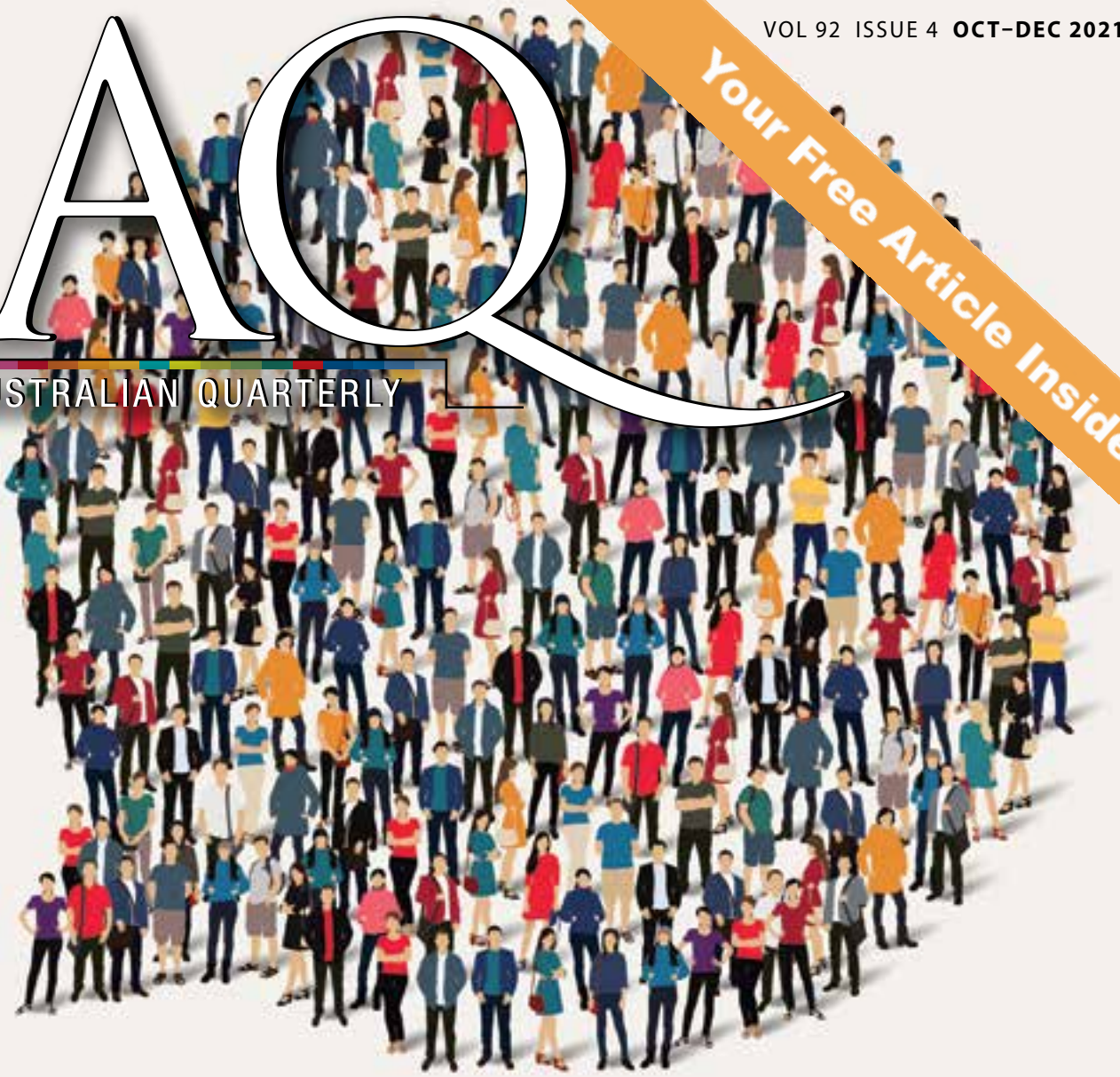
VOL 92 ISSUE 4 **OCT–DEC 2021**

AQ

AUSTRALIAN QUARTERLY

Your Free Article Inside



"Move Carefully & Discuss Things"

