

Free research needs the free circulation of ideas¹

On the current development of Open Access at the Austrian Science Fund (FWF)

In the 2011, the FWF has spent € 2.1 Mio for all kind of publication costs (subsidies for book publications, page charges, submission fees, colour pictures and for Open Access publishing). That is about 1% of the FWF's budget. Two-third of this cost was spent for Open Access publishing. However, what does justify this significant investment in Open Access?

I. Open Access (OA): Aspirations and Reality

Eight years ago, the FWF signed the [Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities](#), by which it agreed to support OA for scientific publications on the web. Since then, the arguments favouring OA – listed in the following – have remained the same and are supported by [almost 90% of researchers from all fields](#), as an international survey shows.

(a) Science as a Public Good

Research is mainly paid for by the [taxpayer](#). Publicly funded researchers work as editors and reviewers for publishers, whose printing costs are often further subsidised with public funds. The products of publishers are almost exclusively bought and subscribed to by public libraries. From both an ethical and an economic perspective, it is fitting that both academia and the public are granted free and open access to these publications.

(b) Visibility and Transfer of Knowledge: OA increases the visibility of publications within the [scientific community](#) and facilitates the transfer of scientific knowledge into [society](#). In this way, people who would otherwise be unable to afford access to academic publications can participate. This applies not only to the general public with an interest in academic research, but specifically to practitioners and people involved in the fields of medicine, engineering, politics, public administration, as well as potential users from SMEs and researchers from smaller research institutes and developing countries.

(c) Cross-Linkage of Knowledge: Via the internet, the immense potential of cross-linking scientific knowledge (such as [text mining](#) or [virtual collaborations](#)) has become apparent. This potential can only be realised fully if the content and results of scientific and academic research become publicly and openly accessible.

(d) Price Development: One of the reasons for the rise of OA was the sharp increase in subscription prices by scientific publishers. The key publishers sold packages of journals to libraries which often also included very expensive journals of mediocre quality ([big deal](#)). This policy made it impossible for many research institutions to afford all relevant publications ([serial crisis](#)).

OA journals and the archiving of pre- and post-prints of articles published in classical subscription journals have succeeded in putting pressure on big publishers. That situation has recently caused a confrontation between some commercial publishers which support the

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[Research Work Act \(RWA\)](#) in the US and [researchers](#) who proactively support the idea of Open Access.

The first cases of success of Open Access initiative have already become apparent:

Open Access Journals (Gold Road): Out of approximately of 27,000 to 30,000 scientific journals, some [7,500](#) publish according to the OA model, and this figure is increasing by 3.5% annually.

Some funding organisations such as the FWF agreed very early to cover the costs authors are sometimes confronted with when publishing in OA journals. Many are still published at no additional cost to the authors and are supported by research institutions, libraries or academic societies. In addition, new publishers such as [Bentham](#) (230 journals), [Hindawi](#) (300) or [BioMedCentral](#) (230) cover the costs of their journals with “author fees”.

The non-commercial publisher [Public Library of Science \(PLOS\)](#) has proven to be especially successful. Its seven journals have outstanding impact factors. Among them is [PLOS One](#), by now the largest science journal in the world, whose publication model led to a general push in innovation.

As a result of these developments, large international publishers and scientific societies such as [Elsevier](#), [Wiley-Blackwell](#), [Sage](#), [Springer](#), [Royal Society](#), [Taylor-Francis](#), [Nature Publishing Group](#) or the [American Physical Society](#) have launched OA journals themselves.

As is the case with any publication model, it will take time until some OA journals have successfully built their own reputation. Some other OA journals will hardly be noticed. The main difference to the subscription model, however, is that the big publishers can no longer sell mediocre journals to libraries as part of their sales model (see “big deal” above).

Publishing policies (Green Road): Worldwide, [over 200 institutions](#) (including 52 funding organisations) urge their researchers to make their publications publicly accessible wherever legally possible. Over two thirds of [1,000 publishers](#) allow the archiving of pre-prints and/or post-prints of a publication printed in a traditional journal by the authors.

