

## Early career researchers, scholarly communications and generative AI Interview Schedule<sup>1</sup>

### Interview purpose and context

For those ECRs new to Harbingers we need to first explain that this project is a continuation of a study we have been conducting for some years on the big changes/impacts faced by early career researchers and we have already looked at generational and pandemic change, and 'AI' is the next big change on the list. Without this explanation they will wonder why we are asking all these broader questions.

Project seeks to examine the impact of generative 'AI' on junior researchers, we will set out to discover how it affects the way ECRs do research, focussing on how they integrate generative 'AI' tools into information and publishing practice. We will compare awareness of/ these tools with evidence of familiarity and use, the extent of their perceived expediency, on the one hand, and perceived limitations, on the other. Taking a Diversity, Equity and Inclusion approach, we will be looking for similarities and differences among ECRs by gender, country, background, discipline and seniority. Thus, to determine the implications of generative AI tools for the achievement of integrity, transparency and openness in the creation of information and its publication. It is a pilot, we are feeling our way toward what questions we should be asking in a larger study, so it is important to gather full, quotable responses and add commentary to give context. We are seeking full answers not just ticking boxes.

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### A. Job

#### Job

- A01 Job title
- A02 Start date (year)
- A03 Previous job title
- A04 Previous location of job
- A05 Do they teach as part of their contract?
- A06 Do they teach if it is not part of their contract

#### Research groups

- A07 Are they part of research group (s)? [formal or informal]
  - A08 If yes, is it international in membership?
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<sup>1</sup> Colour coding: blue text = background information; red text = prompts should they be necessary

## B. 'AI' general questions

'Intelligence', artificial or otherwise, is a broad concept which is hard to pin down, so this preliminary 'AI' section is intended to gauge our interviewees prior knowledge and experience of 'AI' so that responses and observations in the established Harbingers topics that follow can be evaluated in a broader context.

We are not setting out to interview only experts or specialists in 'AI', the views of those who are uninterested, uninformed or passive could be just as influential on future developments. Also note that although ChatGPT is currently of particular interest it is just one example of Generative AI, and that in turn only a sub-set of what may be considered as Artificial Intelligence. Seek to gather a broad view of 'AI' but remain alert to potential confusion and hearsay. Try to distinguish between, a 'wish list' of things people believe or would like AI to do, and what it can do.

Answers given here may pre-empt detailed questions in later sections, it is not necessary to get answers to all questions in the order given. If someone has a lot to say about a topic it may be better to skip forward to that section.

The questions below have been simplified to emphasise that, ideally, we would like a broad conversational answer gathered without too many leading questions. We hope to gather quotable texts and commentary, not monosyllabic coded responses. See the separate guide document for an explanatory background and possible prompts if the conversation stalls.

**B01** What, if any, is their experience of, or at least encounters with 'AI' —not just in an academic or work context.

The topical questions below (sections C–F) are about the academic/scholarly context. In this section we are considering things more broadly. We want a background so that those answers can be calibrated. Not least because those working with AI are as likely as any to be partisan or focus on some particular interest.

**B02** If so, what kind of 'AI' are we talking about?

What we want is for ECRs to describe in their own words what they are doing that they think of as 'AI'. So long as we get some sort of description, we can interpret that; which may lead to a firmer classification beyond the pilot (see below).

**Additional notes for interviewers.** Symbolic AI might be summarised as 'how we would like to think we think' — logical, rational, mathematical, algorithmic etc. There is no real boundary between this and what we might call 'advanced computing' and AI is often just a marketing term. On the other hand, it may be used in the context of image recognition tasks such as computerised tomography where the claim of 'AI' may have more justification. Autonomics [also Cybernetics, Robotics] is an approach to AI characterised by imitation of biological mechanisms and control of processes by autonomous agents.<sup>2</sup>

Our immediate interest is Generative AI, which includes Large Language Models (LLM) of which ChatGPT is the best known. Generative AI can be seen as creating an output based on a massive collation and synthesis of texts, and images. The output can be very plausible —a convincing and realistic fiction— but is in essence an aggregate, a mash-up. Contrast that with *Symbolic AI* and *Autonomics* where there is an 'audit trail' —an algorithm that may be verified or an activity that can be tested and demonstrated to work. With Generative AI we have to judge appearances, what is presented: truth or fiction?

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<sup>2</sup> It has gone in and out of fashion. Brooks 'Subsumption Architecture' in the late 80s led to the robot lawn-mower, which is not unlike Grey Walter's 'Turtles' of the 1950s.

