Informationspolitik

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The politics of open knowledge: production, certification, and control

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Abstract: This article is based on a keynote speech given at the OASPA conference in Leuven on 22 September 2025 critically analyzing the power relations surrounding open knowledge. The central thesis is that what matters is not who owns knowledge, but who can use, produce and evaluate it – depending on social, cultural and financial capital. Without these resources, open knowledge remains available but not equally usable. The core problems lie in knowledge production and evaluation: peer review processes, database indexing and ranking systems determine the visibility and recognition of knowledge. However, the effectiveness of these procedures is the subject of intense debate, as is the inadequate implementation of standards, the indexing of dubious journals and systematic distortions in favor of the Global North, renowned institutions and established publishers. It is therefore less a question of ownership and more a question of power: who can produce knowledge, and who decides on its credibility and dissemination? Political developments are manifesting themselves in cuts to open access budgets, restrictions on access to research data and even the suppression of undesirable knowledge production. In response, 'dark archives' (e. g., for arXiv at the TIB; Tobschall et al. 2025) or data backups (e. g., of PubMed by ZB MED) are being created to preserve scientific autonomy. AI also jeopardises open access principles by failing to cite sources when processing open content, which undermines copyright laws. One possible, albeit unrealistic, solution would be for publishers to voluntarily commit to only granting access to AI systems that cite sources correctly. Technical access restrictions for AI would run counter to the very idea of open knowledge. This reveals a fundamental dilemma between regulation and openness. Community-supported frameworks are proposed as a solution, such as a 'Trusted Open Knowledge' label that guarantees source references, establishes transparent evaluation and addresses structural inequalities. The central question remains: Who does science serve, and who determines what counts as knowledge?

Descriptors: Open Access, Open Knowledge, Science and technology, Knowledge, Publication, Quality, Artificial Intelligence, Author, Information law, Publishing, Financing, Evaluation, Censorship, Control

Die politische Dimension von offenem Wissen: Produktion, Zertifizierung und Kontrolle

Zusammenfassung: Der vorliegende Beitrag basiert auf einem Keynote-Vortrag der OASPA-Konferenz am 22. September 2025 in Leuven und analysiert die Machtverhältnisse rund um offenes Wissen. Die zentrale These lautet: Entscheidend ist nicht, wem Wissen gehört, sondern wer es nutzen, produzieren und evaluieren kann – abhängig von gesellschaftlichen, kulturellem und finanziellem Kapital. Offenes Wissen bleibt ohne diese Ressourcen zwar verfügbar, aber nicht gleichermaßen nutzbar. Die Kernprobleme liegen in der Wissensproduktion und -evaluation: Peer-Review-Verfahren, Datenbanken-Indexierung und Ranking-Systeme entscheiden über die Sichtbarkeit und Anerkennung von Wissen. Die Wirksamkeit dieser Verfahren wird allerdings intensiv diskutiert, wie auch die mangelhafte Umsetzung von Standards, die Indexierung zweifelhafter Journale sowie die systematische Verzerrungen zugunsten des Globalen Nordens, renommierter Institutionen und etablierter Verlage. Es geht also weniger um Besitzverhältnisse, sondern um Macht: Wer kann Wissen produzieren, und wer entscheidet über dessen Glaubwürdigkeit und Verbreitung? Politische Entwicklungen manifestieren sich in Kürzungen von Open-Access-Budgets, Zugangsbeschränkungen zu Forschungsdaten und sogar in der Unterdrückung unerwünschter Wissensproduktion. Als Reaktion entstehen „Dark Archives" (z. B. für arXiv an der

Remark: This article is based on an introductory talk given during a keynote panel at the Open Access Scholarly Publishers Association (OASPA) conference on September 22, 2025, in Leuven, Belgium. The title and theme of the panel were: "Who Owns Open Knowledge? Who has the power and responsibility?"

