Taking the pulse: early impressions of the interview data[1]

Introduction. We have recruited excellent ECRs who engage well (and long) with the questions we are asking, which augurs well for the future robustness and quality of our interview data. Over half our interviews have been conducted and we can start reflecting on what we have found out. In highlighting what we have learnt to date we need to remember that most of the questions we asked are about specific scholarly communication attitudes and practices, which continue a line of questioning we have been following for more four years now. There is a reasonable degree of consensus among the eight countries involved, although where we have national differences this is noted.

Work-life takes the brunt. The biggest impact of the pandemic seems to be on the work-life of researchers, especially for those ECRs with children, who report a drop in productivity. Not so in Spain though, where most of them report a good situation at home, they live alone or are married without children. In terms of scholarly communications attitudes and behaviour the pandemic's impact is generally more a case of accentuating existing trends already noted in Harbingers-1 and the specifics follow.

Research orientation/policy/projects/methodology. All Malaysian ECRs have either initiated or thought of research related to the pandemic. They believe that this has benefitted / would benefit them in interdisciplinary research collaboration or to secure future research funding. Some are also profiting by learning to research in alternative ways (e.g., adopting new research method, collecting different types of data that enables them to continue working without face-to-face contact). No one in Spain though, has changed the direction or the methods of their research. In fact, French ECRs point to a drop in creativity; isolation, lack of contacts, lack of socialisation has affected their capacity of having novel and original ideas.

Mentoring. Malaysian ECRs complained about the lack of institutional support for mentoring. Also, they felt there was a lack of interpersonal support from mentors during the pandemic. They need high value peer support /influential peers to deal with the work challenges so they are feeling it. The same in France regarding institutional support, but all ECRs mentioned how much their senior colleagues were helping them; so, good community support. The majority of Russian ECRs, on the contrary, however, tell us that they are happy with their mentors who really contribute to their development in research, publications, and preparation of the PhD. Quite a variety of stories coming out here.

[1] These are very early impressions (as of early February 2021) and nothing more. They might well change as we conduct more interviews.

Scholarly communications criteria and practises. Generally speaking, reading, publishing and authorship attitudes and practices remain much the same. Perhaps, more surprisingly and at odds with media reports, the same is thought to apply in regard to open science attitudes and practices. With that said, French ECRs are firmly of the belief that scholarly communication needs to change and point the success of preprint repositories (Harbingers-1 has showed us that French ECRs are typically critical). Not so in Spain though, where ECRs do not trust new preprints servers and have no interest at all in repositories. French ECRs do see journals staying around for the essential peer review process, but point also to the rise of alternative models. Which will allow new way of communicating science. Clearly, French ECRs are ones to watch.

Open access (OA). Clearly ECRs are becoming much more familiar with OA, but so far, not a lot of evidence that that COVID has stimulated open access publishing, even among biological/medical ECRs, but, of course, it is still early days in our research. The situation seems largely as it was in Harbingers-1: ECRs like OA because they believe in openness, sharing and transparency, but they have to opt for the best journals to progress up the career ladder and they do not see any changes occurring anytime soon. Thus, most US ECRs did not see much change happening to the traditional system within the next 5 years. It does seem that all the people who wrote optimistic blogs about change possibly did not take into account how researchers actually work and how set that is. Take young Polish scientists who are still keen on OA, but in practice there is that perennial problem about funding it. Those who have the funds publish in OA journal and they are in the minority. However, Russian ECRs, especially in the medical field, do report an increase in open access resources. Harbingers-1 showed there was a wide diversity of OA attitudes/practices among ECRs and so, too, in the current study. For instance, in the case of US ECRs there are those who believe 100% in OA and several others who do not really care one way or the other (probably, due to a limited number of journals they can publish in -- some being OA and some not). For others, cost continues to be an issue.

Peer review. In the cases of Malaysia, Russia and the US, almost all ECRs report peer review to be taking much too long to undertake given the pressing circumstances they find themselves in. Spanish ECRs while they agree with this add that they do not trust fast peer review. More generally, ECRs have become more confident in the peer review process and, again in the case of Malaysia, ECRs have started to talk about peer review activities as important to developing scientific careers and building reputation. As for improvements to the system (other than speed of review), several US ECRs mention the need to incentivize peer reviewers (with money and/or recognition), which may boost both peer review speed and quality. This echoes what we heard from ECRs in Harbingers-1. Open peer review still remains contentious, especially among French ECRs, who simply do not trust it.

Smartphones. There are mixed messages regarding the increased role and importance of smartphone as a scholarly platform noted in Harbingers-1. Thus: 1) UK ECRs are

using them less partly, because they are at home where they use home computers instead and partly because they are not travelling on public transport (it is difficult to use your smart phone when you are cycling – the main alternative to using public transport for many ECRs); 2) Russians ECRs, however, do not use them for scholarly purposes; 3) whereas Malaysian ECRs are said it to be reading the full text papers on them more since the pandemic in fact one said *My smartphone is my new best friend*.