Taking back our Public Square

INCLUDING: DR CATHY FOLEY | RESET AUSTRALIA | GEOFF ROBIN | JORDAN GUIAO | ANDREW SMALL

ISSN 1443-3605

9 771443 360020 10 >

COVID & TRANSFORMING JURY TRIALS

WHY SELF-REGULATION OF BIG TECH MUST END

OPEN ACCESS: UNLOCKING THE LIBRARY

How to subscribe

AQ AUSTRALIAN QUARTERLY

Subscribe and pay online at www.aips.net.au/aq-magazine/subscribe

The subscription period is based on the calendar year: January to December – 4 issues per annum. Back copies will be forwarded.

Subscription Rates

Rates include GST. *GST does not apply on overseas subscriptions. Postage included in rate. Airmail used for overseas distribution.

AQ Individual and schools subscription	**$28**		
AQ Individuals (Overseas)	**$38***	**Organisations (Australia)**	**$132**
Individual Digital Subscription	**$14.99**	**Organisations (Overseas – Asia & Oceania)**	**$145***
(through www.pocketmags.com.au)		**Organisations (Overseas – Other than Asia)**	**$165***
AIPS Membership includes AQ subscription	**$88**	**AIPS Membership Overseas includes AQ subscription**	**$110***

Australian Institute of Policy and Science Publisher of AQ–Australian Quarterly

The Australian Institute of Policy and Science is an independent not-for-profit organisation first established in 1932 to further informed public debate on political issues.

Science, technology and innovation have an important contribution to make to contemporary social, economic, political, security and also ethical and cultural issues. Whether it is about climate change, water, renewable energy, nanotechnology, health advancement or food security, over the coming decades many of the challenges facing us will require scientific and creative input into policy making, a scientifically literate community and greater public engagement with science and technology.

Today, the Australian Institute of Policy and Science is dedicated to responding to these challenges and to partnering with others to:

- Increase public engagement in science and ensure people have a voice in decisions that affect them
- Promote excellence in research, innovation and the promotion and communication of science
- Inform and influence policy and policy-making through expert comment and input
- Invest in a scientifically inspired, literate and skilled Australia that contributes to local and global challenges

AQ: Australian Quarterly is an important public and independent platform to increase public participation towards these objectives.

AIPS Australian Institute of Policy & Science

CONTENTS

AQ
VOL 92 ISSUE 4 **OCT–DEC 2021**

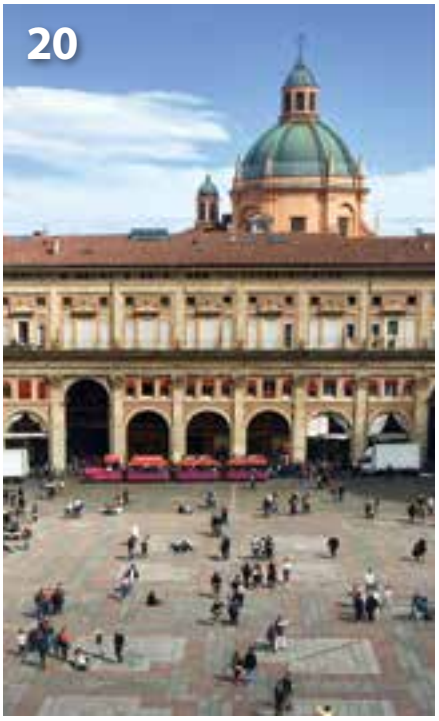


IMAGE CREDITS: Please see article placements

COVER IMAGE: @katty2016 Adobe Stock

A WORD

Transparency is an important foundation for trust. In this issue we tackle some of the biggest political and social issues, many underpinned by the need for transparency – from the justice system, to political scrutiny, to science itself.

Leading the edition, we look at the intentionally opaque and dangerously irresponsible self-regulation regime of the Big Tech companies. How can an industry with a direct line to all of our brains, a rampaging profit motive, and the ability to dramatically tilt public discussion, largely be unregulated by government?

