

HARBINGERS OF CHANGE: EARLY CAREER RESEARCHERS AND THEIR PUBLISHING PRACTICES (AND MORE)

Dave Nicholas and Harbingers team

CIBER Research. <http://ciber-research.eu/harbingers.html>

BACKGROUND

- ‘Born digital’ are entering job market in droves. The Millennials have hit town. Big question is will they be the ‘harbingers of change’ or even the ‘wrecking ball’? There are a lot of them and they are the future.
- Address this question in regard to early career researchers (ECRs) – tomorrow’s senior scholars/scientists. *ECRs are unestablished researchers typically under 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.*
- ECRs not only the new wave, but biggest wave of researchers. Will they change a system still, at its heart, very traditional, but being buffeted by digital waves?

METHODOLOGY

- Asking researchers whether things will change in the future not as effective as 'following' them and seeing what transpired. Change is an extremely complex concept which challenges questionnaires. Questions about altmetrics or open science not easily answered.
- So, conducting a 3-year longitudinal study of ECRs, which sought to ascertain current & changing habits in scholarly communication using depth interviews. 60 questions, 60 – 90 minutes conducted remotely and face-to-face.
- A purposive sample/panel with nearly 120 science & social science ECRs from 7 countries (China, France, Malaysia, Poland, Spain, UK and USA). Published 1200 papers between them.

TAKING THE PULSE 1 (YEAR 1)

Paper-driven

- More fixated with publishing papers than seniors because of their precarious position (papers the reputational currency) So, despite increases in number/range of research outlets, courtesy of Science 2.0, ECRs dance to same reputational tune.
- Focused on publishing in highly ranked journals & outlets are very prescribed, with many ECRs having to publish in institutional lists of acceptable journals.
- Where to publish is a group decision, but ECRs are influential. If papers cannot be published in top journals other criteria employed, go where: a) chances of acceptance are greater; b) had a good experience in past; c) get a rapid turnaround; d) gives helpful feedback.

TAKING THE PULSE 2 (YEAR 1)

Peer review

- Half are reviewers, which explains why not alienated from system. Like double-blind review because of anonymity afforded, but are concerned about open peer review, which is *risky, dangerous* and more difficult to reject papers. Attracts *unwelcome* comment. Some want a feedback & ranking system on reviewers.

Social media and online communities

- Patches of social media/online community use among ECRs & bigger than seen before. Finding information, communicating information, sharing, building a digital profile/presence, obtaining PDFs and engaging in outreach activities are main uses of these platforms. ResearchGate (the fastest grower), LinkedIn and Twitter are tools of choice.

TAKING THE PULSE 3 (YEAR 1)

Open access

- Gold OA thought a good idea and not big deal, although disquiet with high charges making playing field uneven between those that can pay and those that cannot (younger researchers). Big issue in Spain.
- While less distrust of OA less than encountered before, few ECRs queuing to publish OA. Partly perhaps because there are few top ranked OA journals in their field. Surprisingly, because ECRs might be interested in taking every opportunity to showcase their achievements, regard archiving in repositories as low priority.

Open science (OS)

- Much conference talk about the “open” agenda. However, ECRs display little understanding & interest of OS technologies as agents for scholarly change.
- Open agenda includes blogs as non-traditional scholarly outputs, but no ECRs are really interested in blogs as an alternative to publications.

TAKING THE PULSE 4 (YEAR 1)

Collaboration

- While large majority of ECRs share ideas and interim data, much of this takes place at research group level, at internal meetings and within local networks.
- While sharing is much mentioned by ECRs as central to the way they want to run their scholarly lives, this is not done extensively using social media.
- Collaboration a weightier issue and key hypothesis tested was whether ECRs share and collaborate extensively at the risk of losing their competitive edge. In fact, it was only in France were hypothesis fully supported.
- ECRs believe they can be hired on the quality of their collaborations.

TAKING THE PULSE 5 (YEAR 1)

Metrics

- Not interested in altmetrics, which is not unexpected because they are not widely used and accepted by researchers or university system for reputation.

Transformations

- ECRs see opportunities to change, but cannot take them, as have no opportunities in an insecure/busy environment. Also, limited opportunity to change as shackled to a reputational system that promotes publications & citations
- Nevertheless, have moved from situation where no one had ideas about change and those who disliked present situation just railed against it. Now find ideas for change - mainly moving away from a preoccupation with papers & need for greater transparency

CHANGES 1 (YEAR 2)

ECRs more experienced & informed about scholarly communication and more calculating in behaviour. Greater exposure a factor.

There is churn and change. Every one of the 19 scholarly topics monitored recorded changes in at least one country.