**B03** What is the extent of their use or engagement. For instance (to be used to jolt the memory, if necessary, after answering question):

- Played with ChatGPT;
- Have 'AI' features in their web browser (have used them?);
- Used 'AI' to detect gaps in knowledge in order to locate a topic for new research and to construct hypotheses;
- Used 'AI' as a tool in their own work: as a try-out, as an auxiliary method, is a key element of work, current research is an 'AI' project
- Used 'AI' to assist in data analysis and debugging code for data analysis;
- Used 'AI' to assist in qualitative research: to identify patterns and trends within large datasets, to extract meaningful information from text, to code responses.;
- As an additional tool, that will be embedded in their tool box, with no specific purpose, but that can be used when necessary for a task.

**B04** How do they view 'AI', for instance (to be used to jolt the memory, if necessary, after answering the question):

- As a thought provoker;
- As provider of a supplementary view or data point;
- As a short cut to something that can be independently verified;
- As the supplier of missing but not critical information;
- It is essential to the task
- 'AI' is their project.

**B05** Are they concerned about the use of 'AI' in any way? If so, why?

If their concern is about what might happen rather than something they have observed or experienced to-date:

- a Do you think they will come about (now, in a year or two, this decade, in your working lifetime)
- b In general, would these speculative uses be a good or bad thing?

We want to gauge how much of the concern is herd behaviour —thinking what others think.

**B06** Do they think their experience and opinion of 'AI' typical when compared to colleagues and friends?

It is not the intention of this question to be a proxy interview of others. What we are asking is do they think they are atypical in their attitude towards or use of AI.

**B07** Has AI helped in any way to reduce/manage teaching and administrative workload? If so, does that mean you can devote more time on research work?

### C. Career aims and reputation

**C01** Are they currently aiming for a permanent academic career in a university or similar research organisation?

#### Assessment

C02 How does their institution, national panels, and/or funders assess them? [This could include teaching, administration, fund obtaining etc.]

### Reputation

C03 How would you judge your *success* as a researcher (and that of others)?

C04 Do they consider download data, social media indicators/ alternative indicators (i.e., altmetrics) to have a *reputational* value for them or others?

C05 Achieving visibility for their research outputs is argued as being important in building research reputation: do they agree?

C06 If yes, how do they achieve maximum visibility for their research outputs? Do they you use any in this list?

- a) Tweeting a link
- b) Putting on a social scholarly platform; (Prompt for ResearchGate and LinkedIn if not mentioned)
- c) Placing in a virtual poster where the article is summarised;
- d) Giving a presentation at a conference, seminar or workshop (including virtual) where the article is referenced
- f) Writing in a professional magazine/research newsletter
- g) Blogging
- h) Other methods (E.G TikTok)

C07 Argued there is a need to improve the ways in which scientific research output is evaluated by funding agencies and academic institutions by the considering openness and transparency factors, such as OA, open data and outreach. What are your views on such a policy?

C08 Does AI have any implications for research reputation? If so, what are they? May include positive (e.g., enhance productivity) and negative implication (lack of transparency).

## D. General communications practices

### Information discovery and information usage

D01 Where do they go to *search* for formal scholarly communications? List in order of importance.

D02 If the documents cannot be obtained easily (through their library/virtual network?) where do they go next? Listed in order of importance. [if not mentioned, prompt for Sci-Hub and see what is said]

D03 Do they use smartphones to search for/find formal scholarly information, such as full-text papers?

D04 Has their searching and discovery behaviour been impacted/changed in any way by 'AI'? [some search engines employ AI]

### Sharing/connecting

D05 In what ways do they share/disseminate their ideas and their early stage/interim results?

D06 If not raised above, do they share their ideas and/or early stage/interim results over general social media channels, such as Instagram, Twitter, Facebook, TikTok and LinkedIn?

D07 If not raised above do they share their ideas and/or early stage/interim results through scholarly social networks/social media, such as ResearchGate and Academia.edu?

D08 How do they currently go about *forming* ties with their fellow researchers?

D09 How do they currently *maintain* these ties?

D10 Does AI have any implications for connecting and/or research sharing? **For instance, summarising/translating research into more accessible formats.**

### Information evaluation and trust

D11 When they have searched and found an article on a topic important to their research what criterion persuades them to read it:

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

- 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
- f) abstract
- g) journal impact factor

**If preferred, can be asked for in writing as part of the approval process**

D12 To what extent do they feel that the peer review system vouches for the quality and trustworthiness of formally published research?

D13 How do they decide how to trust informally disseminated evidence in their own specialisms?

