

Early career researchers, scholarly communications and the pandemic

Interview Schedule 2020¹ (interviewer's version)

This is an interview schedule not a questionnaire and it is suggested that, as far as possible interviewees are encouraged to develop their own thoughts and record their practices regarding the issues at hand, guided by interviewer prompts. It is always possible when sending back the recorded interview to ask questions that have been missed or ask for reasons for assertions made. Text in italics constitutes guidance/prompts/context for the interviewer and the hypotheses we are trying to test.

1. Job, work and status and impact of pandemic

This section is much bigger than in the original Harbinger-1 one because this is clearly what is in everyone's mind now.

Q1.1. What is their current job/role/employment status and when did they start it?

Prompt as to whether on soft money, on contractual or tenure-track employment if we don't know for certain? Previous jobs/roles should be in CV and can be further clarified in the interview.

Q1.2. Clarify whether they are part of research group, whether it is international, the status/position of them in it and whether its dependent on grant/grants?

If we have complete CVs, we might not have to ask this unless it's used as an 'ice-breaker'.

May need to clarify "group" for social scientists. Many may not be in a formal, on-going research group like the physical/biological sciences. But social scientists might have "collaborators" on several different projects.

Clearly, questions/prompts from here on maybe overlapping and it will not be necessary to ask them all, so treat more as a check list.

[Conducting pandemic-related work]

Q1.3. Has their research been related to the pandemic and has this benefitted them in any way?

¹ To be used in conjunction with CV, which gives jobs, research publications, publications etc. ECRs asked to provide a detailed CV and to say whether they have profiles on RG etc., so we can use this data as well.

Studies show that during the pandemic researchers want to take part in battling COVID-19, either via research into the virus itself or through interdisciplinary explorations of its many economic, societal, emotional and practical impacts. There has been a wide response to the pandemic by scientists from many disciplines, which reflects the urgency of the moment, but also the need for changing direction when the shutdown and slow recovery at academic labs worldwide made working in one's own expertise unfeasible.

Q1.4. If not, has the pandemic already had any impact on their research activities? Do they think grant funding in their field will become more difficult / less difficult to obtain in the future?

Q1.5. Will the pandemic lead to any significant changes in the direction of their research? For, instance new areas might be prioritised and existing ones lose their funding as a result.

The above question may turn out to be redundant as a result of the answer to Q1.3

[Work re-organisation]

Q1.6. Has the pandemic led to any re-organisation in work place/role, which has led to their being overworked, undervalued or, indeed, the very opposite?

Q1.7. [If not picked-up by Q1.4 or Q1.6]. Considering remote work, as a consequence of the pandemic have, they been working remotely more, less, or about the same? Has this been advantageous or disadvantageous to their research?

If the answer above is other than 'more': Why is that?

Researchers continue with activities suitable for working from home - writing papers and online teaching. PIs report that move to virtual working modes made their teams stronger. Publishing productivity has increased during the pandemic (though not for those with carer responsibilities), although it is expected that restricted lab and field access will take their toll. Remote teaching is so time-consuming that it takes time away from research, as does the need to provide increased pastoral care. Also, working from home presents further obstacles for maintaining equity for those researchers who are facing increased family care responsibilities, among whom the percentage of women ECRs is the highest. Evidence that women, especially those with young children, are publishing less under the pandemic.

[Job security]

Q1.8. How secure do they *feel* in their job compared to pre-pandemic times?

With universities facing pandemic-related reductions in their revenues, mainly because of drops in student enrolments and fundraising, hiring freezes and contract cuts are becoming commonplace. Jobs in academe are scarcer than before, something which is more likely to affect ECRs, who are often casual employees with contract-based, non-tenure track positions. ECRs have been found to be very worried with regard to their employment situation, reporting increased anxiety and mental health strain.

Q1.9. Considering their more senior colleagues, as an ECR, has the pandemic impacted their employment prospects more, less, or about the same when comparing with their more senior colleagues and, if so, how?

This might turn out to be obvious, but might be worth having this reinforced, albeit briefly.

[Assessment]

Q1.10. Are they being mentored formally/informally in terms of their job/research and also do they obtain any training to help?

Q1.11. How does their institution or national panels assess them and have criteria/methods changed as a result of the pandemic?

