















Choosing the ‘right’ journal for publication: Perceptions and practices of pandemic-era early career researchers

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Abstract: Presents early data from an investigation of the work lives and scholarly communication practices of 177 early career researchers (ECRs) from eight countries. Utilizing mainly coded and textual data from interviews, the paper reports on the findings that pertain to publishing papers in peer reviewed journals. We examine which factors are taken into account when choosing the journal to publish their research in, identifying similarities/differences by country, age, academic status and discipline. Also, explored is whether the pandemic has changed decision-making. Main findings are that the aim for ECRs is to publish in the ‘best’ journals, variably measured by prestige, impact factor, standards of peer review and indexation. Appropriateness of audience is the only factor unrelated to the quality of the journal that figures highly among the factors that guide ECRs in the process of selecting a journal. The pandemic has made little difference to the majority of ECRs when they decide on a journal for publishing their research. However, there is a greater awareness of the need for a faster turnover rate, brought on by the importance accorded to speedy publication during the pandemic.

Keywords: early career researchers, impact of pandemic, journal publishing

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INTRODUCTION

It is by now a consistently established, indeed, an almost axiomatic notion that success in the scholarly undertaking, in both career-advancement and reputation-building terms, is contingent on proven research achievements, most notably as measured by papers published in prestigious and high-ranking journals (Blankstein & Wolff-Eisenberg, 2019; Borrego & Anglada, 2016; Cronin, 2001; Harley et al., 2010; Herman & Nicholas, 2019; Mulligan et al., 2013; Nicholas et al., 2015; Nicholas et al., 2017; Nicholas, Jamali, et al., 2020; Niles et al., 2020). With the publication venue thus serving as an important indicator of the extent to which a scholarly achievement is seen as representing a significant—and therefore rewardable—contribution to science, choosing the most appropriate journal for submitting an article inevitably becomes a crucial decision for the researcher. This is all the more so for today's early career researchers (ECRs), compelled as they are to fight harder than past generations for a constantly decreasing share of the academic pie (Hangel & Schmidt-Pfister, 2017; Maher & Sureda Anfrés, 2016; Müller, 2014; Roach & Sauermann, 2017; Waaijer et al., 2018).

Ultimately, of course, while the esteem in which a publishing venue is held in a particular disciplinary community forever remains the overriding consideration, the actual selection of the best-fit-for-purpose journal will likely be based on varying multiple factors, the weighting of each being idiosyncratic to the individual investigator (Forrester et al., 2017). Plainly then, the journal selection process, guided as it is by the externally imposed circumstances of scholarly authors at a given time, is prone to change, which is why its determinants, even if repeatedly identified, need to be submitted to frequent reality checks.

Unvaryingly important as the call to revisit the journal choice process thus is, it has become ever-more imperative now, when the virus-dictated rules of the 'new normal' in the research undertaking (Herman et al., 2021) might have rearranged extant priorities and/or introduced new ones to today's already changing, increasingly open and multi-faceted scholarly publishing system. Add to it the arrival on the scene of new waves/generations of researchers—the millennial ECRs of our study—with their characteristic openness to change (Duffy et al., 2017; FEPS, 2018; Pew Research Center, 2010a, 2010b),

Key points

- Whatever the age, gender, age, status, country or discipline of the ECR the factors involved in journal choice are very similar.
- Open access is not a priority selection criterion for journal selection, even among younger and junior researchers—contrary to expectations of preference due to their millennial beliefs.
- The pandemic has made very little difference to the rankings, with just a small uptick of interest in speed of processing.

and it becomes quite clear why the topic, well-worn and perennial as it may be, needs to be re-explored in order to establish the ongoing validity or, conversely, the changed nature of our appreciations of how novice researchers go about choosing where to place their research.

Aims and objectives

The aim of this study is to investigate the perceptions and practices of pandemic-era ECRs when they set out to choose the most appropriate journal for publishing their research. Its specific objectives are:

- Identifying the factors taken into account by ECRs when they decide on the journal in which to publish their research.
- Determining any changes from the past regarding the factors identified and exploring their possible origins, looking in particular at their traceability to:
 - a. the new realities of scholarly work under the pandemic;
 - b. the growing expansion and acceptance of OA publishing;
 - c. the millennial values characterizing the current generation of ECRs.
- Determining the similarities/differences regarding to the nationality, age, academic status and discipline of the ECR.

Scope

The findings reported here come from the *Harbingers-2—Early Career Researchers and the Pandemic* research project (<http://ciber-research.com/harbingers-2/>), funded by the Alfred P. Sloan Foundation. The project constitutes a 2-year extension (2020–2022) to the original, 4-year (2016–2019), longitudinal *Harbingers* research project (<http://ciber-research.com/harbingers.html>), which explored the working lives and scholarly communication behaviour of 116 junior science and social science researchers in eight countries (China, France, Malaysia, Poland, Russia, Spain, United Kingdom and United States). *Harbingers-2* enables the investigation to continue at a time when the far-reaching effects of the pandemic seem to have brought about unprecedented change in scholars' circumstances, too. In *Harbingers-2*, too, the data are drawn from the aforementioned eight countries, this time covering 177 ECRs from the sciences and social sciences. The results reported here are largely based on the evidence gathered in the first two rounds of three repeat rounds of interviews (for more detail see the Methodology section).