Biggest changes:

- **Open access publishing** is felt to be more acceptable, largely because of the alleged benefits of greater outreach, increased citations and (imagined) speed of publication. Like the idea but pragmatism king.
- **Peer review**, where there is now disquiet, partly raised by a flurry of retractions. Chinese researchers particularly worried.
- **Authorship/publishing practices and policies** are tightening up

CHANGES 2 (YEAR 2)

- More interest in **metrics**, with altmetrics being thought about more (but no stronger than that).
- **Increase in sharing and collaboration** being boosted by social media and online network use. Most obviously in China and Malaysia. ResearchGate is the catalyst and on the rise everywhere. It's the scholarly communication dashboard for some.
- More interested in obtaining **digital visibility** and social media and online communities, especially RG, used for this purpose
- **Mature scholarly** environments of the UK/USA mean that ECRs there work and think a little differently.

CHANGES 3 (YEAR 2)

Country differences.

- Greatest in **China**, which raises question whether Chinese are the harbingers of change. Another Asian country, Malaysia, saw the second greatest change. France also saw significant changes with many ECRs becoming less conservative. French researchers are generally the contrarians.
- **Poland and Spain** saw the least changes. In Poland, system is centrally-directed and formal, whereas Spain is reeling from 8 years of austerity, which has hit higher education badly.

Demographic and disciplinary differences

- A sense in some countries (France and the UK) that **younger researchers** are taking a more independent look at the scholarly system.

CHANGES 4 (YEAR 2)

Demographic and disciplinary differences (cont.)

72% of ECRs scientists and allowing for that there are (unsurprising) differences between disciplines:

- a) social scientists not as paper productive as their counterparts in science;
- b) scientists more concerned with publishing in high impact factor journals;
- c) scientists more familiar and knowledgeable about scholarly communications;
- d) scientists collaborate more and work more in groups;
- e) competition is greater in the sciences.

HOT TOPICS 1

Mega-journals

- Half familiar with them. Much fewer (20%) had published in one. Most who published were scientists. PLOS ONE was mentioned most by ECRs, but attracted criticism and there is a sense it has lost esteem.
- Main attractions: their higher acceptance rates, the fact most are ranked highly by Web of Science (WoS) and Scopus and (perceived) quickness in publishing.
- Biggest criticism is low standards of acceptance and processing, meaning variable quality
- What is most striking about results is many ECRs see them as quick and non-selective

HOT TOPICS 2/3

More formal sharing mechanisms

- Over half would welcome a more formal sharing mechanism. Rest feel they already have one in the form of national sharing platforms (China) or RG. Only small % of those who want mechanism did not want publishers involved.

Reproducibility

- ECRs sold on reproducibility and concerned. Suggestions to ensure reproducibility: a) ensuring dataset and supplementary materials linked to the article are online and easily/openly accessible; b) the methods section of papers should be more detailed; c) use videos (and conferences) to explain methodology; d) authors should (honestly) answer questions about methodology/data at conferences/ via social networks.

CONCLUSIONS 1

- Most ECRs are 'servants' to a assessment system and **behaviour shaped by others.**
- Shaped powerfully towards publishing in top journals, from which rewards flow, and, importantly, tenure. **If ECRs want to change things all they can do is chip away.** It is only governments & institutions that can ring big changes, and there are, in fact, signs that they are doing this.
- In space of a year changes have occurred in every scholarly activity and country. **Strong winds of change that are buffeting scholarly communications are beginning to impact on ECR's thinking and behaviour.**

CONCLUSIONS 2

- **Meaning** that ECRs look to be leading way to a more open, collaborative, transparent and outward facing scholarly communication environment and one in which reputational systems a role.
- ECRs also **more strategic**. Observe all the time what can be useful to them in their career. Means more likely to change their behaviour if see something they criticized yesterday may get them quicker to primary goal.
- Returning to research question: **whether ECRs are the harbingers of change?** Data thus shows that they seem to be, but lot depends on whether ECRs take their millennial beliefs in sharing, openness and transparency into leadership positions. Know a little more next year!

THE HARBINGER TEAM

- David Nicholas (Lead), Anthony Watkinson (UK/US), Abrizah Abdullah (Malaysia), Chérifa Boukacem – Zeghmouri (France), Blanca Rodríguez Bravo (Spain), Marzena Świgoń (Poland), Jie Xu (China) and Eti Herman (Israel).
- Publications on which this talk is based available at <http://ciber-research.eu/harbingers.html> and <http://publishingresearchconsortium.com/index.php/prc-projects>
- Project funded by Publishing Research Consortium