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Ideas for open access to science in Vietnam: no APC

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Abstract: *Open access makes research outputs freely available online to anyone who wants to read or use them, an idea relatively new in Vietnam. While this practice benefits society, it disrupts the revenue model of traditional scientific publishers. The tension around open access manifests the tension between the people and capitalism. We argue that academics alone cannot prevail. Government intervention is needed to make self-archiving a clear legal right. Research organizations should build domestic open repositories and redesign their evaluation methods to promote open access. Authors should never pay to be published.*

Keywords: *Open access, Vietnam, APC, self-archiving*

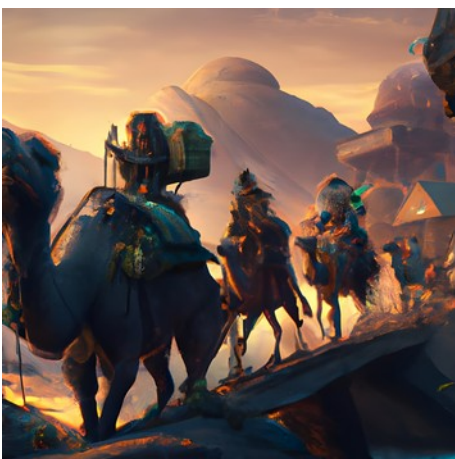
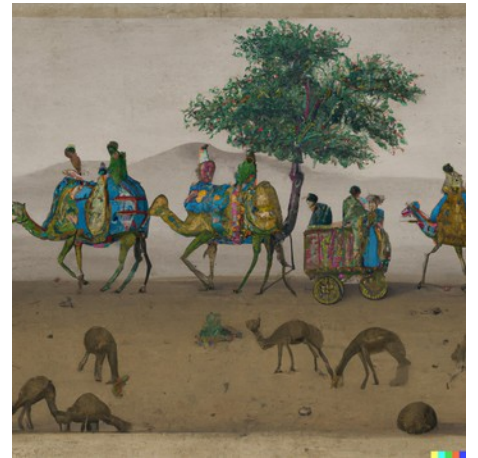


Preliminary parable

Once upon a time, there was a vast island in a faraway ocean. Its people were content, living long, prosperous, and creative lives beneath the Wisdom Trees. This was a special type of ginkgo. Its fruits gave oracles the ability to distinguish between Truth and Falsehood on various topics, depending upon the tree. This knowledge allowed the islanders to create all sorts of medicines and engineering marvels. Wisdom Trees were very precious.

All of the island's tribes paid full-time gardeners to tend the orchards. The tribes constantly exchanged seeds to breed new varieties to answer further questions. Gardeners would give away their best fruits for free to traders, who would transport them across deserts and forests to other parts of the island.

When traders returned, they would sell original exotic seeds to gardeners. Everyone would benefit.



However, gardeners all across the island wanted to share seeds even faster. They discovered that pigeons could carry seeds and fly from orchard to orchard much faster than caravans. No more need for camels and horses! The four largest trading houses raised their prices to compensate for the loss of business. Greedy for more gold, they told the gardeners who supplied them that they had to pay for that privilege. And many did! Those gardeners needed to do something with all these delicious fruits, and traders still provided the most convenient, practical offtaking solution.

This only lasted a short time. Most gardeners resisted the beautiful words of the traders. They agreed that the fruits of their labour belonged to the community because the tribe financed them. As they pointed out that paying merchants to take products was insane, the tribe elders forbid this practice. They constructed public aviaries from where controlled-quality seeds could be obtained, with each tribe covering their own small cost of feeding the pigeons. The misled gardeners were forgiven, and the traders reconverted into farming services to assist in growing the best wisdom trees possible.



1. Introduction

Open access makes research outputs freely available online to anyone who wants to read or use them [1]. Unrestricted access to peer-reviewed scholarly articles and scientific datasets is the academic side of the “Open thinking” movement, which includes sharing software, technical reports and educational resources.

Open access increases the visibility of research and allows for faster and more widespread access to knowledge. It levels the playing field between rich countries researchers, who can afford to read paywalled scholarly articles, and developing country researchers, who can only use free-to-read resources. Improved access to educational resources, with open textbooks, free online courses, and open-source software, helps reduce the cost of higher education.

However, open access raises the tension between the people and capitalists because it disrupts the revenue model of the oligopoly led by Elsevier, Springer Nature, Wiley, and Taylor & Francis, four firms that control more than half of the world’s academic publishing market. That tension created circumvention practices from both sides. Many researchers access scientific articles through filesharing platforms disregarding copyright, so they practice open access against intellectual property laws. Many publishers require authors to pay publication fees to make their work accessible, which discriminates against poorer nations and undermines the fundamental principle that journals should accept scientific ideas according to their intellectual merit, not money.

