

HARBINGER-2: ECRS ON CAREER PLANS

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Early career
researchers:
scholarly
communication
trends, work life
and impact of
pandemic.
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Are ECRs sticking with academic research (despite the pandemic) or jumping ship?

Introduction

As it clearly emerged from the review of the scientific studies, expert prognostications and personal accounts, which sought to provide the background and context for *Harbingers-2*, a year or so into the pandemic early career researchers (ECRs) were faced with challenging circumstances indeed¹. As the most vulnerable cohort in the academic workforce, they were particularly prone to hiring freezes, layoffs and dearth of job openings resulting from the pandemic; as aspiring entrants to academe, who need to demonstrate research capabilities, they were particularly prone to the detrimental effects of the pandemic's putting the brakes on productivity, collaboration and cooperation; and as young people with a concurrent excess of responsibilities, brought about by the pandemic both on the work and the home fronts, they, and especially the women and even more so the mothers of young children among them, were particularly prone to an inability to achieve a reasonable work-life balance. No wonder then that grim scenarios of ECRs becoming a generation of lost scientists became the recurrent theme in many of the discussions of the long- and short-term developments in a pandemic-challenged scholarly world.

Thus, when we set out to explore the impact of the pandemic on ECRs, one of the more important points in need of clarification was whether they were indeed becoming disproportionately affected by this crisis to the point of despairing of an academic research career, or perhaps, conversely, still saw a future in academe despite the potentially greater insecurity of these pandemic days. After all, the already arduous process of becoming a full-fledged member in the scholarly community might have just got worse, with ECRs, very much in the frontline as they are, bound to be hit first. Would this state of affairs result in their jumping the academic ship or not? Given the strategic importance of the topic, there was a need to obtain an early sense as to what the data are telling us in this regard and report back to the funders (A.P. Sloan Foundation) and higher education policy makers, especially as we were hearing from the UK ECR cohort that quite a bit of 'jumping' might be going on.

We set out to discover then whether there were any signs of this generation of young researchers, very possibly rendered disoriented and directionless by the pandemic, was

¹ Herman, E., Nicholas, D., Watkinson, A., Rodríguez-Bravo, B., Abrizah, A., Boukacem-Zeghmouri, C., Jamali, H. R., Sims, D., Allard, S., Tenopir, C., Xu, J., Świgoń, M., Serbina, G., & Cannon, L. P. (2021). The impact of the pandemic on early career researchers: what we already know from the internationally published literature. *Profesional De La Información*, 30(2). <https://doi.org/10.3145/epi.2021.mar.08>

also proving to be *truly* ‘the lost generation’, a generation permanently lost to research. The line of questioning in what was an open-ended interview (meaning they could stray from line of questioning), was along these lines: Are they currently aiming for a permanent academic career in a university or similar research organisation? 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? The findings reported here are based on what we learnt from our 177 interviewees in round 1 (out of 3) of the interviews (April 2021), and also from an initial inspection of their reports in round 2 of the interviews (November 2021).

Findings

The first signs of a possibly worrying turnaround was detected in the UK. Whereas in the first round of the interviews only one of the 24 interviewees was certain that they no longer wanted an academic career, although some others were considering the possibility, too, when it came to the second round of interviews, a significant number (9 or 38%) of ECRs were now saying that they do not want to remain in the academy. Indeed, some are actively taking steps to jump the academic ship as soon as possible, most notably among the doctoral candidates: they are not trying to find a post-doctoral job, applying for jobs in government, charities and industry, instead, and brushing up their presence on ResearchGate and Linked-In. Others see no reason to leave now, when they still have grants enabling them to do research that will increase their marketability elsewhere, but they do plan to leave when their funding stops.

True, all but one of the assistant professors in the group (in other words ECRs on the top rank of the ladder up to tenure) were too busy building their careers to think of giving it all up when they had worked so hard to get there. Also, those working towards submission of their dissertations or the post-doctorals, who were getting enough results to see an academic future, 4 altogether, were more well-disposed to staying in the academy. However, as many interviewees continued to be uncertain, balancing pluses and minuses, potentially joining the ranks of those 9 interviewees who had already decided to leave academe. In fact, some wanted to change direction to applied research, such as the very active and apparently successful doctoral candidate in ecology, writing up next year, who, certain about her change of heart, says: *“I have grown to prefer a more applied job, i.e., implementing results from research on the ground, rather than doing the research myself”*. Others go even further, saying that they want to move out of research altogether and work instead on communication or outreach (the latter an activity seems to have received a boost by the pandemic).