Repositories: Researchers can choose from over [2,600 registered disciplinary and institutional repositories](#) to provide access to e-copies of their publications. Among those are highly prominent special repositories such as [arXiv](#), [CiteSeerX](#), [RePEc](#), [SSRN](#) or [PubMedCentral](#). These repositories have now made almost six million full texts publicly accessible. PubMedCentral has implemented a decisive feature vis-à-vis all other repositories, as it collects not only pre-prints (i.e. working papers before peer review) but also reviewed publications.

Percentage of Open Access: According to scientific estimates, [more than 20% of all articles published in academic journals](#) were made accessible via OA journals or via the archiving of pre-prints and post-prints on the web in 2008. This not only [revitalised the hitherto comparatively conservative publishing industry](#), but seriously and empirically – and no longer just in a normative way – questioned the subscription model of scientific journals as well as the direct and indirect subsidies to publishers who merely provide restrictive access to their publications.

The FWF – and especially the scholars funded by the FWF – contributed to this development.

II. Further Development of the FWF's Open Access Policy

Until 2009, the FWF mainly focused on three areas:

- (a) To inform researchers via the [FWF's channels](#) about the relevance and significance of OA and the options already available.
- (b) Since 2004, the FWF has been developing an [OA Policy](#) which in 2006 resulted in a [mandate](#). Accordingly, all project leaders and staff are requested, if legally possible, to make their publications publicly accessible on the web either by archiving an e-copy in a suitable repository or by publishing in an OA medium.
- (c) Since 2004, the FWF has fully funded the costs of OA for peer-reviewed publications until three years after the end of a project through the [Peer-Reviewed Publications](#) programme. This is the most important instrument in the FWF's funding schemes in this context.

To accelerate the dissemination of OA to all disciplines, the FWF has implemented further instruments since 2009:

1. UKPubMedCentral

[PubMed](#) is not only the largest bibliographical database in the Life Sciences (about 21 million entries), it also has by far the highest acceptance and utilisation results of any discipline-specific bibliographical database. This was mainly made possible through the policy and funding by the [National Institute of Health \(NIH\)](#) as well as many funding institutions in the UK such as the [Wellcome Trust \(WT\)](#).

The initiative also includes the full-text archive [PubMedCentral](#), which comprises over 2.3 million OA articles. PubMedCentral's main asset and advantage over repositories such as arXiv, CiteSeerX, RePEc or SSRN is that it does not archive pre-prints but copies or originals of reviewed journal articles.

Since March 2010, the FWF has contributed to this initiative via the partner repository [UKPubMedCentral](#). Therefore, all project leaders in the Life Sciences obtain a project account with [UKPubMedCentral](#) through which they can archive their publications. Just 18 months after the FWF joined UKPubMedCentral, more than [2,300 reviewed publications](#) were publicly accessible. More than [1,100 publications](#) are directly linked to the respective research projects.

2. Settlement of publication costs

Whenever additional costs for [reviewed publications](#) from FWF-funded projects arose, the practice of the FWF was that the project leaders paid for it out of their regular FWF funds, and the FWF then reimbursed them for these expenses. To facilitate this procedure for the project leaders, the FWF has negotiated contracts with large publishers such as [Elsevier](#), [Wiley-Blackwell](#) and [BioMedCentral](#) to establish simplified and direct invoicing procedures between the publishers and the FWF. This model made it possible to agree on special discounts with Wiley-Blackwell and BioMedCentral. (Similar agreements are planned.)

Some large publishers offer the option of [Paid Open Access](#); through additional funding by the FWF, traditional subscription journals transfer original publications to repositories for reviewed publications such as UKPubMedCentral. Disciplines without repositories for reviewed publications do not have to opt for this (see [Elsevier](#) and [Wiley-Blackwell](#)). If this option is not chosen, it has to be ensured that – where necessary by respecting an [embargo](#)

[period](#) – the authors archive a postprint of the article on a web site or in institutional repositories.