Definitions

For lack of a universally accepted definition of an ECR, indeed, with different and conflicting definitions of ECRs circulating (Hurley & Taylor, 2016; Poli, 2016), which vary from country to country, we have decided on a pragmatic conceptualization of an ECR. Thus, our definition of the term, formulated at the outset of *Harbingers-1*, focusses on the common denominators of their standing in the scholarly world, that is, their being employed in a research position but, being young and in an early phase of their career, not yet established as researchers:

Researchers who are generally not older than 35, 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, some are non-tenure line faculty research employees.

The same definition was used in the current project, a move that was deemed advisable for the sake of preserving the unity of the data and therefore the making of valid long-term comparisons between *Harbingers-1* and *Harbingers-2*.

The reference to subject/disciplinary representativeness in this paper builds on Fanelli and Glänzel's (2013) findings, which support the 'gradualist' view of scientific knowledge suggested by the Hypothesis of the Hierarchy of Sciences—the placing of each field of research, moving from the physical to the social sciences, along a continuum of complexity and softness. Thus, the wide disciplinary area of Social Sciences is divided here into 'hard' disciplines, such as Psychology and 'soft' disciplines, such as Sociology.

METHODOLOGY

The *Harbingers-2* project continues the mixed methodology approach of *Harbingers-1*, as detailed in Nicholas et al. (2019);

Nicholas, Jamali, et al. (2020) and on the project website (<http://ciber-research.com/harbingers.html>), as it provides for a high degree of data triangulation: an ongoing literature review to provide context, deep, semi-directed interviews and follow-up questionnaire survey. The findings reported here, however, represent early insights obtained from the first two rounds of three interviews conducted in 2021 and held with 177 ECRs at 6 monthly intervals. A mixture of both quantitative and qualitative data analysis techniques were utilized to allow a deep analysis of the phenomenon.

Sample and recruitment of ECRs

The sample population comprises both ECRs who participated in *Harbingers-1*, and new ones, recruited to fill the ranks of participants who have left research or no longer qualify as ECRs (e.g., because they obtained tenure). New ECRs were recruited by the eight national interviewers, utilizing their local networks and connections, with numbers supplemented by mail-outs from scholarly publisher lists. Each national interviewer was provided with a quota of interviewees in order to achieve a measure of representativeness from age, gender and subject point of view, and to ensure that the demographics of national samples are as similar as possible. The recruiting target was between 20 and 24 interviewees per country. As noted previously, 177 ECRs were recruited, with a rough gender balance (females 51% and males 49%), but more variation in disciplines. Typically, ECRs were in their early 30s, ranging in age from 23 to 45. The breakdown of the sample obtained is as follows (Table 1):

Data collection: The interviews

There were 54 questions in the interview schedule, a mix of closed, open and hybrid ones, designed to engender discussion. For the full interview schedule see http://ciber-research.com/harbingers-2/20201202-H2-Interview_schedule-1.pdf. The questions covered a wide range of topics pertaining to the impact of the pandemic on ECRs' job, status, career aims, assessment, research directions and working life, as well as their views of transformations yet to come in the scholarly enterprise. Essentially, it was an open-ended conversation, guided and punctuated by more direct questioning (i.e., semi-directed), which, based on our experience, gained in previous studies, most notably in *Harbingers-1*, was a necessary measure to meet the pragmatic need of speeding a lengthy interview along, but also the need to exercise some control and achieve unity in the conduct of 177 multi-lingual interviews.

The interview schedule was piloted with 19 ECRs from the eight countries. Most semi-directed interviews were conducted remotely over Zoom and similar platforms (because of the pandemic), in each ECR's national language, except in Malaysia where English is widely used. The interviews, typically 75–120 min in duration, were recorded, with the transcripts returned to ECRs to ensure accuracy/agreement and to obtain further clarity.

TABLE 1 Characteristics of the ECR sample

Country	China	Spain	France	United Kingdom	Malaysia	Poland	Russia	United States
ECRs	24 (14%)	23 (13%)	20 (11%)	24 (14%)	20 (11%)	22 (12%)	22 (12%)	22 (12%)
Disciplines	Mathematical sciences	Physical sciences	Chemical sciences	Life sciences	Medical sciences	Environmental sciences	Hard social sciences	Soft social sciences
ECRs	22 (12%)	30 (17%)	14 (8%)	21 (12%)	35 (20%)	16 (9%)	18 (10%)	21 (12%)
Status	Doctoral	Post doc	Associate professor	Research fellow	Other			
ECRs	47 (27%)	27 (15%)	38 (21%)	23 (13%)	42 (24%)			
Gender	Female	Male	N/A					
ECRs	86 (49%)	90 (51%)	1 (1%)					
	Min	Lower quartile	Median	Upper quartile	Max			
Age	23	28	32	36	45			

Data analysis

Following the ECRs' approval of the interview transcript, a summary was prepared by national interviewers, which included:

(a) Coded classification of responses to questions, where applicable. The coding fitted a five-point scheme, labelled—in its generic form—Yes; Maybe yes; Don't know; Maybe no; No. It was sometimes necessary to add additional classification where it was important to distinguish a 'don't know' from an equivocation, or 'not answered' from 'not asked'.

(b) Direct quotes and/or paraphrases of the ECRs' responses, when provided.

(c) Interviewers' comments, clarifications and contextualisation of what has been said when provided.