What brought about then this sea-change in UK ECRs’ career plans? Well, several suggested that the time spent at home – not by choice – made them think more and long about their futures. Indeed, nearly half of UK ECRs also reported during the interviews that they were more insecure as a result of the pandemic, whilst for other countries it was more like a sixth of the interviewees, quite a difference. Also, some found themselves

overworking when they got back into the lab or office, which made them worry about their work/life balance if they remained in a university. Thus, for example, one post-doctoral physicist summed up their situation with some self-knowledge. The bottom line is that his attitude changed from *“door open but looking primarily to academia to (now) door open but looking primarily to industry”*. On the basis of what he has seen of the academic life he believes now that it is *“too competitive, too much work for the resulting reward (financial/salary and prestige), risk of obtaining bad team-playing colleagues and poor work-life balance”*. Also, while he accepts that the industry is not going to be easy to get into, as far as appropriate jobs are concerned, and it may be possible to keep climbing the academic ladder, he feels that *“he lacks the knowledge and ideas at the present moment to make a good independent investigator grant”*.

Complicating things further, some ECRs were not sure where to get good career advice from within their institutions, indeed, they felt that in the university sector there does not seem to be any career help. Sometimes talking to more senior ECRs was the only opportunity of obtaining an outside view. In addition, there was little training for a non-university future, even though for the great majority it was a continuance of research in a new context. A case in point is a new assistant professor, for whom working at home, with the greater work burden and heavier child care responsibilities it entailed, has raised the question of other opportunities; however, he has not yet explored these. People, whom he knows, have been happier working outside universities. They tweet and say that more than they did. He might go to another sector using his transferable skills, but it need not be pharma and it could be other skills not leading to another research job.

Plainly then, in the UK a considerable number of our ECRs were uncertain about their future, refraining from looking further than the completion of their dissertations or the end of the present grant. We do not recall this level of uncertainty in Harbingers-1 (2017-2019), which makes us suspect that this state of affairs not only lends support to the possibility that ECRs bear much of the burden of the ongoing pandemic-incurred hardships in academe, but may also serve as a reflection on the changing face of academic research as a consequence of the pandemic. However, do these developments characterise the UK only or indicate globally unfolding changes? A look at the ECR participants of our study in the case countries covered may provide some initial insights.

France, for one, showed an even greater shift in mood and practice than the UK, although this does not appear wholly pandemic related. Nevertheless, it seems to have been the pandemic that convinced ECRs of their decision to leave and provided the trigger, becoming the straw that broke the camel's back. Thus, half of French ECRs are now no longer willing to pursue an academic career, looking for 'an emergency exit', because they face too many uncertainties, as one of them put it: *“One of the positive points of the lockdown is that I asked myself a lot of questions and I realised that I didn't want to live a priesthood, lining up post-doc positions in the hope of being recruited one day. I can have a future outside academia and I can be very useful in many other sectors”*.

Thus, many of those French ECRs who have already graduated or are about to graduate by the end of 2021 are not aiming for an academic career. They have chosen, instead, positions in industry, outreach, private universities (Universités catholiques), in publishing industries or, if in academia, engineering positions. Here is one who preferred a career in schools: *“I teach chemistry in high school now and my courses are mostly aiming to open up my students’ minds, to teach them critical thinking, organised scepticism, positive curiosity. I’m preparing future citizens, the next generation researchers, and this is very important”*.

On the whole the situation is very unclear and heterogenous, possibly reflecting the big uncertainties surrounding ECRs, of which the pandemic is merely one. There are simply not enough tenured positions in France and salaries in academe are relatively poor compared to the industry. There are also the uncertainties that are caused by ongoing government reforms of the French public higher education system (Liberties and Responsibilities of Universities), which is stoking fears of a devaluation in academic status. The temptations of the private sector and industry are growing.