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TIB; Tobschall et al. 2025) oder Datensicherungen (etwa von PubMed durch ZB MED), um wissenschaftliche Autonomie zu bewahren. Auch KI gefährdet Open-Access-Prinzipien durch fehlende Quellenangaben bei der Verarbeitung offener Inhalte, was Urheberrechte untergräbt. Eine mögliche, wenn auch unrealistische Lösung wäre eine freiwillige Verpflichtung der Verlage, nur KI-Systemen mit korrekter Quellenangabe Zugang zu gewähren. Technische Zugangsbeschränkungen für KI würden den Grundgedanken offenen Wissens selbst konterkarieren. Dies offenbart ein grundsätzliches Dilemma zwischen Regulierung und Offenheit. Als Lösung werden gemeinschaftsgetragene Rahmenwerke vorgeschlagen, etwa ein „Trusted Open Knowledge"-Label, das Quellenangaben garantiert, transparente Evaluation etabliert und strukturelle Ungleichheiten adressiert. Die zentrale Frage bleibt: Wem dient Wissenschaft, und wer bestimmt, was als Wissen gilt?

Deskriptoren: Open Access, Open Knowledge, Wissenschaft und Technik, Wissen, Veröffentlichung, Qualität, Künstliche Intelligenz, Autor, Informationsrecht, Verlagswesen, Finanzierung, Bewertung, Zensur, Kontrolle

La dimension politique du savoir libre: production, certification et contrôle

Résumé: Cet article s'appuie sur un discours prononcé lors de la conférence OASPA le 22 septembre 2025 à Louvain et analyse de manière critique les rapports de force autour du savoir libre. La thèse centrale est la suivante: ce qui importe, ce n'est pas à qui appartient le savoir, mais qui peut l'utiliser, le produire et l'évaluer, en fonction du capital social, culturel et financier. Sans ces ressources, les connaissances ouvertes restent certes disponibles, mais ne sont pas utilisables de manière égale. Les problèmes fondamentaux résident dans la production et l'évaluation des connaissances: les procédures d'évaluation par les pairs, l'indexation des bases de données et les systèmes de classement déterminent la visibilité et la reconnaissance des connaissances. L'efficacité de ces procédures fait toutefois l'objet d'un débat intense, tout comme la mise en œuvre insuffisante des normes, l'indexation de revues douteuses et les distorsions systématiques en faveur du Nord global, des institutions renommées et des éditeurs établis. Il s'agit donc moins de rapports de propriété que de pouvoir: qui peut produire des connaissances et qui décide de leur crédibilité et de leur diffusion? Les développements politiques se manifestent par des réductions des budgets consacrés au libre accès, des restrictions d'accès aux données de recherche et même la suppression de la production de connaissances indésirables. En réaction, des " archives sombres " (par exemple pour arXiv à la TIB; Tobschall et al. 2025) ou des sauvegardes de données (par exemple de PubMed par ZB MED) voient le jour afin de préserver l'autonomie scientifique. L'IA menace également les principes de libre accès en raison de l'absence de références lors du traitement de contenus ouverts, ce qui porte atteinte aux droits d'auteur. Une solution possible, bien que peu réaliste, serait d'imposer aux éditeurs l'obligation volontaire de n'accorder l'accès qu'aux systèmes d'IA qui mentionnent correctement leurs sources. Les restrictions techniques d'accès à l'IA iraient à l'encontre du principe même de libre accès à la connaissance. Cela révèle un dilemme fondamental entre réglementation et ouverture. La solution proposée consiste en des cadres communautaires, tels qu'un label " Trusted Open Knowledge " (connaissance ouverte fiable), qui garantit les références, établit une évaluation transparente et s'attaque aux inégalités structurelles. La question centrale reste la suivante: à qui sert la science et qui détermine ce qui est considéré comme une connaissance?

Descripteurs: libre accès, savoir libre, science et technologie, connaissance, publication, qualité, intelligence artificielle, auteur, droit à l'information, édition, financement, évaluation, censure, contrôle

Ownership matters less; exploitation is king

In everyday use, "knowledge" often simply means facts or rules – such as knowing when a store closes. In academia, as the realm we are considering, though, knowledge is the outcome of inquiry: traceable, testable, and methodologically sound. The question of who *owns* open knowledge is, in a way, aimless.

Open knowledge, as defined by the Open Definition, is knowledge made legally and technically free to access, use, modify, and share without restriction – by humans as well as by machines. While it formally belongs to everyone, ownership isn't the central issue: The real question is who can *use* and *shape* it and how one can do so (Herb, 2010).

What matters is who can make effective use of (open) knowledge – and that depends, as Pierre Bourdieu (1986) points out, on access to various forms of capital:

- **Social capital**: networks and relationships
- **Cultural capital**: prior knowledge or credentials
- **Financial capital**
- **Symbolic capital**: recognition, status, and prestige

Without these, open knowledge remains technically available – but not equally usable.