D14 What would make them suspect that published material was possibly AI generated? **For instance, inconsistent writing style, lack of personalization, content too good to be true, inaccurate / lack of proper citations**

### Research integrity/ethics

D15 Are they aware of bad science/questionable/low grade practice being undertaken in their field and subsequently published? This is the place to prompt about grey publishers

D16 Do they believe that the AI-associated potential for rapid production of low-quality scientific articles brings about a decline in the overall quality of research output, indeed, facilitated the growth of predatory journals and papermills?

D17 Do they think AI is raising any other issues of scholarly integrity and ethics? If so, what are they and what can be done about it? Might have been covered in C30 (reputation). **For instance, Deepfakes. Job displacement, autonomous systems.**

## E. Authorship, writing and publishing

E01 Does their research team/department/university have a clear authorship policy? If so, what is it?

E02 Are these policies changing/being challenged because of 'AI' becoming (sort of) another author?

E03 Has 'AI' helped publishing productivity? **For instance: used 'AI' to expedite and/or make more efficient and/or improve the writing process of grant proposals and/or publications; used 'AI' to locate suitable journals to publish in according to the title or the abstract of the manuscript.**

E04 Used 'AI' as a tool for summarising scientific articles/ extract key information from complex texts to facilitate doing a literature review;

E05 Used 'AI' to detect gaps in knowledge to locate a topic for new research and to construct hypotheses;

### **Publishing**

E06 Do they see traditional journals, whether or not open access ones, as still the main way of making research available?

E07 Do they think more informal modes of communication (e.g., preprints, tweets, blogs) will play a larger role?

E08 When choosing a journal to submit their paper to which factors rate most highly:

*[Score on a scale 0 as no importance to 5 as high importance]"*

- a) it is a high impact factor journal
- b) it has much prestige in the discipline
- c) appropriateness of the audience
- d) the speed from submission to publication
- e) it is open access
- f) the geographical location/origins of journal/publisher
- g) where it is indexed (e.g., SCOPUS, Web of Science) [we are aware of overlap with a) above]
- h) high standards of peer review

**If preferred, can be asked for in writing as part of the approval process**

E09 Will 'AI' change their relative ratings or introduce any new factors?

### **Peer review**

E10 Are they involved in responding to criticisms of their/their groups' publications?

E11 Have they done peer review themselves?

E12 Do they feel that the peer review system needs improving in any way?

E13 What do you think an AI-based peer-review should be capable of doing, if it is to replace the current system? **For instance, speeding up review; automated reviewer; post-publication peer review**

### **Open science and access publishing**

E14 Does their research team/department/university have a policy regarding OA publishing? If yes, what is it?

E15 Does their research team/department/university have a policy on avoiding predatory and questionable journals? If yes, what is it?

E16 Can they/their group afford to publish in open access journals, which are entirely open access – so called gold journals? And in journals which are mostly not open access – so-called hybrid journals?

E17 Is the final peer reviewed version of their article placed in a repository in their own institution and if so, why?

### Preprint servers

E18 Do they consider a preprint to be: a) an alternative to; b) a replacement for a traditional publication? Whether yes or no, why?

E19 As stated earlier, making available research results quickly and openly can be at the expense of quality and reproducibility and it is argued that there is evidence for this in the number of retractions of preprints and final versions of papers.

a) Have any researchers you know retracted a paper?

b) Have any editors or publishers you know retracted a paper?

### Outreach

E20 Are they expected/mandated by funders or government/institutional authorities to make their research comprehensible to researchers in fields other than their own, or to policy makers, industry, citizens etc? If yes, how do they go about it (platforms/media used) and which audiences are targeted?

E21 If not, do they do it nevertheless? If so, what methods are used and what audiences targeted?

E22 Is 'AI' capable of facilitating/enhancing their outreach activities? In what ways? Have they seen evidence of any increase in outreach in result? **For instance, used 'AI' as a tool to disseminate research findings to the public in simplified language.**

## F. Transformations

F01 What form do they think a transformed scholarly communications system might take? **Probe on open science.**

F02 Do they think that journals will still have a central role to play in ten years' time?

F03 What role do you think libraries will have for researchers in ten years' time as compared to their current role, especially in light of the growing utilization of 'AI'?

F04 Will 'AI' be a transformational force? If so, in what ways? What will be the advantages and disadvantages of the transformations that will take place?

F05 Will the use of 'AI' exacerbate existing disparities and inequalities, with people with access to AI-based tools speeding up their publication processes?

F06 Finally, how are they faring now that the pandemic is over? **This is a question, if relevant, about similarities/differences in ECRs' circumstances, attitudes and practices, compared to Covid-times.**

**Any other areas of scholarly communication touched by AI but not picked up on previously?**