The above 2 questions are related and might be asked as a single question.

Although many academic institutions are offering tenure clock extensions due to COVID-19, so that ECRs can postpone their promotion reviews, and have occasionally provided extra funding to ECRs, too, nobody seems to have assessed them by different criteria; the main criterion is still very much their publishing and citation record. It has been suggested that institutions should reassess their policies and consider additional/different metrics and indicators of scholarly achievement.

[Collaboration]

Q1.12. Has the pandemic made a difference in their/their group's capability to set up and/or pursue collaborative undertakings, whether on the national or the international front? If so, in what ways?

COVID-19 has brought about an unprecedented surge in local university, national and international collaboration where the focus is the fight against the virus. Worldwide, groups working on the virus began sharing unpublished data and ideas to facilitate rapid discoveries. However, in terms of non-COVID collaboration, complaints are made that the ban on travel has brought fewer international opportunities. Thus, it is yet to be seen whether this heightened scientific cooperation signals a

fundamental change in research culture: will collaboration continue at enhanced levels and spread to other fields?

Q1.13. Are they encouraged to undertake interdisciplinary, transdisciplinary, or multidisciplinary research and, if so, by whom?

The above two questions might profitably be taken together; see also Q1.3.

There is anecdotal evidence that researchers, and especially ECRs among them, have found their way to fruitful COVID-19 research from specialties outside virology or related disciplines. Doing so is said to depend (beyond luck) on the ability to map out a path from one's own expertise and resources to an intersecting area of emerging research.

Q1.14 Do they think there is a risk of losing their competitive edge through sharing and collaborating with people outside their immediate research group?

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2. Career aims and reputation

Q2.1. Are they currently aiming for a permanent academic career in a university or similar research organisation?

Q2.2. If not, did they once think this, but is no longer their aim and, if so, what is the reason? Is this because they have lost interest in university research, in research in general, or is it because there are no jobs available because of pandemic?

[Reputation]

Q2.3. Do they judge their success as a researcher (and that of others) by reference to citation metrics, such as journal impact factors and/or H indexes?

This question should be asked in the light of what is shown in their CV.

Q2.4. Do they consider download data, social media indicators/ alternative indicators (i.e. altmetrics) to have any reputational value at all for them and/or assessing the wider usefulness of their work? Have their views on this been influenced by the current situation, when COVID-19 research has brought to the fore the importance of rapid, informal ways of knowledge-sharing?

This is where we can prompt about using social media platforms, such as ResearchGate and other social scholarly networks in this respect.

Q2.5. Obtaining visibility is argued as being important in building research reputation: if so, how do they achieve maximum visibility for their research outputs? Has the pandemic changed their visibility-achieving practices in any way?

Q2.6. [If not mentioned above]

It is argued that there is a need to improve the ways in which scientific research output is evaluated by funding agencies and academic institutions by the taking into account of openness and transparency factors, such as open access, open data and outreach. Are they sympathetic to this and, if so, is it making any difference to their own practices? Has the pandemic changed their views on this in any way? If yes, has it brought about attendant changes in their practices, too?

3. General communications practices

[Information discovery and information usage]

The following may be confusing questions to answer so, an example to illustrate. For instance, they might go to their smartphone, then Google, which sometimes give them all they are looking for or, if not, they have to go to the university library system. We are especially interested if the 'warehouse' where they get the papers is no longer operated by the library.

Q3.1. Where do they currently go to search for formal scholarly publications and, if different, where do you tend to go to find this information? Is this any different from before the pandemic?

With the quest for a coronavirus cure emphasising the importance of immediate access to scientific information, the years of libraries' efforts to develop electronic services and collections might have paid off. After all, not everything is available OA yet. Social distancing may have contributed to the already widespread marginalisation of the physical facility.

Q3.2. If relevant, where do they currently search for early-stage/interim research results, data, code or related outputs and where do they find them? Is this any different from what they did pre-pandemic?

Q3.3. Do they use smartphones to search for formal scholarly information, such as full-text papers and do they read them on the device? Is this a regular or occasional practice? Are they using them more since the pandemic for scholarly purposes?