Similarly, our cover story explores the damage that social media has done to our 'public square' – the conceptual meeting house of ideas, discussion and common ground that once tested and iterated what was in the public good. The modern cacophony of opinions and the debasement of public debate is endangering this activity of contested consensus. What could a public square look like in the 21st Century?

AQ would also like to welcome Australia's newest Chief Scientist, Dr Cathy Foley, to our pages! All around the world momentum is building for new models of how science is produced and shared. The once locked doors of academic publishing have cracked open and the benefits to everyone are clear – but re-making the industry is challenging and Australia is set to play its part.

When a senior Liberal Senator breaks ranks to call out the government for undermining the transparent creation of legislation, you know something is very wrong. It is great to have Geoff Robin back for the second part of his two-part series delving into the under-reported, but no less important, Senate Committee process. This time Geoff unpicks the report on Senate Scrutiny of Delegated Legislation; what he finds is incompatible with a healthy democracy.

Jury trials are a keystone of our justice system – so what happens when Covid stops us from squeezing 12 of our peers into a jury box? The justice system has had to adapt, but reduced capacity, a cautiousness towards technology, and the impracticalities of in-person trials, has slowed things down – with a very human toll. What are the lessons for the court system from the pandemic?

Stay safe everyone,

Grant Mills
Editor-at-large

ERRATUM: Please note that the previous edition (92.3) was mistakenly printed as 93.3

NOTES FOR CONTRIBUTORS

AQ welcomes submissions of articles and manuscripts on contemporary economic, political, social and philosophical issues, especially where scientific insights have a bearing and where the issues impact on Australian and global public life. All contributions are unpaid. Manuscripts should be original and have not been submitted or published elsewhere, although in negotiation with the Editor, revised prior publications or presentations may be included. Submissions may be subject to peer review. Word length is between 1000 and 3000 words. Longer and shorter lengths may be considered. Articles should be written and argued clearly so they can be easily read by an informed, but non-specialist, readership. A short biographical note of up to 50 words should accompany the work. The Editor welcomes accompanying images. Authors of published articles are required to assign copyright to the Australian Institute of Policy and Science, including signing of a License to Publish which includes acceptance of online archiving and access through JSTOR (from 2010) or other online publication as negotiated by the Australian Institute of Policy and Science. In return, authors have a non exclusive license to publish the paper elsewhere at a future date. The inclusion of references and endnotes is the option of the author. Our preference is for these to be available from the author on request. Otherwise, references, endnotes and abbreviations should be used sparingly and kept to a minimum. Articles appearing in AQ are indexed ABC POL SCI: A Bibliography of Contents: Political Science and Government. The International Political Science Abstracts publishes abstracts of political science articles appearing in AQ. Contributions should be emailed to: The Editor at info@aips.net.au

AQ
Australian Quarterly

EDITOR:
Grant Mills

ASSISTANT EDITOR:
Stephen Burke

DESIGN AND PRODUCTION:
Art Graphic Design, Canberra

PRINTING:
Newstyle Printing, Adelaide

SUBSCRIPTIONS:
www.aips.net.au/aq-magazine/subscribe

ENQUIRIES TO:
Stephen Burke,
General Manager,
AIPS,
PO Box M145,
Missenden Road NSW 2050 Australia
Phone: +61 (02) 9036 9995
Fax: +61 (02) 9036 9960
Email: info@aips.net.au
Website: www.aips.net.au/aq-magazine/
Facebook: www.facebook.com/AQAustralianQuarterly

ISSN 1443-3605

AQ (Australian Quarterly) is published by the Australian Institute of Policy and Science.

This project is supported by the Commonwealth Government through a grant-in-aid administered by the Department of Finance and Deregulation.

ACN 000 025 507

The AIPS is an independent body which promotes discussion and understanding of political, social and scientific issues in Australia. It is not connected with any political party or sectional group. Opinions expressed in AQ are those of the authors.