The preliminary parable exposes this manuscript’s thesis: the law should protect the right of scientists to share publicly funded research, and the academic community should prioritize free open-access journals and refuse the author-pay model. The text is organized into three parts. The first part presents a short history of open-access, gives examples of repositories where scientists share their work for free, and reviews the recent debates about open-access in Vietnam. In the second part, we agree with and discuss the propositions to open domestic institutional repositories, enact more supportive policies, inform and train researchers. The third part explains why authors should refrain from paying publication fees.

2. Open Access from ArXiv in 1991 to the 2021 UNESCO workshop in Hanoi

The open-access movement began in the 1990s as a response to the rising costs of journal subscriptions and a desire to make research and scholarship more freely available to the public. The movement was initially led by a small group of scholars and librarians who sought to make academic research and scholarship more accessible to everyone, regardless of financial status. In 2002, the Budapest Open Access Initiative [2] signatories declared that “the worldwide public good of unrestricted access to research is being served only if research articles are made available to everyone without financial, legal, or technical barriers.” This statement, followed by others like the

Berlin Declaration [3] from the institutional side and the Guerilla Open Access Manifesto [4] from the activists' side, served as a rallying cry for the open access movement and helped to bring attention to the issue of access to research.

Since then, the open access movement has grown and gained momentum [1], [5]. It does not prevail over the traditional pay-to-read model, but open access is widely accepted, and there is ample empirical evidence of its effectiveness. An open-access article is more widely read, discussed and cited than an article behind a paywall.

Open access could allow research organizations and libraries to save on subscription fees, which can reach millions of dollars per year in a rich world university. Many research institutions and funders embrace its principles. Librarians have developed a legal alternative to SciHub: the Open Access Button [6]. That system harvests and aggregates the contents of open repositories, and when it cannot find an article, it contacts the author to help them deposit it. In 2018, an international coalition of research funding and performing organizations representing more than 5% of the global research output launched "*Plan S*". They require that, from 2021, all scientific publications that result from research funded by public grants must be published in compliant Open Access journals or platforms [7].

Five historical examples illustrate the emergence of open access: arXiv, RepEc, HAL, Zenodo and SciHub:

- [arXiv](#) was launched in 1991 originally for the Physics community. Nowadays, most papers in Mathematics and Statistics are available there.
- [RepEc](#) is a global disciplinary archive, running since 1997, where most Research Papers in Economics are available. It includes citations and rankings analysis. It operates in a decentralized mode by harvesting working papers and articles published by thousands of institutions worldwide.
- [HAL](#) is a national multidisciplinary archive opened in 2001 by the French Centre National de la Recherche Scientifique (CNRS). As arXiv and RepEc, it shares over a million documents. The 15 000 researchers employed by CNRS have to self-archive a copy of their works yearly as part of their annual evaluation process.
- [Zenodo](#) is a general-purpose open repository operated by CERN, launched in 2013. It allows researchers to share research papers, datasets and other research-related digital artefacts and provides a digital objects identifier (DOI) for each version of each document.
- [SciHub](#) is a global filesharing portal hosting copies of published research articles and books without regard for copyright. Launched in 2011, this library is an order of magnitude larger

than the previously cited four repositories. It serves hundreds of thousands of research papers every day, despite continuous legal actions from publishers to block it.

These examples show the diversity of approaches to the online sharing of scholarly information from the researcher's point of view. Publishers' point of view is different. They propose that open access should be based on academic journals somehow removing the paywall on articles.

Other examples of open-access publications include journals published in open-access repositories such as the Public Library of Science, open-access textbooks such as those available through OpenStax, and many more listed in the Open Access Directory [8].

The open access movement is growing in Asia. Open access is becoming more widely accepted in the academic community, with universities and research institutes beginning to make their research available for free online. For example, the Indian government launched the National Digital Library of India ([NDLI](#)) in 2015, which provides access to millions of digital documents, including scientific and technical books, journals, and research papers. The Chinese Academy of Sciences signed the Berlin declaration in 2003. As of 2022/10, the global Directory of Open Access Repositories ([DOAR](#)) counts 65 repositories in China, most managed at the Institute / University level with two national-level exceptions: the Chinese Academy of Sciences Institutional Repositories Grid ([CAS-IR](#)) and [ChinaXiv](#) [9].