The per-interview synopses were then consolidated into a single matrix and the consistency of coding across national interviewers tested, from which the results presented here are derived.

The research reported here while based as on extensive textual data derived via in-depth interviews, employs numerical methods to attain numbers and percentages that serve to highlight patterns in the data and enable their comparison across countries, disciplines and cohorts of age and academic status. Indeed, the data analysis procedure allowed for the emergence of data-driven first insights, which, then, were complemented, expanded and explicated by the wealth of qualitative evidence obtained in the interviews, and further evaluated within the context of previous evidence-based understandings of ECRs' scholarly life, practices and attitudes. It is important to note that in analysing the data we have been conscious of the dangers of over-analysing small quantitative variations in responses, particularly so given the disparities in academic systems between the countries studied. Given that the algorithmic processing was, as noted, aiming only at the identifying of patterns to serve as the basis for a more comprehensive portrayal of the factors that come into play when an ECR sets out to choose a journal to publish in, no attempt

has been made to apply any strong tests of statistical validity or significance based on sampling theory.

In this paper, we focus mainly on the replies to two questions, although data, obtained via other questions that impinge on our topic, are also referred to and/or cited:

(1) When choosing a journal to submit to, which factors rate most highly? The respondents were furnished with a list of 7 factors and asked to score each on a scale 1–5, with 5 the most important, which meant a lot of quantitative data was obtained. The choice of factors was informed by data obtained in *Harbingers-1* (Nicholas et al., 2017) and more discussion on this can be found at the beginning of the results section. These data are supported and explained by a careful selection of quotes and interviewer interpretations.

(2) Is the pandemic likely to change relative ratings? ECRs could answer: Yes, No, Do not know and those who replied yes were asked for an explanation. The explanations (10) were thematically analysed in order to identify patterns.

RESULTS AND DISCUSSION

Factors involved in journal choice

As noted, *Harbingers-1* illustrated just how many (overlapping) factors come into play when ECRs are given full rein in making their selections of the factors involved in journal choice (Nicholas et al., 2017). Indeed, *Harbingers-1* interviewees identified 17 factors, presented here in order of prevalence: (1) Indexed in WoS and/or Scopus; (2) High IF; (3) Relevant to the field; (4) Generally considered prestigious; (5) Appropriate audience; (6) High standards of peer review; (7) Fast processing; (8) Trusted and used in past; (9) Interdisciplinary in coverage; (10) Approved by university/government; (11) Open access; (12) No page charges or article processing charges (APCs); (13) Easier to get into; (14) Contains innovative features; (15) Practices open peer review; (16) Has both hard copy and online variants; (17) Familiar editor or editorial board.

Having thus come armed with prior understandings of the exploration of the topic, it was felt that we could make a more direct and informed approach to the interviewing of *Harbingers-2* participants. Interviewees were, thus, presented with a relatively direct question: 'When choosing a journal to submit to, which factors rate most highly?' Obviously, as the question formed part of an ongoing and generally open conversation, it was not necessarily delivered verbatim, and left room for the ECRs to challenge, disagree and elaborate on the topic. Nevertheless, five of some of the most important among the aforementioned *Harbingers-1* factors (bar indexation, a point we will come to shortly) were proffered as a kind of check list or prompt, for the interviewees to score on a scale of 1 unimportant to 5 very important: (a) High IF; (b) Prestige; (c) Appropriateness of audience; (d) High standards of peer review; (e) Fast processing. Relevant to the field (3) was not included as this was felt to be a given and was not so much a choice. Open access, despite only being rated 11th was included however because the pandemic has raised its profile because of the need to provide rapid access to research.

One new factor—geographical location—was added to the checklist of the factors involved in journal choice. The extent to which ECRs take into account where a journal is published when they decide on a suitable dissemination venue was thought to merit further investigation for two main reasons. One was the hopeful notion that the pandemic-associated developments towards greater trans-nationalization of collaborative research activity, aimed at combatting the virus, might have paved the way towards a truly borderless scholarly world (Korbel & Stegle, 2020; Radecki & Schonfeld, 2020). Were it so, the long-identified dividing lines between 'core' and 'periphery' in world science could have rendered the country where a publishing outlet originated from of no real consequence (Guédon, 2007). However, as it transpired, despite calls for greater collaboration and early studies indicating a surge in collaborate efforts, so far there has been less international collaboration on COVID-19 research than expected (Aviv-Reuven & Rosenfeld, 2021; Cai et al., 2021; Cunningham et al., 2021; Fry et al., 2020).

As to the aforementioned factor of indexation in Scopus or WoS, the main criterion opted for in *Harbingers-1*—and by some margin at that (Nicholas et al., 2017)—initially was not on the list of prompts. We already knew from a pre-analysis of the *Harbingers-2* ECRs' CVs that over 90% of their papers were listed in Scopus or WoS, so it was felt we would be asking the obvious, especially as factors are not mutually exclusive and for many researchers a high impact factor actually means indexation in either or both of these databases. Thus, for example, in Spain, where science ECRs are required to publish Quartile1 in WoS, or at least Quartile 2 if they cannot reach Quartile 1, 'indexed in WoS' is taken for granted, so much so, that asking about it was felt to be a redundant question. However, the coding process indicated that the factor of indexation, often raised voluntarily in open conversation, was too important a factor to be excluded from the analysis (e.g., some ECRs were actually told by their authorities to publish in a Scopus or WoS journal). Thus, somewhat belatedly, as it was not feasible to raise the topic with all interviewees at that stage, we did add the

TABLE 2 Range of average scores allocated by the various case study countries

Country	Min	Max	Range
China	1.2	5.0	3.8
France	0.9	4.8	3.9
Malaysia	2.3	5.0	2.7
Poland	1.6	5.0	3.4
Russia	1.3	4.9	3.6
Spain	0.7	5.0	4.3
United Kingdom	0.6	4.8	4.3
United States	1.3	4.9	3.6

factor to the list of prompts, which therefore rose to eight factors in all. Obviously in Round 2 of the interviews the eight-items list was the one used, the impact of which, as we are about to see, was significant indeed.