Only what is produced can be exploited: Who is in a position of producing (open) knowledge?

A deeper issue is emerging – not just due to Open Access models, which require payment of a fee for each publication, but also growing political influence: Does all valuable or truthful knowledge really have an equal chance to be published, and then made openly available? So the key question is again not *who owns knowledge,* but *who is in a first step enabled to produce and then publish open knowledge?* Admittedly, we have to be realistic and acknowledge that not *all* knowledge ever produced has actually been published – for instance, knowledge that is militarily relevant or strategically sensitive.

With the vast amount of (open) knowledge being produced, there are follow-up questions arising:

1. Who gets to certify open knowledge as trustworthy?
2. Particularly in academia, great importance is attached to such certification – for example, through peer review at the level of individual texts, and via indexing databases or rating lists at the level of journals or conferences – in order to assess the trustworthiness of knowledge.
3. Are these certifiers truly qualified to perform certification? There is vigorous debate – both in the context of peer review (Horrobin, 1996, 2001) and regarding rankings, ratings, and databases (Tennant, 2018) – about the extent to which these mechanisms can ensure quality.
4. Do these certifiers apply their standards in practice? Failures include poor-quality publications slipping through review or dubious journals being indexed in journal quality lists, rankings and databases. Furthermore, it must be noted that the application of these standards is subject to a social bias: publications from recognized scientific nations of the Global North are favored over others (Asubiaro et al., 2024; Zumel Dumlao & Teplitskiy, 2025), as are those issued by prestigious institutions such as renowned publishers or professional societies or submitted by authors from highly reputed organizations (Horchani, 2025).

Ultimately, it's less about who *owns* open knowledge and more about *Who can produce it?* And *Who can certify it?* Also, the direction of change driven by knowledge is primarily shaped by *producers*, who can initiate it, and *certifiers*, who can legitimize it.

Today, even in traditionally open societies, Open Access services are being defunded (Offord, 2025; Pollock & Staines, 2025; Rivera, 2025), and researchers from certain regimes face restricted access to data (Incorvaia, 2025; National Institutes of Health, 2025). More concerning, however, is growing political influence over what gets published, shifting control away from the scientific community.

Censorship can mean two things: blocking access to knowledge (e. g. restricting access to data), or preventing its production. While the former can often be bypassed, the latter is more serious – and we're now seeing cases where certain kinds of knowledge are not meant to be produced or be published at all.

Who can protect the freedom to produce knowledge?

Democratic states that respect academic autonomy are essential – without that, knowledge becomes politically compromised. Ideally, states and scientists would share this understanding, even though the already mentioned Pierre Bourdieu (1998) aptly observes that the relationship between the state and science is a complicated one: while the state guarantees the independence of science, it also poses a threat to it. To be precise, one must distinguish between the production and the publication of knowledge. Political influence can affect both levels: through the (non-) funding of certain research, and through the (non-)publication of its results. So, if politics tries to control science and influence what is published, e. g. fostering the production of regime-desired content, how should certifiers like reviewers and databases respond?

If peer review works as intended, state-influenced, low-quality research shouldn't be published. The responsibility would lie with the scientific community to uphold standards and resist political pressure. Database providers and rating agencies should continue to apply strict standards – not least to maintain acceptance, and in the case of database providers, to avoid compromising their own products. But just like courts or central banks, scientific communities can be compromised. Both the power to produce and the responsibility to certify knowledge are vulnerable to political influence. This is also evidenced by a study (Pagel et al., 2025) that investigated the extent to which the UK's independent scientific bodies are susceptible to politicization. It came to the following conclusion: "We found a vulnerable, fragmented system with a hotchpotch of arrangements for each independent body." (Pagel, 2025)

In a reality with authoritarian states restricting openness and even democratic ones steering research agendas, we must ask: Where can science still be safely and independently practiced? This situation is oddly reminiscent of 2016, when the Internet Archive scrambled (Strachan,

2016) – but succeeded – in setting up mirrors to prevent a politically motivated shutdown from wiping out critical information. It's no coincidence that the TIB – Leibniz Information Centre for Science and Technology and University Library (Germany) is now building a dark archive for arXiv (Tobschall et al., 2025). At the same time German Central Library of Medicine (ZB MED) is creating a backup of the PubMed database (Zentralbibliothek Medizin, 2025), and US researchers are rescuing their climate research data from the United States by transferring it to the German server PANGAEA (Boytchev, 2025).