Russia is the only additional country where there has been a shift of attitude to the possibility of opting for a career in academe among ECRs, albeit not as significant a shift as in the UK or France. Also, those who think of quitting an academic research career do so more for reasons of personal interests and suitability to a career in research than for anything to do with external circumstances, as the reports of the following two ECRs (one a physicist and the other a social scientist) amply demonstrate:

“The scientific activity, in general, the research process is interesting to me and certainly brings me joy, but in the format in which this is happening now I do not see myself”

“When I became a PhD student, the main reason for my admission was precisely the desire to pursue a career in higher education and science. But in the process of studying, I changed my mind. This is the understanding that I do not correspond to the level of researcher I would like to be. And I don't really want to continue to develop in this area. [...] That is, I understand that at the moment, as a researcher, I am not entirely competitive, even if we consider even the Russian level. And the second point, I don't like the academic environment a little, it has ceased to attract me.”

By the same token, another ECR, specialising in medicine, plans now to focus on practice rather than continue their research, but not because of the pandemic. It is, rather, because of the stricter requirements of working as a researcher and the greater bureaucracy involved:

“I plan to remain a practitioner for the most part, to do science based on my practical activities. The way this all now proceeds in universities, especially in medical ones, does not suit me personally, therefore, as a creative person, I can realize my ideas within the medical practice. At the university, this is all much more categorical, more complicated, stricter, there are plans, there are some criteria.”

Yet another two ECRs are not very committed to a career in research either: one is uncertain of what she will do and the other is more interested in teaching than in research and plans to make teaching the main focus of their career.

It seems then that whilst both Russia and France show intimations of the 'jumping ship' trend discernible in the UK, in neither of these countries ECRs' plans for career changes seem to be directly pandemic-related. In the cases of all the other countries there is even less of a shift in ECRs' plans for an academic career (although in those few cases when such a shift did occur, it is at times traceable to the pandemic), or, indeed, a shift the other way, with ECRs becoming even more tied to academic research.

Take, for example, the US, where, with all that it often manifests results similar to the UK, no wholesale changes of career tracks are reported, compared with the first round of interviews. This is partly put down to the fact that the US cohort contained a lot of older ECRs, who, embedded as they already are in academia, had no intentions of leaving. There were, though, 4 ECRs who decided to change course, three of them for reasons that might have been related at least indirectly to the pandemic.

Thus, a Physical Sciences/Engineering ECR, a doctoral graduate, expressly blames the pandemic for missing out on an academic post. Apparently, he was initially considering academia but had taken a private sector job at the time of the first interview because he could not find academic employment of interest to him based on his credentials. Indeed, in the first interview he said: "[The pandemic] *basically threw me out of academia in one way or another to the point where I actually had to scramble and find a job*". In the second interview he still expresses the possibility of an academic career (as both a researcher and teacher) but is somewhat torn by the financial incentives of the private sector: "*I wouldn't rule [academia] out, but the requirements towards that possible position keep going up and up in terms of either benefits or salary or that kind of stuff. That being said, there are certain teaching positions that I'd still be very interested in and that, depending on what the benefits or whatever, I would definitely make an exception*".

Another ECR, a post-doc, was 'let go' from his university research position, which might (or might not) have been related to the problems of the academic job market (but he still has his other job with a private company, and he never wanted to be a professor). Finally, one ECR left his PhD program due to mental health issues related, in part, to the pandemic.

Unrelated to the pandemic is the case of a Life/Biological Sciences doctoral student who also decided not to opt for an academic research post. After graduation she was strongly considering academia, but now has a US Government research job and is very comfortable in saying she no longer wants an academic position: "*I soon learned of the difficulty and biases that are coming out with a lot of the peer review processes for grants, and how hard it is to get an R01 (a grant up to five years of support from the National Institutes of Health) in hand. A lot of academic institutions won't hire you to be a PI*

(Principal Investigator) unless you have an R01 already in your hand, but it's hard to get one if you don't have a lot of publications".