Before presenting the results of the analysis of factors, it is important to note that while the rating indicates the relative importance of each factor to each ECR, it does not necessarily make a valid comparison between ECRs. For example: if ECR A gives impact factor a score of 4 and prestige 5, we can say that A rates prestige higher than impact factor; if ECR B gives impact factor 3 and prestige 4, the relative ranking of the two factors is the same as in the case of A, but what is the most appropriate comparison of the evaluation by A and B? This conundrum becomes apparent when we look at Table 2, which compares the range of scores allocated. The range used by ECRs in Malaysia is notably truncated (2.7) while that of ECRs from Spain and the United Kingdom are wide ranging (both 4.3). In fact, Malaysia is also unusual in rating six out of eight factors as important (4), hence their narrow range. This is a complex issue which we hope to explore with greater refinement at a later stage in the interview programme. For now, we present both average score and rank of factors.

Next, we turn to the importance accorded by ECRs to the various factors taken into consideration when it comes to choosing a journal. Table 3 shows the average score of factors by country based on round 1 interviews. Average score is sum of ECRs score for each factor divided by number of ECRs. For example, for US the high impact factor score was calculated as $(1 \times 0 + 2 \times 3 + 9 \times 4 + 11 \times 5)/23 = 4.2$. The overall scores from Round 2 data are presented in the last column for comparison.

Prestige emerges overall as the most important factor (4.4), rated highest by China (4.8), Russia (4.6) and France (4.2). High IF was the most important factor for Spain (4.7) and Poland (4.3) and appropriateness of audience for the United Kingdom (4.3) and the United States (4.6).

For the reasons given earlier, indexation in Scopus/WoS was not prompted for in interview Round 1, but ECRs raised it spontaneously in their answers. This probably explains why its scored relatively lowly (1.7). Malaysia was, however, an outlier, with 'indexed in Scopus/WoS coming first, with almost a maximum

TABLE 3 Journal choice: which factors rate most highly in each country during Interview Round 1, followed by the average for Round 2 interviews (average score)

	China	France	Malaysia	Poland	Russia	Spain	United Kingdom	United States	All (R1)	All (R2)
1. Prestige	4.8	4.2	4.5	4.0	4.6	4.6	4.2	4.3	4.4	4.4
2. High impact factor journal	4.2	4.0	4.4	4.3	4.2	4.7	3.7	4.2	4.2	4.1
3. Appropriateness of audience	4.5	3.4	4.2	3.6	3.7	3.5	4.3	4.6	4.0	4.1
4. High standards of peer review	3.8	3.1	3.8	3.6	4.1	2.7	3.3	4.1	3.5	3.3
5. Speed from submission to publication	3.3	2.6	4.7	4.2	3.9	2.9	2.6	3.1	3.4	3.2
6. Open access	2.0	2.8	4.3	3.5	3.2	2.1	3.2	2.9	2.9	3.0
7. Indexed in Scopus/WoS ('written in' R1)	1.0	3.7	4.9	4.1	0.7	0.0	0.0	0.0	1.7	3.6
8. Geographical location	0.5	0.9	2.6	2.1	1.8	1.1	0.6	1.7	1.4	1.6

score (4.9). The importance of indexation in Malaysia is partly explained by the fact that in this country publishing in WoS or Scopus-indexed journals is a policy for research universities, indeed, a requirement for hiring, promotion and tenure, as well as for Ph.D. graduation, so that indexation becomes a proxy for other factors. By the same token, Poland, too, rates indexation highly (4.1). In discussion, the Polish ministerial list of journals was also raised, which is based on WoS/Scopus rankings. As in the case of Malaysia, with Polish scientists (and whole universities) evaluated on the basis of publications listed in WoS/Scopus and reinforced by their presence in a ministerial list, indexation comes to the fore. Hardly surprisingly perhaps: after all, indexation equals validation, ensuring as it does that the work counts for hiring, promotion and tenure. Beyond that, indexation entails a greater chance to be available in library databases, which means that the published articles have a higher chance of being found, read, and, hopefully, cited.

When indexation was included as a prompt in interview Round 2 it more than doubled its score to 3.6 (see final column of Table 3). There were no other obvious changes in the scores for the other factors in R2.