3. Stand-Alone Publications

OA is still more common in the life and natural sciences than in the [humanities](#). This is due to divergent practices of publication within the humanities, in which the monograph and the edited volume still play an important role.

Taking this into account, in its [Stand-Alone Publications](#) programme (book publications) the FWF has started to provide publishers with additional funding when they also publish OA versions.

From December 2011 onwards, the FWF will substantially expand this policy:

- (a) In order to raise the quality of book publications, professional editing is funded.
- (b) Publishers receive financial benefits for installing an international peer-review system, which is actually still uncommon in the German-speaking world.
- (c) International visibility is improved by funding translations and editorial support provided by professional translators.
- (d) All book publications will be archived, simultaneously with the printing version, in the FWF E-Book Library (to be implemented in 2012). Linking to repositories such as [OAPEN](#) and [OpenAire](#) will ensure excellent international visibility.

4. International cooperation

In view of a global scientific community whose publications are frequently published by multinational publishers, a purely national OA policy would actually be counterproductive. For this reason, the FWF has contributed to a draft for a common recommendation of the umbrella groups of European funding and research institutions ([EUROHORCS](#) and [ESF](#), now [Science Europe](#)). Out of numerous recommendations, three will be focused on in particular:

(a) *“Implement policies and workflows that allow scholars to pay open access publication charges”*

The funding of open access publications, a practice the FWF implemented in 2004, will be recommended as a standard for European funding and research.

(b) *“Agree on conditions for covering Open Access Gold fees”*

In negotiations with the publishers, binding conditions for European funding and research institutions will be defined for the funding of OA costs. Various [models](#) have already been discussed.

(c) *“Develop a common program that encourages publishers to change the business model of prestigious subscription-based journals from all disciplines to open access or to launch new high level open access journals”*

This addresses two problems: on the one hand, the relative scarcity of OA journals in the high-impact segment, and on the other, the need to replace the existing and prevalent subscription model with new [financing models](#). Here, a common program at the European level will facilitate the transition of high-quality journals to OA publishing.

The promotion of OA by the FWF can be seen as a success story, even if the following quote may sound exaggerated: [“The Austrian Science Fund \(FWF\) is the research funder with the most comprehensive open access publishing policy. Not only does it support open access to](#)

[articles and books, but it also does so in an international framework.](#)” (p. 26). It is also necessary to note that in comparison to other countries, the FWF’s policy has so far found only few allies in Austria.

III. What needs to be done?

The main goal of the FWF is to remodel the prevalent system of publishing in such a way that all scientific and scholarly publications are publicly accessible on the web in their original form while meeting high quality standards. In the short term, this will presumably increase the total costs of publishing. [Potential savings](#) will be realised only in the long term.

This development will neither render publishing houses superfluous, nor will it compromise quality overall. However, it will – in accordance with the motives of OA – increase the responsibility and transparency of the sciences to taxpayers, increase its visibility, accelerate the transfer of knowledge into society, foster the interconnectedness of new insights, and lead to innovations on the publication market.

One might understand the process outlined above both as a logical consequence of the profound impact of the internet and as hardly reversible. The decisive question is how this process can be accelerated to minimise uncertainties and transition costs.

1. How to accelerate the process

The implementation of the following measures on the individual, institutional, and national level could be decisive:

Service organisations for the sciences: To ensure that researchers can concentrate on their job, namely doing research, it is the responsibility of scientific service organisations such as ministries, funding organisations, scientific societies, research institutions, and libraries to support researchers in a more fundamental way. In this respect, Austria has a great deal of catching-up compared with the USA, Canada, the Netherlands or Germany. Quite a few remarkable efforts have recently been made. [The University of Vienna](#) has a very active OA task group. [Institute of Science and Technology \(IST Austria\)](#) is in the process of installing a very user-friendly repository according to the OA principle, and the [Austrian Academy of Science \(ÖAW\)](#) has recently formulated its first OA policy. Concerted action, however, is still lacking. Thus, we would like to present a few additional suggestions for discussion:

(1) Open Access Policy: Both research and funding institutions in Austria should agree on minimum standards for an [OA mandate](#).