Unlocking the Academic Library: Open Access

Science mythology is replete with Eureka moments, but the reality, as any researcher will know, is that breakthroughs are built on deep foundations of work that has come before – and no single research paper holds all the evidence to solve any scientific challenge. This is why the research community collaborates, attends conferences and shares results in academic journals. But the system has reached a tipping point.

ARTICLE BY: DR CATHY FOLEY

There are now tens of thousands of academic journals. So many that no university in the world can afford to subscribe to them all. It's not only a question of volume; the nature of academic inquiry is changing with big data and with increasingly sophisticated ways of crunching that data, including machine

The world of academic publishing is like a library that only the librarians are allowed into...the world is awash with information. But the best information is the most difficult to access

learning. This will force some fundamental changes to the way science and research are done over the coming decade. But there is another, more immediate challenge, and it is one I believe we can address now.

This is the challenge of access. The world of academic publishing is like a library that only the librarians are allowed into. Try reading the literature on your favourite research question. Unless you have access to a subscription, you will find papers locked up behind paywalls, with a charge of typically $50 apiece to access. If you do have a log-in from your university or institution, you will be able to access only those journals to which your institution subscribes.

If you are in government, perhaps involved in developing government policy in a complex area, you will struggle to access the science. If you are a teacher, a nurse, a student, a physiotherapist, the picture is similar. There is no shortage of information; the world is awash with information. But the best information is the most difficult to access.

This is why I am working towards an Open Access Strategy for Australia. In simple terms, open access means that anyone should be able to read the published research in the research journals without facing a paywall. It means the researchers themselves

IMAGE: © Hajotthu - Wiki

The work of Australian scientists is, after all, paid for by Australian taxpayers… it makes no sense for the outcomes of that work to be secreted away behind a paywall

should be able to publish their work openly without having to pay an extra fee for the privilege. Authors retain copyright, and the work can be shared, including for teaching in schools and universities.

Most of the work of Australian scientists is, after all, paid for by Australian taxpayers. We pay on the premise that the work of our researchers contributes to global knowledge and will benefit our nation, through greater knowledge, prosperity, innovation, economic activity and environmental and social understanding. This is why we invest in science.

Publishing in academic peer-reviewed journals is a critical part of the science process that maintains research integrity. The role of scientific publishers is really important and they add enormous value. It is a role that needs to be preserved.

But it makes no sense for the outcomes of that work to be secreted away behind a paywall.

Techniques to capture and store carbon are big news right now. As the world looks for ways to limit global warming and meet ambitious 2050 climate targets, countries are switching to low-emissions technologies for power, transport and industry, and they're looking for ways to "capture" remaining carbon dioxide emissions and store them safely so they don't contribute to atmospheric warming.

In 2019, Australian researchers led by RMIT University in Melbourne, published their discovery of a new technique - using liquid metal to turn carbon dioxide back into solid carbon. Dorna Esrafilzadeh, from the Graduate School of Biomedical Engineering at UNSW, and collaborators published their findings in *Nature Communications*, but published them open access, for anyone to read.

SPRINGER NATURE TELLS US THAT ARTICLES IN OPEN ACCESS JOURNALS ARE DOWNLOADED FOUR TIMES MORE OFTEN THAN THOSE BEHIND PAYWALLS, AND ATTRACT MUCH MORE ATTENTION

For Dr Esrafilzadeh, this decision gave the findings a very broad audience, including outside the academic community. She had school students and researchers contacting her, and importantly, was able to begin new collaborations and find an industry partner. Importantly, the interest sparked by her paper also motivated her to continue with the work and drive towards commercialisation, rather than turning to a new project.

Commercialising a technology is not an easy path, but in this case it has paid off, with Dr Esrafilzadeh and Professor Kourosh Kalantar-Zadeh setting up a spin-off company that has recently attracted seed funding. Open publication of the research was crucial in this good news story.

Springer Nature tells us that articles in open access journals are downloaded four times more often than those behind paywalls, and attract much more attention in news media and in policy material. They attract wider audiences, including medical professionals, small businesses, patients and others.