Other than appropriateness of audience, which obviously must be taken into account, for there is no point in reporting to an audience that has no familiarity with or interest in a topic, the factors accorded the most importance among the criteria for deciding where to publish have one common denominator: the overarching objective of publishing in the 'best' journals. Indeed, a high impact factor, a prestigious brand-name, indexation in WoS and Scopus—certainly where institutional or governmental policies dictate it, but elsewhere, too—even, arguably, high standards of peer review (although not as obvious) are all factors that serve as indicators of quality for ECRs. The difference between the various factors is whether the appraisal of what is 'best' is based on mandate, becoming, therefore, normative and rewardable (where indexed), on 'everyone just knows' (prestige) or on a commonly accepted 'market' metric (impact factor), or, in the case of peer review, a competitive challenge—'am I good enough to pass this test?'. The relationship between prestige and IF is worth reflecting on, but our initial impression is, as exemplified by the Malaysian data, that they are very much seen as being the

same thing. This would appear true of the UK too, at least judging from what one UK mathematical scientist said—*I usually conflate impact factor and prestige in a discipline*—so it may very well be that they do not distinguish between a metric and a qualitative opinion. However, possibly, this view is unique to this specific interviewee, while other UK ECRs, indeed, ECRs elsewhere think differently, so we shall be collecting information on this in the forthcoming stages of the study.

ECRs accord importance to speed of publication too, and with good reason. After all, researchers are judged on the basis of their productivity (Herman, 2018), and ECRs are no exception (Nicholas et al., 2018), which obviously means that the sooner a publication is added to their CV, the better. This state of affairs is best exemplified by the situation in Malaysia, where speed of publication is especially rated highly (4.7) because ECRs have to publish a certain number of articles to meet annual publication Key Performance Indicator (KPI) targets.

From among the factors involved in journal choice, the least importance is accorded by our interviewees to that of geographical location, as indicated by the average score of 1.4 and 1.6, respectively, in Round 1 and Round 2 of the interviews. Having learned from the literature, as noted, that the pandemic did not actually do much to tear down the dividing lines between 'core' and 'periphery' in world science (Baker, 2020; Cai et al., 2021; Fry et al., 2020), our ECRs' paying barely any attention to the geographical location of a journal cannot be taken to represent the encouraging developments in this area that might have been hoped for. More worryingly, perhaps, the extent to which ECRs ignore where a journal is published when they decide on a suitable dissemination venue, despite the widely known association of predatory publishers with specific countries (Frandsen, 2017; Moher et al., 2017), might be an indication that falling into the predatory publishing trap is not at the forefront of their minds. Of course, it is not so easy to determine the country of publication, for instance, Nature is based in London but is owned by Springer Nature, whose headquarters are in Heidelberg. However, it is important to remember that inclusion in indexes, widely held to be evidencing reliability, mitigates the problem, both for the researcher and their institutions and funders: indexation becomes a proxy for reliability, indeed, a reputable index

functions as an officially approved list of 'valid' journals (which, incidentally, absolves nation-wide or university authorities from the need to compile their own). Spain provides a good illustration of this, where ECRs when asked if they have a policy to avoid predatory journals said they did not have one but that they feel safe as they only publish in WoS journals.

What is probably most interesting of all is the low esteem in which OA journals are held among our ECRs when it comes to the selection of a publishing venue. The promotion- and sanctioning-driven rapid expansion of open access publishing, in general, and the strides that millennial ECRs have made in closing the gap between attitude and practice when it comes to OA publishing, in particular (Nicholas, Hamali, et al., 2020), might have resulted in a preferential attitude to OA journals. However, according to the findings reported here, OA is still among the least appreciated factors taken into consideration when choosing a journal to submit to, generally ranked only 6 out of 8 factors, with an overall average score of just 2.9 which barely rises (to 3.0) in Round 2. It is only in the case of Malaysia where OA rates as important (4), but then ECRs told us only if publication in the journal comes with no APCs, that is, either the diamond or the bronze OA models (Björk, 2017; Brock, 2018), or if the journal is listed as Q1/Q2 in WoS, which means that it is university-subsidized. OA is rated the lowest in China (2), which is rather damning, given what a major player in scholarly communications the country is these days. Seemingly, not much momentum here for OA, then, despite the esteem in which the publishing model is held among our ECRs, as one US interviewee put it: *That's pretty important for us and I'm actually grumpy that we recently submitted to a journal that I only found out after the fact, we realized that we couldn't make it open access, and now I feel like a bad person that I didn't do my due diligence.*

However, there are mitigating circumstances that can explain the discrepancy that still remains between the favourable light in which ECRs see open access and the extent to which they deem it an important consideration when they set out to choose a publishing outlet. Thus, perhaps the greatest obstacle for ECRs when they contemplate publishing OA is the costs involved, which has

been shown in *Harbingers-1* to be the overwhelming concern, despite the fact that it is usually the Principal Investigator (PI) who holds the purse strings (Nicholas, Hamali, et al., 2020). Indeed, the issue of cost was repeatedly raised in the interviews of *Harbingers-2*, too. Also, it may very well be that once a journal meets their primary requirements (high IF, prestige, right audience), they will opt for it, whether OA or not, especially as their decision-making processes may not be as considered as could be, as another US interviewee put it: *It's actually kind of weird... To me, there are some projects where I'm like "I think this should be Open Access." It's kind of an intuitive, weird...I haven't verbalized why I think that, but then with most projects I think, I don't really care if this is open access or not.* Finally, as we are about to see in the section on the breakdown of the data by age, open access may not be so much a young person's cause as that of a particular generation, senior researchers and PIs by now, whose word in choosing a journal may carry more weight.