[Sharing/connecting]

We are especially interested in: a) to what extent virtual conferences take the place of face-to-face conferences (according to anecdotal evidence shifting conferences online may have increased participation); b) the use of social media and scholarly social networks and which ones are being used (Twitter has played a central, if often precarious role, enabling as it did world-spanning real-time discussions among researchers on a scale not seen).

Q3.4. In what ways did they share/disseminate their ideas and early stage/interim results before the pandemic and is this any different from now?

We are excluding publishing papers here and covering everything else, such as instant messaging platforms, for instance, Slack, social media, email and meetings. Are they doing more/less informal communication? Why?

Q.3.5. How do they go about forming and maintaining ties with their fellow researchers and does that differ from pre-pandemic times and is it as effective?

Networking? Meeting? Collaborating? This might have been answered or could be asked under sections 'Conducting pandemic-related work' or 'Collaboration'

[Information evaluation and trust]

Q3.6. When they have searched and found an article on a topic important to their research what criterion persuades them to read it : a) the name/reputation of the author; b) the type of peer review process, which the article has undergone; c) the editor of the journal and members of the editorial board; d) the name of the journal; e) the name of the publisher?

[On a scale of 0 as no importance to 5 as very high importance ask interviewee to rank these characteristics]

Q3.7 To what extent do they feel that the peer review system vouches for the quality and trustworthiness of formally published research?

Q3.8. How do they decide how to trust informally disseminated evidence (for example, blog posts and posters.)?

The extent of the 'infodemic of bad information' we may be witnessing since the pandemic, exemplified by hurriedly executed, scientifically inadequate, insufficiently vetted studies but also by

pseudoscience and deliberate misinformation about COVID-19, the product of unashamed research misconduct, certainly renders this question, as well as the next one, timelier than ever.

[Scholarly Integrity]

Moral code/ethics.

Q3.9. Are they aware of bad science/questionable practice being undertaken in their field and subsequently published? Has this become a more prevalent behaviour during and because of the pandemic?

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4. Authorship and publishing

[Authorship]

Q4.1. Does their research team/department/university have an authorship policy? If so, what is it? Is it changing and, if so, as a result of the pandemic? If it were up to them, would they change the policy and, if so, how?

[Publishing]

Q4.2. Do you see traditional journals, whether or not open access, as the main way of making your research available or do you think this might change in favour of more informal modes of communication? If the latter, is this a trend for which the pandemic is responsible?

The pandemic has made informal ways of communicating much more prevalent, at least where COVID-19 related research endeavours are concerned. With all that career-related requirements have been somewhat relaxed (see Q1.11), there does not seem to be any evidence of institutions' reassessing their policies of judging academic achievements; a stellar publishing record remains crucial.

Q4.3. When choosing a journal to submit their paper to which factors rate most highly: a) it is high impact factor journal; b) it has much prestige in the discipline; c), appropriateness of the audience; d) it has high standards of peer review; d) the speed from submission to publication; e) it is open access; f) the geographical location of journal/publisher.

Score on a scale 0 as no importance to 5 as high importance.

Is the pandemic likely to change these relative ratings?

[Peer review]

Q4.4. Are they involved in either responding to criticisms of their/their groups' publications or in doing peer review themselves? Have they had any training for these roles?

Q4.5. Do they feel that the peer review system needs improving in any way? If so, would any of these suggestions improve things (*these can be used as a succession of prompts*):

- a) Author blind to reviewer, reviewer blind to author
(Double blind)
- b) Full content of the reviewer reports is published with the identity of the reviewer? **(Open reports)**

Q4.6. Do they think the pandemic is changing the peer review process in any way? In particular, what do they think of the initiatives for quicker and more efficient peer review procedures developed for COVID related research dissemination?

The accelerated pace of peer reviewing, undertaken specifically in the case of studies that might speed up the processes of battling the virus, renders the procedure much timelier and more efficient, although it places a heavier burden on editors and reviewers. The question is whether speeding up the procedure will come at the expense of the quality of vetting - some retractions that have already taken place may indicate so. Also, is it feasible to turn rapid peer review into the standard procedure?

[Open access publishing]

Q4.7. Does their research team/department/university have a policy in regard to OA publishing? If so, what is it?

Q4.8. Can they/their group afford to publish in open access journals, which are entirely open access - so called gold journals and to publish in journals which are mostly not open access - so-called hybrid journals? If so, where does their money come from?