However, for Dr Esrafilzadeh, it was what's known colloquially as pay-to-play. The researchers paid a fee to the journal to have their work openly available, a model that is increasingly used.

Currently, researchers are hamstrung. Many want their research findings to be more widely read – because it means their work is more likely to be noticed and have an impact. But they're in a bind.

First, there is an incentive to choose

IMAGE: © Joris Snaet

IT IS DIFFICULT TO ACCURATELY CALCULATE HOW MUCH IS BEING PAID OVERALL BY AUSTRALIAN RESEARCHERS AND UNIVERSITIES IN OPEN ACCESS FEES, BUT THE AMOUNT SEEMS LIKELY TO BE IN THE HUNDREDS OF MILLIONS OF DOLLARS

In some nations, three-quarters or more of publications are open access, but in most Australian universities, [it's] only 40 per cent or fewer

the most prestigious journals because publication in these journals is important for an academic career – to get a job or a promotion, to secure funding, to be taken seriously, and so on. That gives the top journals considerable market power. While many now offer an open access option, it's not cheap. Springer Nature has set its fee this year for *Nature* and 32 other subscription journals at US$11,390 a paper.

The approach of paying for open access is leading to an increase in available literature, but it doesn't solve the problem – it simply shifts the costs and creates a new disparity, between those who can access funds to pay for the open access route and those who can't. Only some researchers can get funding from universities to help pay the fees – limited to permanent staff, for example, or dependent on where an author's name comes in the author list.

It is difficult to accurately calculate how much is being paid overall by Australian researchers and universities in open access fees, but the amount seems likely to be in the hundreds of millions of dollars and so a significant burden on academic budgets. The Council of University Librarians has tried to pin down this number and found that no university has a complete picture; most are unable to effectively collect the data because the open access fees are paid from a range of sources, including external grants, departmental funds and personal funds.

On top of these "article processing" fees, Australian institutions are still paying more than $332 million a year in journal subscriptions and this cost shows no sign of slowing year on year, despite increasing open access publishing.

All up, it could be that Australia is paying between $460 million and $1 billion a year to publishers.

Researchers and funding bodies have tried to increase access to research papers, but it isn't easy. Funding bodies such as the Australian Research Council and the National Health and Medical Research Council, for example, currently require publications that arise from research which they have funded to be made openly accessible within 12 months. However, copyright and licensing arrangements with publishers can get in the way.

In sum, the current system presents a number of challenges, not the least being that at each stage of the process, researchers must navigate a set of complexities that may not be immediately clear. For example, there is a tension between the need for research

institutions to disseminate their research outputs as widely as possible to increase impact and citations, and the publishers' commercial drivers to transfer copyright ownership from authors, lock the research up in closed access databases, and then sell access back to only those who can afford it.

The upshot is a system marred by incomplete information, inconsistent arrangements across different institutions, and a lot of money in the system. With a redesign, this investment could have greater impact.

Internationally, momentum for Open Access is growing. But unfortunately Australia is falling behind. Data collated by the Curtin Open Knowledge Initiative suggests that in some nations, three-quarters or more of publications are open access, but in most Australian universities, only 40 per cent or fewer of publications are open access.

Academic journals are big business, with the industry calculated to be worth about $US10 billion. The biggest publishing houses - such as Elsevier, Springer, Wiley, and Taylor and Francis – own more than 2500 journals apiece and the consolidation is increasing. Elsevier alone made almost $A2 billion profit in 2019. This is partly because most of the work of publishing is done at no cost to the journal. Authors and referees are not paid; copy-editing and typesetting costs have fallen significantly, and printing costs are increasingly less of an issue as publication is largely online.

My point here is not to criticise the big publishers, but to make the case for a reset. Publishing costs money; I want to see Australia getting the most impact for its spending.

Australian governments collectively invested $12 billion in science, research and innovation in 2020-21. The Australian research community and the Australian people are entitled to open access to the results of that investment.