Sub-analysis by demographics

Age

Table 4 presents average score (1 as no importance to 5 as high importance) for each factor by two major age groups. It also presents the overall rank for each factor from 1 (highest rank) to 8 (lowest rank) based on average score. For instance, prestige is ranked the highest (1) out of eight factors for both groups as it received the highest average score by both groups. There is no obvious difference by age between the oldest and youngest cohorts in their approach to choosing a suitable venue for publication. This is perhaps not wholly unexpected, for the age spectrum of our interviewees (from mid-20s to early 40s), while spanning 20 years or so, may not matter all that much: we are talking here of ECRs—by our, and even more importantly by their own definition—who are all still on the 'rocky road' to becoming established and reputable academics and, as such, very much focussed on advancing their careers. As endeavouring to do so undisputedly means publishing in top quality journals, they are

TABLE 4 Journal choice: Factors by age

When choosing a journal to submit to which factors rate most highly	Average score		Rank	
	Oldest 50%	Youngest 50%	Oldest 50%	Youngest 50%
a) High impact factor journal	4.4	4.1	2	2
b) Prestige	4.5	4.4	1	1
c) Appropriateness of audience	4.0	4.0	3	3
d) High standards of peer review	3.5	3.6	4	4
e) Speed from submission to publication	3.4	3.4	5	5
f) Open access	3.1	2.8	6	6
g) Geographical location	1.6	1.2	8	8
h) Where indexed	1.9	1.5	7	7

bound to opt first and foremost for indicators of quality in their selections of publishing venues. Still, one aspect of their behaviour is interesting and that is the score for OA publishing, which seems to run counter to the aforementioned open and transparent beliefs attributed to millennials (Duffy et al., 2017; FEPS and ThinkYoung, 2018; Pew Research Center, 2010a, 2010b). One might have expected at least the younger end of the age-spectrum to favour OA journals in their choices of journals to publish in, but as Table 4 shows, that is not the case; in fact, they are even marginally less likely to do so. Clearly the data show that other factors are prioritized in selecting journals in which to publish.

Gender

Gender was examined, but there was so little difference between genders it is not reported here.

Academic status

Seeking to examine age-associated similarities/differences among our ECRs through another lens, possibly a more accurate one, as the age range of the interviewees does vary a little by country, we looked at variance by job status. Table 5 shows the average score (1 as no importance to 5 as high importance) by academic status. However, here again there was very little difference between the cohorts of doctoral ECRs, postdocs, research fellows and assistant professors in their tactics of choosing a journal for publishing their work, with all opting, more or less in equal measures, first and foremost for factors that represent quality. Interestingly, though, when it comes to OA, while there was no real difference in ranking, on average the difference between doctoral ECRs (3.2) and assistant professors (2.6) was a little greater than the difference between the youngest (2.8) versus the oldest ECRs (3.1). Suggesting, as the status-associated finding does, that doctoral ECRs, who are inevitably the younger cohort, are more favourable to OA than assistant professors, thus overturns the previous, age-associated finding. Plainly then, the jury is still out on the role played by age or academic status when it comes to

ECRs' attitude to open access in their deliberations where to place their research for publication.

Overall, however, answers to questions elsewhere, especially regarding transformations and what ECRs might do to improve/change things, indicate that ECRs certainly would like to publish open access if funding existed for it. For instance, a Polish Environmental Scientist said: *If we have the means (from projects), we try to publish in OA. OA contributes to science, it is a very good direction, I use/read it myself, with one click I have access to the text.* Similarly, a Russian hard Social Scientist said: *If there is funding, then why not to publish in open access? If you need to save funding, then it is not necessary. If a researcher spends not their own money, but the money of the laboratory, then why not.* Nevertheless, a US Chemist, commenting on a better publishing future, leaves little doubt that OA may be very much favoured, but it still has some way to go before it is widely practiced: *Mainly open access. One in which there is faster and more efficient peer review. That's what a better system would look like to me.*

Discipline

The most interesting discipline-related feature emerging from the data is the constancy of views across the various subject areas when it comes to the factors involved in choosing a journal. Plainly, there is wide agreement among disciplines as to the ranking of the factors (Table 6), as well as to the level of importance accorded to each of the factors (Table 7). At first glance, this seems somewhat unexpected, given the long-established diversity among disciplinary areas, which dictate very different research-practices (Budd, 1989; Line, 1973; Meadows, 1974), but only at first glance. After all, with the aim of publishing being the same for all scholarly authors, regardless of discipline—the building up of their record of achievements and thereby the enhancing of their reputation—choosing the 'right' journal must be contingent on the factors that can best serve this purpose.

Indeed, as Table 6 shows, nearly all disciplines rank prestige and impact in first and second place, and geographical location last, although there are a few small standouts. Thus, the hard social sciences are keener on OA and the soft social sciences are more appreciative of speed of publication than other disciplines.