Several ASEAN countries have implemented open-access policies or initiatives, such as the Myanmar Education Research and Learning Portal ([MERAL](#)). However, on the whole, the open access movement in ASEAN countries is unequal [10]. The DOAR counts 171 repositories in Indonesia, 25 in Malaysia, 19 in Thailand, 9 in the Philippines, and 7 in Singapore, but just one in Laos and one in Vietnam (at [VNUHCM](#)). The Directory of Open Access Journals ([DOAJ](#)) returns only seven journals from Vietnam (as of 2022-12-05, see [11] for the 2019 situation)

The open access movement in Vietnam is relatively new. At the Oct. 20, 2021, UNESCO workshop on Open Science, Deputy Minister of Science and Technology Bui The Duy recognized the opportunities and challenges for Vietnam by stating that "*Open science will become a new approach...*" The Association of Vietnam's Universities and Colleges ([AVUC](#)) leads the national effort of advocacy and training on open access, and it has discussed open access in these columns previously:

[12] defines open access and recognizes it as a universal social goal since 193 Member States adopted the UNESCO Open Science recommendations in November 2021. It notes the urgency for Vietnam to develop a national open licensing policy, to be able to implement the recommendations.

[13] discussed research security and how to navigate the geopolitical tensions creating additional barriers to scientific and technological cooperation. It quotes the G7 Group of Science and Technology Minister's statement: "*We believe that openness is fundamental, security is essential, and freedom and integrity are vital.*"

[14] explored how research evaluation needs reforming to motivate researchers in giving open access to their results. It reminds the gap between current practices in Vietnam and the San Francisco Declaration on Research Evaluation (DORA) consensus: "*Do not use journal-based measures, such as the Journal Impact Factors (JIF), as a surrogate for the quality of individual research articles, to assess the contributions individual scientists, or in hiring, promotion, or funding decisions.*"

[15] discusses the problem of open science infrastructure, that is, open archives such as HAL or Zenodo. These are currently almost nonexistent in Vietnam.

Dr Hiep Pham's recent discussion [16] of open access in Vietnam notes that grassroots initiatives still need to move open science at the heart of the national and institutional policies, plans and agendas. In addition to infrastructure development, advocacy and training, he argues that research grants should include Article Processing Charges (APC) as a legitimate expense item. APCs are publishers' names for publication fees.

We want to discuss the propositions above from a researcher's perspective.

3. Discussion on infrastructure, policy and training

Infrastructure development is a low-hanging fruit. The action is fast and easy to start; there is an active international community of open archivists. The tools are open-source, and the processes are documented [8]. It would be problematic to ask that results obtained with public funding be deposited in a foreign-controlled archive. A national open archive repository infrastructure would offer domestic researchers a well-defined, officially approved place to archive their production. A step towards this might be to build expertise by launching a few institutional repositories at academies and leading universities.

Infrastructure development is also about hosting local nodes that improve access from Vietnam to the contents of existing open archive repositories. Archiving in-country copies of the most current scientific knowledge can only be a good idea in a world threatened by fragmentation.

The secure organization of open research requires recognizing the differences between scientific disciplines and research domains. Open access allowed research on Covid-19 a timely answer to the global pandemic. On the other hand, some research findings remain military secrets for decades, for example, differential cryptanalysis [17].

Policy development is indispensable. The market failure justifies a government intervention to protect the public interest and to make immediate and free access to scientific research a right for everybody. The power relation between publishers and researchers is unbalanced: Elsevier's profit in 2018 was 1.15 billion USD, while the annual non-business revenue of the Vietnam National University, University of Science ([VNU-HUS](#)) is 91 million VND.

Only national sovereign bodies have the power to protect the rights of researchers against the demands by publishers for the exclusive copyright transfer agreement. Exclusivity is not materially necessary for publication. It is a barrier that publishers put against open access. Its effectiveness relies on the fact that researchers are not lawyers. They do not feel empowered to contest the contract or read the details.

The French law 2016-1321, art. 30, illustrates what can be done. It asserts that researchers can put online in open access any scientific work funded at more than 50% by public funds. This law legalized self-archiving even when the author signed an exclusive copyright transfer agreement, provided that, in that case, an embargo period of six or twelve months applies.

Vietnam has yet to pass such a law. The academic community can take many steps to advance towards that goal. The government can include open access in national agendas and roadmaps. Research institutions like national universities, academies and funding agencies can sign on to the Budapest manifesto and subscribe to the Berlin declaration. They can join the cOAlition-S and mandate that the research they fund must be released under a Creative Commons Attribution license (the Rights Retention Strategy). Once the infrastructure is running, ministerial-level directives can mandate the deposit of all public-funded research results in an open archive and require academic organizations to verify open-access publication in their research evaluations.

