

APA/SJC Forum: Enhancing the Quality and Sustainability of Australian Research
University House, ANU, Canberra, Tuesday 24 November 2015

Communiqué

The participants of the Forum included senior executives and representatives of peak bodies in the research arena in Australia, spanning the roles of government funding bodies, universities and research institutes, the academies and academic communities, libraries and repositories, and publishers.

The aim of the Forum was to consider the quality and sustainability of Australian research through a number of presentations and discussions. Speakers were carefully selected to address key perspectives in the scholarly journals landscape, and included a researcher (from the medical arena) and a journal editor (from the social sciences & humanities arena).

Overview

Scholarly research comprises three fundamental elements: planning and undertaking the research, collecting and managing data, and publishing the results.

The quality and sustainability of each element is underpinned by integrity and ethics. Together, they have broad imperatives: making a positive impact on society; gaining trust; and maintaining reliability and accountability in the scientific process.

Each element faces pressures and challenges, along with calls for improvement. Attempts to address perceived problems have brought new initiatives and experimentation.

It is important to consider the varied perspectives of all those involved in the research process: funding bodies; academics as researchers, authors, editors and reviewers; publishers; universities and research organisations; and librarians.

Another important consideration is the major differences in research practice – both in culture and in outlook – within and between the sciences and the humanities.

Research conduct

To maintain research integrity, an up-to-date, usable code of conduct that has traction and relevance with all participants is needed.

The Australian Code for the Responsible Conduct of Research, first published in 2007, sets out responsibilities regarding the conduct and management of research, and the investigation of research misconduct. The Code gains strength through endorsement.

A review of the Code has revealed opinions that it is too prescriptive and should instead be principles-based. Concerns were also raised around the definitions of research and misconduct, how misconduct is investigated, and the nexus between the Code and enterprise agreements – in particular, that the Code may not cover researchers who have left an institution or who are not formally employed (e.g. research students or visitors).

Authors of the Code will need to balance researchers' desire for simple governance with organisations' need to closely and carefully monitor research conduct. The Code must also address the challenge of providing a national framework for a diverse sector characterised by a mobile workforce, and rapidly changing research activity and technology.

It was proposed that research governance should be more consistent among institutional and state-based bodies and more able to adapt to unusual research projects or differing attitudes towards research.

The reasons for misconduct are many and varied, but it was noted that the reward system for researchers can lead to skewed incentives.

Institutions can contribute to improving awareness of and adherence to codes of conduct by providing best-practice guides, as well as more mentoring and training in ethics, peer review and journal quality. These resources should be available to all individuals carrying out research: students, junior and senior staff, and visiting researchers.

The updated Code, scheduled for release in 2017 after an extensive consultation period, hopes to address these issues. The basic layout of the Code and its format of pointing to the responsibilities of institutions, and researchers, is not planned to change.

Rise of data

Data are increasingly acknowledged as a valuable output of research.

Data present their own difficulties: they are often not quality controlled; there may be no clear license for use; there are no reliable repositories; there is no clear definition of or practices around data publication; high rates of collaboration make it difficult to determine the data source or who takes responsibility; there is rich connectivity between various forms of output; the same data can be interpreted in different ways; and analysis can be complicated by the need to protect patient privacy.

Efforts to address these challenges must ensure that:

- data are transformed to structured collections that are managed, connected, findable and reusable so that researchers can easily publish, discover, access and use them;
- data repositories are integrated, covered by appropriate policies and processes, accessible and committed to the stewardship of digital materials;
- all outputs of a scholarly endeavour are published in a fully integrated way with rich connection.

Furthermore, it was proposed that all data are FAIR (findable, accessible, interoperable and reusable) and held in a trusted repository.

The role of publishing

The widespread use of tractable metrics such as article output (i.e. authorship), usage and citations as a means of performance assessment is an important driver of researcher behaviour.

The lack of formal recognition by universities, institutions, and funding bodies for other types of contribution – such as those made by non-author contributors, peer reviewers and editors – adversely impacts the publishing process. For example, researchers strive to be authors even when they may not meet community standards for authorship (*cf* the recommendations developed by the International Committee of Medical Journal Editors (ICMJE)¹). Reviewers may ignore requests to review or rush their reviews. Editors are instructed to prioritise academic or administrative tasks whose outcomes are more easily measured.

A satisfactory reward system to acknowledge the vital contributions that academics make to the tasks of editing and peer review, is important to the structural integrity of research, especially as breaches of publishing ethics appear to be increasing.

An analysis of cases handled by the Committee On Publication Ethics (COPE)ⁱⁱ from 1997 to 2012 showed that authorship and plagiarism remain problems; unethical research practices and redundant publication are major issues but are decreasing in prevalence; and conflicts of interest, peer review (decisions or process), corrections of literature, data (image manipulation, unauthorised use), and misconduct or questionable behaviour are of increasing concern.

The peer review process can suffer from bias, careless or unconstructive reviews, referee or editor malfeasance, a lack of transparency, and inefficiency. However, many reviewers are proud of their contributions and respond to incentives, suggesting that the system could be improved.

Peer review is a trust-based system that relies on the ethical behaviour of all participants, but it also has self-correcting mechanisms. These have been illustrated by COPE case studies and dataⁱⁱⁱ which show that while retractions are increasing, they are happening faster. However there are many cases where even retracted research has done substantial damage in the public domain; it is therefore important to address such issues prior to publication, by building incentives for careful peer review. In addition, the reasons for retractions are clearer, with online resources and technology allowing for better detection of ethics breaches and for simpler cases to be resolved more readily.

Drivers such as the internet, new business models and increasing globalisation have led to new entrants to the journals market that do not meet acceptable standards of reviewing, archiving and editorship; this has substantially undermined the Open Access movement at a time when many governments have mandated Open Access to publically-funded research. In addition to wasting researchers' time, resources and funds, such journals' practices erode their trust and threaten the publishing process as a whole.

A number of industry bodies, such as COPE and the ICMJE, are formulating codes and constructing a community infrastructure to promulgate knowledge sharing. Many scholarly societies and membership organisations offer mentoring, training and continuing professional development in research practice and ethics.

New initiatives in peer review are experimenting with its method (e.g. open, double blind) and timing (e.g. pre- and/or post-publication), and how reviewers' contributions are recognised (e.g. by allowing them to record and verify their reviews).

The industry-wide 'Think Check Submit' initiative^{iv} was recently launched to help authors identify trusted journals. Publishers also provide extensive support and training on good publishing practice to authors, reviewers and editors.

Given journal reputation is an important factor in where authors choose to publish, the protection of brands by publishers offers underlying legal, regulatory and practical foundations for the dissemination of scientific research.

Conclusion

The Forum participants are committed to working together to create positive developments that will enhance the quality and sustainability of research.

ⁱ International Committee of Medical Journal Editors Recommendations:
<http://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html>

ⁱⁱ Committee on Publication Ethics (COPE) Case Taxonomy: <http://publicationethics.org/cope-case-taxonomy>

ⁱⁱⁱ Steen et al. (2013) Why has the number of scientific retractions increased? *PLoS ONE* 8(7): e68397.
doi:10.1371/journal.pone.0068397

^{iv} Think, Check, Submit: <http://thinkchecksubmit.org/>