(2) Consulting: OA policy requires researchers to have contact persons, ideally based at their research institutions, who can provide professional information on the existing content-related, technical and legal options with regard to OA.

(3) Funding: According to the model used in the [Compact for Open-Access Publishing Equity](#), research and funding institutions should provide funding for publications in quality-controlled OA media. For example, some Austrian research institutions have already taken initial steps in this direction for [BioMedCentral](#).

(4) Archiving in Repositories: Subject-specific repositories such as [arXiv](#), [CiteSeerX](#), [RePEc](#), [SSRN](#) or [PubMedCentral](#) have proven highly successful so far. The researchers’ motivation to self-archive is high there, as their works are directly exposed to the relevant

scientific community and vice versa. Some time ago, research institutions already started to create institutional repositories and to encourage researchers to archive their publications there. However, researchers are confronted with the demands of multiple archiving, which is considered stressful. Thus, it appears to be more advisable for research institutions to come up with technical solutions by which cross-linkage is made possible, thus requiring a scientific text to be archived only once.

(5) Functional change of libraries: The head of the library at Munich University, Klaus-Rainer Brintzinger, puts forward the following vision: *“Once the idea of open access is fully realised, a library would no longer have any physical collections or holdings of their own. Its obligation would be to provide information either by providing structured meta-data, via individual research, or by providing research competence. In addition, a future library will provide publications and other forms of information on their institutional servers for the scientific audience.”*² Many libraries and research institutions, especially in the [English-speaking world](#), have turned this utopia into reality. They not only function as advisors for OA, but in many cases they also run their own OA publications. For smaller disciplines whose publications are of less interest to commercial publishers, this can be [especially relevant](#).

(6) Austrian Academic Press: In relation to the previous point, this could potentially lead to synergies in Austria. In recent years we have seen the creation of some rather small [university publishers](#) in Austria. In view of the success and quality that university publishers in the UK or in the US have attained, this development is very positive. It remains to be seen, however, whether such small presses can attain more than regional visibility. Would it not make more sense if several research institutions joined forces and founded an Austrian Academic Press modelled on the Anglo-Saxon university presses? Besides very high international quality standards, a corresponding international presence could be established, for instance via OA.

(7) Awareness: These initiatives will only be successful if they are supported by the majority of researchers. It should be remembered that OA, contrary to the opinion of some [critics](#), is not an invention of the research bureaucracy. It developed as an initiative of researchers who persuaded fellow researchers and utilised existing possibilities: either by using the archiving options in repositories, by publishing in OA journals, or by putting pressure on publishers and scientific societies by acting as editors or reviewers for OA publications.

Such a commitment can be supported with organisational assistance and advice. Initially, [international success stories](#) or declarations of support from prominent researchers could be publicised, as was recently demonstrated in the [Netherlands](#).

There are some related incentives in Austria. For example, from Sept. 26 to Sept. 27, 2012, the German-speaking [Open Access Days](#) will take place in Austria for the first time.

(8) (Research) Policy: In 2009, the RFTE (Austrian Council for Research and Technology Development) suggested in its [Strategy 2020](#) that “...all public research results in Austria (in particular publications, primary research data, etc.) should be freely accessible on the web by the year 2020 – key word: open access.” (p. 31). If this objective is taken seriously, the legal and infrastructural framework (esp. [copyright](#)) has to be discussed with the relevant policymakers.

² Klaus-Rainer Brintzinger (2010): Piraterie oder Allmende der Wissenschaften? Zum Streit um Open Access und der Rolle von Wissenschaft, Bibliotheken und Markt bei der Verbreitung von Forschungsergebnissen, in: Leviathan, 38, 331–346 (author’s translation).

This paper only touches upon some key issues. Even if most problems were solved, many unanswered questions would remain. For instance, how can we make research data openly accessible to all scientific disciplines in a technically and legally satisfactory way?

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