How to deal with AI?

According to the International Organization for Knowledge Organization's knowledge pyramid (Frické, 2019), we move from data at the base to information, then knowledge, and finally wisdom at the top.

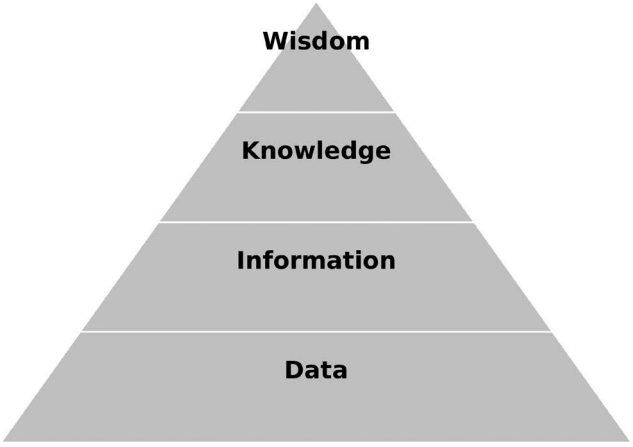

Fig. 1: Knowledge Pyramid (Taken from Frické, 2019).

AI, however – at least when its outputs are not curated – tends to remain at the lower levels: It replaces or at least confuses knowledge with data and information. This distinction matters, especially as AI systems increasingly interact with open content. For instance, is blocking AI bots from indexing open repositories due to server load (Shearer & Walk, 2025) a violation of open knowledge principles?

And if we want to strengthen author ownership, we'd need to ensure proper attribution – even in AI-driven contexts. But since AI can process open content freely, this is hard to enforce.

One potential, though probably not realistic step: a voluntary commitment from publishers to only allow access to AI systems that honor attribution. But this raises another dilemma: would that content still be truly open? Such measures could require technical restrictions that undermine the very ethos of open knowledge.

Any way out?

As we can see, it is not only Open Access funding models but also political leadership, geopolitical constellations, and AI that are putting open knowledge to a severe test, in terms of its production, certification, accessibility, and exploitation. How can the scientific and the open knowledge communities – which are not identical and in part pursue conflicting motives – respond to these challenges?

Knowing that the following suggestions must adjust to very different and diverse situations regarding countries, regions, communities perhaps we should consider developing community-driven frameworks – such as a *Trusted Open Knowledge Label* – that help define and promote responsible openness.

This means going beyond access and focusing on key values like:

- **Attribution**, especially in the context of AI systems that reuse and remix content at scale.
- **Transparency in review and certification**, so that trust in open content is earned and not assumed.
- And an explicit awareness of the **structural barriers** – social, political, and economic – that shape not only who produces knowledge, but whose knowledge is *recognized and legitimized*.

While modest in scope, this is a concrete step toward challenging the systemic exclusions that continue to define what counts as knowledge, who gets to create it, and how it is shared. This is not a particular issue of open knowledge in the 21st century, but it is (and has always been) a fundamental question of science: what is the purpose of science, and who owns science?

References

Asubiaro, T., Onaolapo, S., & Mills, D. (2024). Regional disparities in Web of Science and Scopus journal coverage. *Scientometrics*, *129*(3), 1469–1491. https://doi.org/10.1007/s11192-024-04948-x

Bourdieu, P. (1986). The Forms of Capital. In: J. G. Richardson (Hrsg.), *Handbook of Theory and Research for the Sociology of Education* (S. 241–258). Greenwood Press.

Bourdieu, P. (1998). Vom Gebrauch der Wissenschaft. Für eine klinische Soziologie des Wissenschaftlichen Feldes. (*édition discours)*. Universitätsverlag Konstanz.

Boytchev, H. (2025). German institutions back up threatened US climate data. *Research Professional News*. https://www.researchprofessionalnews.com/rr-news-europe-germany-2025-5-german-institutions-back-up-threatened-us-climate-data [15.1.2026].

Frické, M. (2019). The Knowledge Pyramid: The DIKW Hierarchy. *Knowledge Organization*, *46*(1), 33–46. https://doi.org/10.5771/0943-7444-2019-1-33.