TABLE 5 Journal choice: Factors by academic status (average score)

When choosing a journal to submit to, which factors rate most highly	Doctoral	Postdoc	Research fellow	Assistant professor	Other
a) High impact factor journal	4.1	4.4	4.2	4.2	4.2
b) Prestige	4.3	4.3	4.6	4.4	4.5
c) Appropriateness of audience	4.1	3.7	3.7	4.0	4.2
d) High standards of peer review	3.5	3.3	3.9	3.6	3.6
e) Speed from submission to publication	3.3	2.9	3.3	3.3	3.9
f) Open access	3.2	2.3	3.0	2.6	3.3
g) Geographical location	1.2	1.0	1.4	1.4	1.9
h) Where indexed	1.7	1.7	0.0	1.0	3.3

TABLE 6 Journal choice: Factors by discipline (rank)

When choosing a journal to submit to which factors rate most highly	ALL	MATH	PHY	CHEM	MED	LIFE	ENV	SOCH	SOCS
a) High impact factor journal	2	2	2	1	2	2	2	1	2
b) Prestige	1	1	1	1	1	1	1	3	1
c) Appropriateness of audience	3	3	3	4	3	3	3	2	4
d) High standards of peer review	4	4	4	3	5	4	4	5	5
e) Speed from submission to publication	5	5	5	5	4	4	5	6	3
f) Open access	6	6	6	6	6	6	5	4	7
g) Geographical location	8	8	8	8	8	8	8	7	8
h) Where indexed	7	7	7	7	7	7	7	8	6

TABLE 7 Journal choice: Factors by discipline (average score)

When choosing a journal to submit to, which factors rate most highly	ALL	MATH	PHY	CHEM	MED	LIFE	ENV	SOCH	SOCS
a) High impact factor journal	4.2	4.0	4.4	4.3	4.3	4.0	4.1	4.1	3.9
b) Prestige	4.4	4.3	4.6	4.4	4.5	4.5	4.6	3.9	4.4
c) Appropriateness of audience	4.0	4.0	4.2	3.9	3.9	4.3	4.2	3.7	3.5
d) High standards of peer review	3.5	3.6	3.6	3.9	3.4	3.6	3.9	3.2	3.4
e) Speed from submission to publication	3.4	3.4	3.2	3.4	3.5	3.2	3.3	3.1	3.8
f) Open access	2.9	2.7	2.7	2.7	2.9	3.4	3.1	3.2	3.0
g) Geographical location	1.4	0.7	1.5	1.3	1.2	1.5	1.5	1.7	2.0
h) Where indexed	1.7	1.9	1.7	1.6	1.6	1.6	1.2	1.1	2.5

The consistency of views among disciplines is also evident when examined through the lens of the average score (from 1 as no importance to 5 as high importance) given to the different factors (Table 7). Thus, for example, prestige is given the highest scores, with all disciplines, bar one, rating prestige most highly, with the average score given this factor ranging between 4.3 and 4.6, the only exception being the hard Social Sciences (3.9). The high impact factor of a journal is also greatly appreciated across disciplines, with the average score given this factor ranging between 3.9 and 4.4. Within the surprising consistency in the scores given by different disciplines, the minimal differences found indicate that prestige is most important to Physics (4.6) and Environmental Sciences (4.6), high impact factor to Physics (4.4) and appropriateness of audience to Life Sciences (4.3). By the same token, speed of submission, ranging between 3.1 and 3.5, is deemed somewhat more important by the soft social sciences (3.8) and open access, ranging between 2.7 and 3.2, by the life sciences (3.4).

Impact of pandemic

As the study had at its heart the effects of the pandemic on ECRs, the exploration of the factors guiding the choosing of the most appropriate journal for publishing their research was followed up with a query into the possibility that the virus might

have brought about a change in journal choice considerations, too. The interviewees were asked therefore whether the pandemic was likely to change the relative ratings of the factors, with the answers coded as Yes, No, Don't know. Some ECRs, especially those among them who thought that the pandemic was indeed changing things, provided explanations, too.

The interviewees resoundingly felt that in this case the pandemic would make no difference at all, with 158 ECRs (89%)

TABLE 8 Pandemic changing ECRs' considerations when choosing a journal? (by country)

Country	% saying no difference
China	79%
France	95%
Malaysia	90%
Poland	95%
Russia	77%
Spain	96%
United Kingdom	88%
United States	95%
Total	89%

being of that opinion, only 10 (6%) saying it would and 8 (5%) saying that they did not know (Table 8). As it emerged from the answers, they believed that no change was forthcoming largely because university and grant funders' publishing requirements had not changed. ECRs are very pragmatic, as the following quote from a Malaysian Physical Scientist demonstrates: *I have no problem to channel my work in any criteria you mention, but I think when it comes to the publishing, then you follow your mind, you go target your submissions to where your university wants you to publish.*

Looking at the breakdown by countries, Spain (96%) was the most adamant there would be no change and only in the cases of Russia (77%) and China (79%) were there at least some doubts.