Social media. In the case of UK ECRs, Twitter use and application has come on a lot. Spanish ECRs are maintaining social ties, too, through increased use of Twitter and, also, WhatsApp. Many Malaysian ECRs announce their publications on Facebook, Russian ECRs use Instagram and VKontakte to share their research and work and in France it is YouTube and videos that are coming to the fore. Clearly social media are helping.

Conferences. Perhaps, conferences are the most talked about scholarly communications aspect, but there are mixed messages coming from our national interviewers. On the one hand, there is a new positivity about online conferences and seminars, because ECRs who are at the end of the chain when it comes to financial hand outs and who previously could not afford to travel to them, can now attend remotely and cheaply and are reaping the benefits. On the other hand, though, they miss the personal contact and opportunities for networking that physical conferences bring with them. French ECRs are missing conferences 'hugely', to raise their own visibility, for their informal interaction and for "learning" how academia works. Malaysian ECRs though, are not missing conferences at all and this can be ascribed to the fact that, in general, they are not entitled to travel grants from their institutions, unless they are paid for by the grants themselves.

Visits/exchanges. Spanish ECRs miss the possibility of going to universities abroad while they are preparing their dissertation (this is compulsory in Spain for doctoral students). Similarly, young Polish scientists severely lack opportunities to go abroad for scientific internships and conferences. The same is true for Russia ECRs.

Collaboration and connectivity. Collaboration has gone online. Many ECRs are even more connected than they were previously with their research groups using the new platforms and they consider it a good way to work together and less time consuming than face- to-face meetings or travelling to meet colleagues and peers. This has given rise to a rash of new desktop icons on everyone's devices: Microsoft Teams, Google Meet, Zoom and Webex. While ECRs are highly appreciate of Zoom, Google Meet and the like for researcher engagement / meetings they are not used for social networking (see Twitter comment made earlier). For French ECRs nothing beats being able to walk down the hall to bounce ideas off colleagues, however, French ECRs report that collaboration has not been stopped or delayed by the pandemic. Chinese ECRs are feeling the current political tensions between the US and China (partly resulting from the pandemic) and worried it may prevent cross-nation collaboration, which is really important for them.

Outreach. An activity which was on the increase in Harbingers-1 has been given a further lift by the pandemic. Thus, Malaysian ECRs with more publishing experience (i.e., those with more papers in top journals) are reaching out to the general public (they use the term "science communication"). For most French ECRs outreach is clearly something they want to practice in order to fight misinformation and fake science. This is the really big change in scholarly communications in France. As a consequence of COVID scientists are waking up to their social responsibility. Russian ECRs are employing popular science formats, such as Pecha-Kucha, Science Slam and TedX to reach the public. In the case of Spain, *all* ECRs engage in outreach, thinking it to be very important because of the pandemic.

Scholarly reputation. Some ECRs, especially Malaysian ones, have taken the lockdown opportunity to take small steps to building reputation on social media (Facebook and even Instagram). Also, to update their profiles on Publons, LinkedIn, and ResearchGate. The reason? They have more time to do so during lockdown. But not so in Spain where ECRS are a bit fatigued with self-promotion activities.

Remote working. Malaysian ECRs, like most are ECRs, are working remotely entirely, and believe that they spend more time (and too much screen time) on their research and face bigger workloads, especially for those who have big classes and non-conventional class instruction (e.g., studios, labs, experiments). One manifestation of working from home for all ECRs is a saving in commuting time and this tends to result in more time spent writing/ publishing (especially papers that were half prepared waiting for time to finish them) and grant proposals. So, we might expect a publishing bounce down the line. One US researcher said "This has been the most productive year I've ever had." In France, it's the same, but mostly in regard to review papers. The situation is a little more nuanced in Spain. Yes, ECRs spend longer hours working, but this is compensated for by a save in time on commuting, they can concentrate better and they are more relaxed and feel safer at home than working in shared offices with between 5 and 8 occupants. Then there are those Spanish ECRs who conduct experimental work who actually have less work to do.

Lab work. Many ECRs turned out to be working in their labs during 2020. Academic 'key workers', obviously. There have been reports that lab researchers experience difficulties with conducting experiments and projects in time (especially in the case of physics, chemistry and biology). Thus, Malaysian ECRs spoke of abandoned experiments, which had to be resurrected after lockdown measures eased. Social-distancing restricts the number of people who can be in a lab space at the same time, so this requires careful planning and slows down productivity. Currently in Malaysia they are only allowed to only come to the lab once a week. Field work is also impacted upon, so anyone at the stage of data collection (site visits, observations) are tremendously affected. In France it was found that the experiences of ECRs from the experimental sciences and those from the fundamental sciences were are very different. Thus, there

was very little in the way of change in the case of the latter while the former has had a very bad time, for instance, not reaching their instruments or loosing data.

A resilient community. ECRs mention both positives and negatives in regard to the impact of the pandemic. Less negativity than what one might have supposed, but this could be down to the fact that they are strivers and perseveres who are doing everything they can to adapt in order to be successful. In character, most US ECRs reported no substantive changes expected with their research career due to the pandemic. 'Delay, but not change' seems to be a recurring theme. They also felt relatively secure in their current situations, and the 1-year extension of tenure requirements by their universities may have helped in this (France did the same).