**

The pandemic is the clearest example yet of the benefits of open access, as the world's publishing, government and scientific communities came together to make the science available. As an example of the pay-off, consider the role of Australian virologist Edward Holmes at the University of Sydney. He made a decision with a colleague from Fudan University in Shanghai,

IMAGE: © Danny Kingsley & Sarah Brown

Professor Yong-Zhen Zhang, to publish the genome of COVID-19 online. With a tweet on January 10, the world had access, and within two weeks a test for COVID-19 had been drawn up. This was an early game-changer in tackling the globe's most significant health crisis in a century.

On February 22, 2020, 10 genome sequences from Wuhan were published in The Lancet. Compare this to the five-month delay publishing sequences in the SARS epidemic of 2002-03. The speed and openness of publication shows the appetite among the experts for sharing and collaboration.

> WITH A TWEET ON JANUARY 10, THE WORLD HAD ACCESS [TO THE GENOME FOR COVID-19], AND WITHIN TWO WEEKS A TEST FOR COVID-19 HAD BEEN DRAWN UP

However even in the case of COVID, the openness has limits, with publishers putting conditions on the inclusion of their papers in the huge database of COVID-19 papers, CORD-19. The open access agreements with publishers were not open ended. In addition, they were limited to papers directly linked to COVID-19.

One analysis early in 2020 found that since the late 1960s, 13,818 articles had been published on the topic of coronaviruses, but more than half of them remain closed to access. Research on ventilators, face masks and the like also remain behind paywalls. When you consider that cures come from novel approaches or drawing on knowledge from other fields of medicine or research, open publication should go well beyond research relating narrowly to COVID-19.

Making medical and health research openly available would speed the dissemination of evidence for treatments and cures. Consider an area such as musculoskeletal conditions, which are now the most significant contributor to the global burden of disease. Conditions such as back pain and arthritis are treated by a wide array of health practitioners, in hospital settings, but also in primary health and community settings, many of whom do not have ready access to the scientific literature.

It doesn't take too much imagining to realise that this makes it more difficult than it should be to put in place up-to-date evidence-based models of care and ensure everyone is getting the right care. It makes it more difficult to share information about what works and what doesn't, and to build on previous work.

Innovation is a weakness in Australia, and our world-class research is too often commercialised overseas. This is a priority for me

But it's not only about the researchers and the health professionals. It's also about ramping up business innovation. Innovation is a weakness in Australia, and our world-class research is too often commercialised overseas. This is a priority for me and one of the things I am working on is increasing links, movement and visibility between the sectors – universities, research institutions, industry, business and government. Open access to the literature will help this by lifting the visibility of our research.

It is also about access to good science for members of the public.

Where do we, as members of the community, go for information? When I was at university, I would make the 300-metre walk across campus to the Macquarie University library, where I would use hard copy index compilations and then work my way through the shelves of bound hard-copy journals. Now, most of us type straight into the Google search bar - or perhaps the Google Scholar search bar. The result is a seemingly arbitrary collection of science and pseudo-science, news, official messaging and publicity material. In the case of scientific papers, some is available to read; much is not.

Knowledge is interdisciplinary and usually requires wide reading to find the information you need, but as you search the literature, paying per article, the costs very quickly become prohibitive.

Think of it in terms of Harry Potter's Room of Requirement – you can only get in if you know what you want, but how do you know what you want until you're in?

Data, information and research output has become, in a word, unwieldy. More than 2.5 million academic papers are published a year in science and engineering alone. We're already counting the world's data generation in zettabytes. Next comes yottabytes, and then we run out of descriptors. Billions of Google searches are made each day.

Making research output more open won't suddenly make a Google search easy. But it will speed research

Think of it in terms of Harry Potter's Room of Requirement – you can only get in if you know what you want, but how do you know what you want until you're in?