Q4.9. Do they place the final peer reviewed version of their article in a repository in their own institution and/or a general subject one? If not, any reasons why?

Q4.10. Are they familiar with open access publishing platforms where you can publish all your findings, including null results, data notes and more, both as preprints and as peer reviewed articles? These are favoured and produced by some funders. Do you see them as taking over from traditional journals?

To illustrate you might want to provide an example and you could look at: <https://f1000research.com/about>. To help you explain.

Q4.11. It has been suggested that one result of the pandemic has been to accelerate the increased take-up of open access publishing and open science in general. Do they think this has happened and can they provide some examples?

With publishers' making virus-related articles freely available, the shift towards OA may be accelerating. There is sporadic evidence that researchers feel more positive towards OA, believing that in the future they will be more likely to publish OA.

[Open Scholarship]

Q4.12. Have they produced data and software as part of their research? Are they allowed to release it? If so,

1. Do they regard these as outputs to be valued separately from their publications?
2. Do they prefer to keep them with the related publication as "additional content" or "supplemental material"?
3. Are you being asked by (their funder or conference organiser) to deposit them in a recognised specialist repository?
4. Do they like the idea of sharing their research data or tools created for it? Has the pandemic changed in any way their attitude to the practice?

Q4.13. Do they do anything concrete to provide sufficient information about the way they did their experiments for reproducibility/replication to be possible?

This question relates to the open process - whether or not they make their way of working open - for example, by use of open lab notebooks

[Preprint servers]

Q4.14. In fields where research is related to the pandemic there has been a marked increase in the use of preprint servers. Is this happening in their case? Do they consider a preprint an alternative (or replacement) to a traditional publication?

Where COVID-19 research is concerned, a flood of data is being released daily by preprint servers and then dissected on platforms such as Slack and Twitter, and in the media, before formal peer review begins. This is particularly interesting, as during past crises researchers preferred to wait for formal publishing, so as not to take the risk of their work being scooped. Preprints can speed up the dissemination of new contributions, whilst ensuring that credit goes where it should. However, it remains to

be seen whether the rapid communication of research findings via preprints will take hold and spread to other/all areas of research in post-pandemic times, too.

Q4.15. It is argued that the making available research results quickly and openly can be at the expense of quality and reproducibility. Do you agree?

See also Q4.6.

Q4.16. It is also argued that there is evidence for this in the number of retractions of preprints and final versions of papers. Is this a concern of yours? Have you heard of researchers who have retracted a paper?

[Outreach]

Q4.17. Are you expected by funders or government to make your research comprehensible to researchers in fields other than your own and also to those who might apply your research either in industry and practitioners, and is this a reasonable expectation?

Q4.18. Do you reach out to the general public and policy formers/government with explanations about the relevance of your research? If not, is this because you do not know how to go about it? Do you think the pandemic has encouraged such outreach methods?

Consider asking ECRs if they need help in outreach and if they would be encouraged if this kind of work was recognised as being important by your institution/government etc.

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Q5. Transformations

Q5.1. During their academic career has their attitudes to established scholarly communication practices changed? If so, in what way and why? And have there been more changes because of the pandemic?

Q5.2. Do they think that there is a big opportunity now for the current generation of researchers to fundamentally change the way in which the scholarly communication system works?

Q5.3. What form do they think a transformed scholarly communications system might take?

Q5.4. Have they taken any personal action to promote change of any kind?

Q5.5. Do they think that journals will still have a central role to play in five years' time? Do you think that "commercial" and other large publishers will still publish the majority of important journals or will publications owned by researchers or not-for-profit bodies run in accordance with principles of openness take over their role?

Q5.6. What role will libraries have for researchers in five years' time bearing in mind that since the pandemic most libraries have reduced the services provided on site, but the extent of their virtual operations seems to have grown?

Since the pandemic and the shift to an almost wholly digital environment, anecdotal evidence from libraries and publishers suggests that users are turning to online library resources more than ever, with electronic book purchasing expenditures increasing to meet growing needs. Libraries could be improving their standing in the scholarly community, providing as they do access to paywalled research resources and information on impact and assessment. See also Q3.1.

Q6. Anything else about the pandemic we have missed that you would like to raise

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