs do not show any great enthusiasm one way or another, believing it is really the editor that counts. In the UK, 14 (67%) ECRs said that publishers should manage reviewing, although some of them said this with little conviction. A further two said that they do not know. There is a sense that there really is no alternative and, as one US researcher said, publishers are (more) independent.

In Poland, ECRs consider that peer review should be organized by publishers. The same is true in Malaysia, with the exception of one ECR, quoted above, who said that scholarly networks might be in a good position to do this prior to journal publication. The situation is similar in France and Spain, where most ECRs cannot see the problem in publishers performing peer review. In fact, for French researchers, publishers are the most appropriate stakeholders to handle peer review. They consider that all the other possibilities will lack objectivity. However, in Spain, ECRs do think it is good to include as many actors as possible to gain the maximum quality, objectivity, and independence.

The Chinese are not so sure, split in fact. Thus, half (6) feel it should be publishers, and as one said: ‘It is better to be arranged by publishers, learned societies have other things to do’. The other half either do not think they should or cannot make up their minds. For instance, one ECR points out: ‘Both of them have their own advantages and disadvantages. Publishers sometimes can’t find the most appropriate peer reviewer, but fairness can be guaranteed. The learned societies can find suitable peer reviewers, but the reviewers can be easily manipulated’.

CONCLUSIONS

Peer review can be seen as a form of schooling, which all ECRs have to endure in order to obtain security and to progress in their career. They – and most of them have been reviewed and
review – understand this is the price they have to pay and accept that it is going to be tough now and tough down the road as they climb higher up the ladder and the journal rankings. That is why they are generally supportive of peer review, but that does not mean they would not like changes, not so much going down the road of OPR, which contains too many perils for many of them, increased criticism being one. Rather, they would like changes by: (1) increasing the quality and appropriateness of reviewers, which would lead to more informed and even reviews; (2) ensuring the quality of blind peer review is really blind; and (3) rewarding reviewers either through reputational acknowledgement or by some kind of payment. They believe that a reward would mean that more reviews would be undertaken and completed faster.

There are wide differences between countries, and this can be put down not just to cultural differences (see the case of France below) but also to differences in the composition of the samples in terms of age, experience, and subject; this will be something that will be explored once sufficient data have been gathered after year two of the project. It is evident that French ECRs are a case apart when it comes to peer review, and appear unhappier and more alienated from it. Why, then, is this the case? Well, despite the fact that they publish many articles as first authors and conduct peer review mainly for their supervisors and hence are very familiar with the procedure, they feel pressured to obtain positions and tenure they do not feel for their supervisors and hence are very familiar with the procedure, and whether you have the right connections. As ECRs are not wholly in control of their networks, this leads to greater dissatisfaction, which manifests as unhappiness with peer review. Malaysian ECRs are also often the odd ones out, tending to be more traditional and defending and liking the existing systems and procedures. This is currently being attributed to the greater maturity of the sample.

How do our findings about young researchers compare with what others have found out about the whole research population? In fact, there is a strong level of agreement (indicated in the body of the paper), but because of the national differences (which may be discipline or age differences for the reasons already mentioned), it is not easy to conclude this at such an early stage of the project. However, given this reservation, there is a broad consensus that:

- The benefits of reviewing to ECRs are slightly different from their more senior colleagues, with the learning experience being considered a major benefit.

Limitations

This study is based on a sample of 116 ECRs and is not necessarily representative of all ECRs. The paper also constitutes a baseline study and analyses with regards to subject, age, gender, and age will follow. The project website (http://ciber-research.eu/harbingers.html) contains much more data, and all data will be made available after the project finishes in 2018.

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