The 10 ECRs who said that the pandemic would change things were asked to describe what the changes might be. A US Mathematical Science ECR talked of the possibility that the pandemic *...might make the geographical location even less important, because everything's going to be virtual.* However, the majority (6) of the ECRs felt that it was speed of publications that would change, becoming more important, as the following quote from a Russian Medical ECR exemplifies: *As a result of the pandemic, it seems to me that medical journals will have priorities in the speed of publication. For medical journals, this is very important in order to quickly understand how to treat patients, especially patients with coronavirus infection. It is not advisable to wait six months for a paper on how to treat coronavirus when people are already sick now. I hope that the pandemic will push all editors to release the post as quickly as we can to deal with this pandemic.* Highlighting a different aspect of the impact that the pandemic might have on speed of publication, as a result of submissions piling up as they do in the wake of the disruptions to normal working life, one interviewee, a Medical Scientist from the US says: *I think it does change the speed with which I resubmit. I don't know if that matters, but often I'll submit stuff to top tier journals fully expecting it to be rejected pretty quickly, and they're not rejected pretty quickly. I think everybody is so backed up, so that's kind of frustrating, because then you don't have an opportunity to get it out again as quickly as you normally do.*

It might have been thought that increased speed of publication would attract greater interest than we found, but this generally was not the case, despite ECRs' pressing need—and will—to publish their work quickly, especially, as the pandemic amply illustrated, when it is a new breakthrough that is being reported. Undoubtedly, where top journals are concerned, slowness of handling (or deliberation) is expected and does not matter, as long as they get in, as a US Life Scientist explains: *...even if Nature said it takes them two years to publish a paper that wouldn't deter me from submitting, probably.* Also, a US Medical Scientist may express a prevailing opinion (or not) when he says: *...I don't believe them when they say it takes a certain amount of time. I just don't trust that. Honestly, as long as it gets published sometime, it's not that important to me.*

Few of those who thought things would not change because of the pandemic provided a reason for thinking so, but the comment of a British Medical Scientists provides the tone of those

that did: *Is the pandemic likely to change these relative ratings? No these are set.*

CONCLUSIONS

The main conclusion emerging from this exploration of the perceptions and practices of pandemic-era ECRs, when they set out to choose an appropriate publishing outlet, is that they play it safe and by the rules. Concerned mainly with advancing their careers, they have little freedom to innovate and risk reputational damage. Rather, looking as they are to publish in the 'best' journals, ECRs are of one in judging a publishing outlet by factors that represent for them traditional measures of scholarly quality. Indeed, the rankings they give to the various factors, seen as representing the quality of a journal, are nearly universal, with only small variations being observed when the data are analysed by any demographic factor, or when cross-tabbed with other interview answers. Quality is then the overriding consideration, however, measured: by prestige—the esteem in which the journal is held in the field; by impact factor—the 'market' metric, widely seen as a reliable measure of quality in the scholarly world; by indexation in WoS or Scopus—databases that represent for the researchers themselves, but also for institutions and funders, a mark of official approval and indication that the work counts for hiring, promotion and tenure; and, to a lesser extent, even peer review, which is taken as evidence that the work (and its authors) emerged victorious in the competitive challenge that peer review is.

Beyond quality, appropriateness of audience, an obvious requirement if a work is to reach the interested and expert readers it is intended for, is deemed important too by many. Arguably, this greater interest in audience might have been spurred on by the importance accorded to outreach activities, demonstrated only too visibly by the pandemic. Speed of publication is appreciated, too, which is certainly understandable, as researchers, judged on the basis of their productivity, are always keen to add a publication to their record as soon as possible. However, OA is still proving to be no challenge to what seems to be the cemented scholarly order of things, despite the overall approval of its basic tenets. This state of affairs can be traced back to the costs involved in open access publishing, which is seen as a real obstacle by our ECRs and to the fact that OA is not among their primary, mostly quality-centred requirements from a journal. Neither is geographical location of a journal seen as of consequence in deliberations of an appropriate publishing venue, although not because the pandemic has brought about the hoped-for levelling of the scholarly playground—it has not. Rather, it seems to stem from a patent disregard of the possibility that journals originating from some countries may be predatory dissemination channels. Given the stamp of approval that indexation of a journal in WoS or Scopus represents, it is, perhaps, a justifiable practice.

As to the impacts of the pandemic on the perceptions and practices of ECRs when they set out to choose the most

appropriate journal for publishing their research: at least according to the findings in Round 1 of the interviews, for the vast majority of ECRs these have been quite negligible. The one real change that is thought to be forthcoming, at least by a few of the interviewees, concerns the need for faster processing of submissions, clearly brought on by the pandemic. With speed of publishing becoming paramount during the pandemic, it may have woken researchers up to the fact that the process from submission to publication simply takes too long, if, in the case of top journals, a price worth paying. Still, with all that the pandemic highlighted the importance of rapid dissemination of research, it is a factor that seems to have remained a marginal consideration when deciding on the 'right' journal for placing one's research.

Another of the effects of the pandemic were the great efforts undoubtedly put into making papers more openly available, a move that might have been expected to raise the profile and bring to the fore the benefits of OA publishing or, indeed of publishing OA articles in hybrid journals. However, as our findings amply demonstrate, no uptick has been spotted (yet?) in the importance accorded to a journal's being open access when it comes to choosing an appropriate publishing channel. However, the data reported here reflects the realities of the beginning of the pandemic and we will follow with interest to see whether the final round of interviews will paint a different picture.

LIMITATIONS

ECRs participating in the study constitute a convenience sample and therefore, the generalizability of the findings to the population of ECRs, as a whole, cannot be guaranteed. The results presented here are indicative and are not meant to be conclusive by any means. Some of these findings will be tested on a wider population in the last phase of the study through an international survey.

AUTHOR CONTRIBUTION

David Nicholas and Eti Herman provided the design and oversight of the article and wrote much of it. David Clark provided methodological input and data analysis as Hamid R Jamali provided technical advice. All the other authors, with the exception of Carol Tenopir and Suzie Allard provided country contributions. The latter two provided project oversight.

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