Advocacy and training are ongoing efforts to build consensus for open access. The main communication goal towards researchers is to promote self-archiving, which is the habit of uploading one's scientific production into an open repository. Training can address what, where, how and when to self-archive:

Being published is essential to a researcher's advancement and critical for their remuneration, so it is understandable that researchers carefully listen to what publishers say. With training, researchers can listen more critically, read the contracts more attentively and inform themselves to know with confidence which text they can legally self-archive and release under a Creative Commons license. In most jurisdictions, scientists retain all diffusion rights for the version of their manuscript which has not been peer-reviewed. In an ideally protective legal environment, authors archive the final version accepted after peer review.

Social networks, even professional ones like LinkedIn or specialists ResearchGate, are unsuitable for self-archiving since they lack long-term value preservation and institutional policy support. Pages on the institutional website at the team, research unit or organization scale are not appropriate either since these sites are designed for immediate communication and have a short lifespan. Self-hosting, which is owning a domain name and maintaining a personal page to share publications, is a satisfying solution in terms of low cost, total control, lifelong durability and search engine visibility. It only works at the individual scale, so it is not a global solution to open science. In the end, self-archiving in an institutional or disciplinary repository which meets OAI interoperability standards is the only solution.

A well-designed repository does not require training for researchers to know how to use it. Nevertheless, it has to meet high usability expectations to be well adopted. Even with a protective law and an institutional mandate, it takes years to establish a social norm: an overwhelming majority of professionals have to change their minds and adopt new habits. Anything less user-friendly than a commercial publisher's electronic submission portal discourages self-archiving. Scientists should be aware of another barrier recently erected by publishers: similarity checkers. Many journals nowadays have a robot that checks the text of newly submitted manuscripts for similarities with texts found on the internet. It allows plagiarism detection, although the recent progress in artificial intelligence led to the availability of paraphrasing tools such as QuillBot, SpinBot or WordAi designed to defeat them. The similarity checker will also block previously self-archived work from reaching the editor. Thus, it is more prudent¹ to archive only when the manuscript has been accepted for publication.

4. Against paying article processing charges

Finally, we would like to take a contrarian view to [16] and argue that mainstreaming open access in Vietnam does not require allowing authors to pay article processing charges (APC) from grant money. Authors should never pay to be published.

First, authors can publish in serious, open-access journals that do not require publication fees. Many such outlets exist. While these journals may not have the marketing power of large publishers behind them, being supported by an academic organization, a university or a learned society is more respectable. And nowadays, the impact of an article can and should be judged by the attention it attracts, not by the journal's prestige.

Second, even when published by a paywalled journal, authors can avoid paying the publisher to ensure open access by depositing a copy of their text in an institutional or disciplinary open

¹ The self-similarity issue happened to me more than once. While in some cases, I could explain to the editor that publishing preprints or working papers are a generally accepted practice in Economics, in other instances, the editor did not disclose which similar texts my manuscript triggered.

archive. As discussed above, the version to be self-archived and the eventual embargo period depends on the law.

Third, the APC system is neither sustainable nor just. It is a double expense for research institutions that already pay journal subscriptions. It replaces the inequality in access to science with inequality in producing science: publication fees, typically several thousand dollars, are out of reach of most research teams in Vietnam. It undermines the credibility of science, as it suggests that paying is enough to be published.

Fourth and finally, never paying to be published protects against predatory journals, which only pretend to be scientific but do not care about peer review. These journals publish anything that looks superficially like a research article, as long as they collect APC to 'make the article open access'. Inexperienced researchers are most likely to fall into the trap.

Predatory journals try to appear legit. Here are a few characteristics to recognize them [18]: 1/ Their website or emails present false, contradictory or misleading information. 2/ They deviate from best practices. For instance, they lack a retraction policy or do not specify a Creative Commons license when publishing in open access. 3/ They lack transparency. For example, they do not disclose the APC amounts publicly, or editorial board members are unverifiable. 4/ They prospect aggressively. For example, they mass-email to solicit authors and volunteer editors for upcoming special issues.

While some publishing houses visibly specialize in predatory practices, others live in a grey zone. MDPI and Frontier Media, for example, do maintain a few serious journals in front of many much less respectable outlets [19]. By association, publishing with a grey zone editor damages a researcher's reputation, even if it happens to be in an outlet conducting an honest peer review.

5. Conclusion

Open access, the practice of making research outputs freely available online to anyone who wants to read or use them, is still a rare habit in Vietnam. A few grassroots initiatives still need to gather the strength to influence policy and launch institutional repositories. The October 2021 UNESCO workshop marks that the global academic community is ready to contribute expertise in that direction. Meanwhile, individual researchers in Vietnam can still contribute by seeking to publish first in free open-access journals, self-archiving any articles they publish beyond a paywall, and adhering to the first rule of professional writing: Never pay to be published.

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