IMAGE: © cOAlition S

I am now working on the details of an Australian Model [of open access] and am consulting with publishers, institutions and others

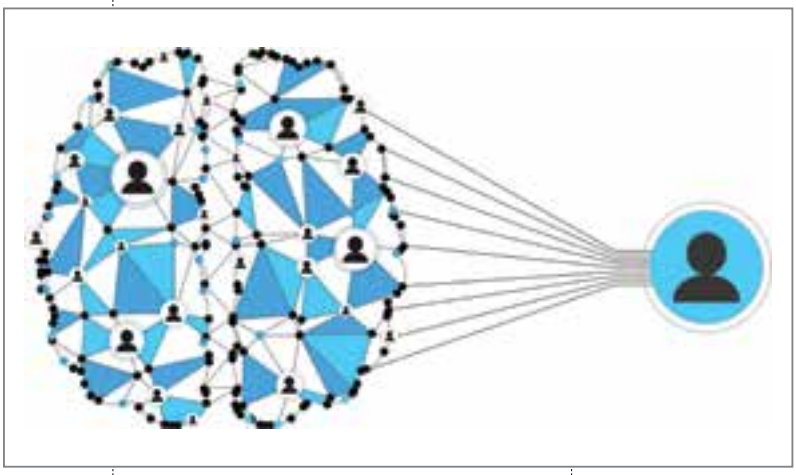
and discovery, improve visibility of the experts and their work, and spark collaboration and cross-disciplinary work, including the valuable work of citizen science. It will even the playing field between researchers in different settings including industry and government, improve scientific literacy and control costs. It might even make academic writing less opaque, as the research community writes for a wider and less discipline-specific audience. That is a lot of plusses.

Many people have worked long and hard towards open access in Australia, and their work means there is substantial momentum. There is a great deal of support from governments, to funding bodies and stakeholders. And it has been a long time coming. The Productivity Commission recommended an Open Access approach in 2016.

I am now working on the details of an Australian Model and am consulting with publishers, institutions and others. The approach I am considering would involve national agreements with publishers, big and small, negotiated by a central organisation. Those agreements would mean that research work done in Australia, and work funded by the taxpayer through the Australian Research Council and the National Health and Medical Research Council, would be freely available for anyone to access. No fees for researchers or institutions; no fees for people at the other end of the pipeline who want to read the work.

We are still doing the detailed work on what an Australian Model might look like, but there is no reason for it to cost more than we currently spend on article processing and subscription fees, while

Open access is just one part of a wider global move to Open Science



respecting the rule of law, the role of publishers and the needs of researchers.

The approach might sound radical, but it is based on models developed in other countries, especially in Europe which is leading the way towards Open Access. In Sweden, the National Library there is coordinating a move to open access not only to research publications, but also to research data and artistic works, with a deadline of 2026.

In the US, some universities are signing their own agreements. The University of California, for example, signed a deal with the biggest scientific publisher, Elsevier, this year, under which the research published in Elsevier's journals is available openly to anyone to read globally.

Open access is just one part of a wider global move to Open Science. An Open Science approach in Australia requires further thought, and in my view we should take one step at a time to maximise the chance of achieving a result. Open access to the literature is the first step.

Once we have achieved that, we can turn our sights to the bigger and more transformative shift, including open access to research data, open code, open research infrastructure and other resources. This has a great deal to offer science.

It will change medical research in particular. It will allow researchers to access each other's datasets, avoiding duplication and improving accuracy by allowing results to be replicated and errors to be found. It will speed research, and it will provide the data stream to enable the full benefits of artificial intelligence and machine learning.

But it is a bigger and much more complex step and requires careful consideration, for example, of who owns data and what rules govern its use. Open Access to published papers is a more straightforward proposal, with broad support. It is a significant reform for which I believe Australia is ready.

AUTHOR:

Dr Cathy Foley is Australia's Chief Scientist. She is an internationally recognised physicist with major research and commercialisation achievements in superconductors and sensors.

Web https://www.chiefscientist.gov.au/

Twitter @ScienceChiefAu

TALL POPPY CAMPAIGN
INVESTING IN AUSTRALIA'S FUTURE

The Tall Poppy Campaign was established in 1998 by the Australian Institute of Policy and Science (AIPS) to promote public awareness of Australia's intellectual achievements. An important component of the Campaign is the Young Tall Poppy Science Awards, which recognise the achievements of outstanding young researchers in the sciences including technology, engineering, mathematics and medical research.