Herb, U. (2010). Sociological implications of scientific publishing: Open access, science, society, democracy and the digital divide. *First Monday*, *15*(2). https://doi.org/10.5210/fm.v15i2.2599.

Horchani, R. (2025). Impact of institutional affiliation bias in the peer review process. *Insights the UKSG journal*, *38*, 6. https://doi.org/10.1629/uksg.681.

Horrobin, D. F. (1996). Peer review of grant applications: A harbinger for mediocrity in clinical research? *Lancet*, *348*(9037), 1293–1295. https://doi.org/10.1016/S0140-6736(96)08029-4.

Horrobin, D. F. (2001). Something rotten at the core of science? *Trends in Pharmacological Sciences*, *22*(2), 51–52. https://doi.org/10.1016/S0165-6147(00)01618-7.

Incorvaia, D. (2025). *NIH blocks researchers in China, Russia and other countries from multiple databases*. Fierce Biotech. https://www.fiercebiotech.com/research/nih-bans-researchers-china-russia-and-other-countries-multiple-databases [15.1.2026].

National Institutes of Health. (2025). *Enhancing Security Measures for NIH Controlled-Access Data*. https://grants.nih.gov/grants/guide/notice-files/NOT-OD-25-083.html [15.1.2026].

Offord, C. (2025, April 18). *Trump administration targets academic journals with attorney letter, proposed funding cuts*. https://www.science.org/content/article/trump-administration-targets-academic-journals-attorney-letter-proposed-funding-cuts [15.1.2026].

Pagel, C. (2025). *The UK's independent scientific bodies are highly vulnerable to politicisation*. Making sense… of evidence, data, and the stories they tell. https://christinapagel.substack.com/p/the-uks-independent-scientific-bodies [15.1.2026].

Pagel, C., McKee, M., & Flynn, L. (2025). *UK's arm's length public bodies are highly vulnerable to politicisation*. UCL Policy Lab. https://www.ucl.ac.uk/policy-lab/sites/policy_lab/files/anchor_-_strengthening_the_institutions_-_2025.pdf [15.1.2026].

Pollock, D., & Staines, H. (2025). How much will cuts to NIH funding affect scholarly publishing activity? *DeltaThink*. https://www.deltathink.com/news-views-how-much-will-cuts-to-nih-funding-affect-scholarly-publishing-activity [15.1.2026].

Rivera, C. (2025). Chaos, Cuts and Censorship – Expected Impact on Scholarly Publishing from US Government Actions – Knowledge-Works Global Ltd. *Knowledge Works Global*. https://www.kwglobal.com/blog/impact-on-scholarly-publishing-from-us-government-actions [15.1.2026].

Shearer, K., & Walk, P. (2025). *Report of the COAR Survey on AI Bots*. COAR Confederation of Open Access Repositories. https://coar-repositories.org/wp-content/uploads/2025/06/Report-of-the-COAR-Survey-on-AI-Bots-June-2025-1.pdf [15.1.2026].

Strachan, B. (2016). Fears of Trump prompt Internet Archive to make mirror site in Canada | CBC News. *CBC Canada's Public Broadcaster*. https://www.cbc.ca/news/canada/british-columbia/fears-of-trump-prompt-internet-archive-to-make-mirror-site-in-canada-1.3877232 [15.1.2026].

Tennant, J. P. (2018). The state of the art in peer review. *FEMS Microbiology Letters*, *365*(19). https://doi.org/10.1093/femsle/fny204.

Tobschall, E., Israel, H., & Lindlar, M. (2025). *Protecting Science: TIB builds Dark Archive for arXiv – TIB-Blog*. TIB Blog. https://blog.tib.eu/2025/05/14/protecting-science-tib-builds-dark-archive-for-arxiv [15.1.2026].

ZB MED – Informationszentrum Lebenswissenschaften. (2025). Infrastructure made in Europe: Securing information provision in biomedicine and the life sciences. https://www.zbmed.de/en/about/press/latest-news/article/infrastructure-made-in-europe [15.1.2026].

Zumel Dumlao, J. M., & Teplitskiy, M. (2025). Geographical diversity of peer reviewers shapes author success. *Proceedings of the National Academy of Sciences*, *122*(33), e2507394122. https://doi.org/10.1073/pnas.2507394122

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