In Malaysia there were no major career changes – all 20 Malaysia ECRs are still aiming for a permanent academic career in a university. Indeed, compared with the first round of interviews, the career moves indicate a further embedding of the participating ECRs in academe. Thus, six ECRs, who met their key performance indicators in terms of publications, grant funding and research supervision, have recently been given a permanent position and confirmed as Senior Lecturer. Two ECRs have been promoted to Associate Professor. Eight ECRs are still in contractual positions but, in general, seem confident that their contract will be renewed and they are hoping to be tenured in the next renewal exercise. Two more are graduating doctoral students and both have joined academia as part-time tutors and research assistants, while waiting for their viva voce. According to one of them, upon completion of his PhD he will be offered a contract position as a Senior Lecturer, where the contract will be renewed on a yearly basis. The only postdoc in the Malaysia sample has left her research centre but is still in academia *"doing part-time lecturing and research consultation"*.

In Spain our ECRs expressed quite some enthusiasm about an academic career; in fact, all 20 interviewees of round 2 said that they wanted a career dedicated to research at universities or other research institutions. However, although no obvious impact of the pandemic is discernible where their careers are concerned, there is no way of knowing if their dream will come true: academic jobs are in short supply and there is much competition for them. Indeed, one ECR from computer science, who participated in Harbingers-1 wanted to leave and is now no longer in academia and a further four of this cohort eventually have also left academe, one for a job in administration, another one to industry, and the remaining two to teaching in high school. Among those participating in Harbingers-2, one computer scientist has already left for a job in industry, another medical doctor discontinued their research because of lack of funding and a doctoral student wants to leave after finishing her dissertation to get a job in the R&D department of a public or private company.

In China, too, there are no major changes from the first round of interviews in the career interests expressed by our ECRs. All 24 interviewees confirmed that they still want to be in the academia, indeed, that they very grateful to be there, as the following two quotes indicate, the first from a medic and the second from a mathematical scientist:

"The breakout of COVID-19 largely influenced the economy; thus, many people suffered from salary cuts or even unemployment. Compared with those people, university researchers were lucky and felt satisfied, they still got paid on time, and their salary was pretty OK compared with other professions."

"Being a researcher at a university is such a stable and ideal career for young talent. When you spent 20+ years in school and trained yourself how to do research, the best work you can do is to be a researcher."

Fifteen out of the 22 Polish ECRs (about two-thirds) who were interviewed in round 1 were and still are (in the second interview) aiming for a permanent academic career in a university.

Three doctoral students were not (in the first interview) and still are not (in the second interview) interested in a research career, they want to work in business/industry or are working there now. Interestingly, they are male and pointed out the much better salary in business and industry compared to the salary at the university. Thus, changes of opinion or no opinion (answer "don't know") affect only 4 ECRs. It is important to emphasize that these were not pandemic-related changes of opinion. These reasons were more likely to be personal or related to career opportunities at their home university.

One ECR still doesn't know: *Whether I will ever move to industry depends on how my family life will turn out.* Another respondent is a practicing physician who, in the second interview, admitted that he nevertheless sees himself more as a practitioner than a scientist. Two additional ECRs who said they wanted a permanent academic career in the second interview were postdoctoral researchers who received new grants and/or extensions of employment.

Tentative conclusions

Returning to the question posed in the title, whether ECRs are indeed becoming disproportionately affected by the pandemic to the point of jumping the academic ship, the gist of the tentative answer that we have for now is – no; at least in general they do not. Their stance as to pursuing a career in academe certainly does not seem to indicate that the grim prognostications of their becoming the generation permanently lost to the research undertaking are about to become true. However, the picture is more nuanced than that as well as very much country-specific.

Whilst there are signs that the pandemic might have drawn ECRs closer to academe, as best illustrated by the case of China, where a job in universities is now the ideal job to have, or at least has not much affected ECRs' career choices, as the case seems to be in Malaysia, elsewhere things are not as clear-cut. Indeed, in most of our case-countries extant problems of the academic job market might have been aggravated at least to some extent during – if not necessarily directly by – the pandemic, as best exemplified by the case of the US, where not many changes of career tracks have taken place, but those that have, are at times traceable to the pandemic. Most importantly, there is clear evidence that ECRs are jumping ship in concerning numbers in the case of two countries – France (half of all ECRs) and the UK (well over a third), which may signify the impact of circumstances characterising specific countries only, but may also indicate more widespread, if not global changes yet to come.

Thus, whilst the findings reported here are not based on our full data set, which will become available in the coming months, and, as such, they are tentative and yet to be fully

confirmed and explored, they already shed light on the crucially important topic of academe at these pandemic times.