The Awards are made state-by-state and across all states and territories of Australia, to recognise the achievements of young researchers from a wide mix of scientific areas. These prestigious awards uniquely acknowledge the recipients' research achievements alongside their capacity and commitment to communicate science and its significance to the broader community. Awardees go on to demonstrate their value as role models by promoting and encouraging an interest and engagement in science within the education and community sectors through Tall Poppy Campaign initiatives.

Visit **aips.net.au** for nomination form, eligibility and selection details
For more information **T** 02 9351 0023 **E** tallpoppies@aips.net.au

AIPS Australian Institute of Policy and Science

The young tall poppy campaign is generously supported by

Australian National University
Curtin University
ECU Edith Cowan University
Griffith University
Flinders University
Macquarie University
Monash University
Swinburne University
QUT
The University of Adelaide
The University of Newcastle Australia
UNSW
The University Of Queensland Australia
The University of Sydney
The University of Western Australia
University of Tasmania
UTS
University of South Australia
University of Southern Queensland
Western Sydney University
Northern Territory Government
Government of South Australia Department of State Development
Museum of Applied Arts & Sciences
Western Australian Museum

State of the Nation - Unlocking the Academic Library: Open Access

The world is awash with information but the best information is the most difficult to access, locked up behind paywalls by gatekeeping publishing houses. Yet there is a global push for Open Access to scientific knowledge, that will not only benefit our own citizens researchers, but will open up a world of opportunity for people in the Global South, unlock the potential for innovation and levelling the playing field for everyone. So what is Australia's position and how can we support the goals of knowledge without borders?

CATHY FOLEY

"Move Carefully and Discuss Things": Taking back our Public Square

As humans moved from isolated tribal groups into larger communities, the public square was the meeting place of ideas and discussion, arguments and agreements that underpinned social cohesion and iterated the concept of the common good. Today our public square has fragmented, dominated by powerful online platforms that have placed themselves as the gatekeepers of our public debate. As such, we are seeing increased polarisation and an inability to bridge the divides between us, with dramatic consequences. What will the future be if we do not take back our public square?

JORDAN GUIAO

Why the Era of Big Tech Self-Regulation Must End

Few people watching the insurrection in Capitol Hill were left feeling like American society was in a healthy place – or that the Big Tech companies mediating our public discussion did not have something to do with this. For too long, new media and technology has escaped strict regulation, including in Australia. Yet these companies have direct lines into everyone's brains, a raging profit motive, and a history of abusing their powers…The era of Big Tech self-regulation must end.

RYS FARTHING AND DHAKSHAYINI SOORIYAKUMARAN

The Senate, The Executive and Henry VIII

When a Liberal Senator breaks ranks to tell the government that they are undermining the proper function of the Parliament and are lacking in transparency…you know that something is seriously wrong. 'Delegated Legislation' enables the Executive to make regulation outside the purview of the Senate – meaning that the government can utilise these powerful tools to make sweeping changes without scrutiny. The increased use of delegated legislation is eroding the proper democratic role of the house of review, and is a dangerous trend towards autocracy.

GEOFF ROBIN

IMAGE CREDITS: Please see article placements

AQ
AUSTRALIAN QUARTERLY

Want something new to talk about?

Subscribe and Save!
Only $14.99
Annual digital subscription

Why not try Australia's longest running current affairs magazine ~ AQ

There's good reason we've been around so long, we consistently give our readers something new to talk about.

With articles on political, economic, social and scientific issues that are relevant to Australian public affairs, AQ is directed towards everyone from university professors to high school students, policy makers & the interested public.

Find out what's really happening now and begin a whole new conversation.

Print subscriptions :
https://aq.magazine.com.au/

Digital subscriptions:
www.zinio.com www.pocketmags.com

www.aips.net.au/aq-magazine