

COMPLIANCE IN A WORLD OF LIMITED CHOICES

Lars Pettersson

Few people would oppose the thought that research benefits from being offered to an audience as wide as possible. Rather than being restricted to a limited few having access to commercial, firewalled pdf depositories, scientific results benefit from being disseminated widely using open self-archiving depositories or open access licenses. It is therefore understandable that major funders such as NIH, the Wellcome Trust and the Research Councils UK have worked for some time towards explicitly stating in research contracts that research funded by them should be open access or self-archived in public repositories shortly after publication. These long-term aims of the funding agencies are no longer aims, they have become contract clauses and publishing open access is now compulsory among a wide variety of funders with more and more funders worldwide rapidly joining the movement. As a researcher, breaking these clauses by publishing in non-endorsed ways means that you risk having your current funds withheld and future applications turned down automatically. In other words, there will soon be no such thing as non-compliance. There may well be ways of trying to coax borderline, non-endorsed publishing strategies into being accepted by funders, but by and large, compliance will soon be universal.

In other words, as Frantsvåg points out in Sciecom Info (2013), there is little doubt that OA non-compliance will soon have dire consequences for researchers. Funders and universities will enforce these regulations. But there are questions to be asked. Given that funds are limited and publishing options are set by OA contract obligations, how will researchers select outlets for their papers? What consequences will these choices have for the journal diversity that we see today? Will the smaller, niched and often society-run journals survive when their publishers look into new ways of keeping publishing profitable? Or will pricing policies and contracts lock smaller journals into moribund, downward financial spirals while the rest of the publishing business splits into a two-tier situation with high-profile journals with high OA fees getting the best of the best and the remaining scientific output being published by aggregating journal models with

competitive OA pricing policies and streamlined, semi-automatic production. Inspired by the revolutionary publishing model invented by the Public Library of Science (PLOS) where primary PLoS journals exist in a symbiotic relationship with the aggregating journal PLoS One, we now find similar solutions being launched and actively promoted by the publishing industry, with titles such as Ecology and Evolution by Wiley-Blackwell, Perspectives in Science by Elsevier, and Nature Communications by Nature Publishing Group. At the same time, niched society journals are generally unable to offer either the large-scale production advantages of the aggregating journals or the reputation of the highest-profile journals. But how did we arrive at this situation? Are there ways of ensuring that the diversity survives? Or should we accept that the majority of smaller journals are lost, that this process towards a two-tier situation is inevitable?

To look into this, we need to move back in time to the point where small, niched journals chose to join major publishers and why they did so. Not long ago, all journals were print only and the incentive to have online presence was rather weak. But the emergence of the portable document format, the PDF, greatly simplified the process of offering online editions. The way of distributing these editions took quite some time to settle and early attempts of distributing pdf versions of journals included mailed CDs and USB sticks. But the most efficient way soon became the commercial online depositories that were created by Blackwell, Springer, Elsevier and other publishers. Library access to these online journal depositories was negotiated and restricted to those paying for the access or receiving complimentary access courtesy of the publishers. For smaller journals, participation in the consortia deals that publishers established with libraries meant that their publications became easier to find online than if they would create their own depositories. Journals would be found more easily, published papers would be read and cited more, and researchers would preferentially select journals that combined attractive pitch of their content with good

online presence. This synergy would in turn lead to a significant impact on the scientific community for journals as well as for researchers.

With a rapid movement towards using pdfs rather than printed editions, subscribers and libraries wanted to drop print subscriptions to reduce costs. But publishers argued that this would endanger the negotiated consortia structure as profitability risked being lost if libraries were allowed to drop print editions. So in many cases, libraries were locked into revised consortia models where combined pdf and print edition subscriptions were non-negotiable. You could drop the print edition but pricing would not necessarily go down. Situations such as these, where production costs went down because of reduced print runs and an increased focus on pdf editions, but where consortia subscription fees continued to increase gradually led to the emergence of the open access movement.

The response by the publishers to the open access movement is still evolving but some general patterns emerge and this is where the problems for the small and specialized, society-run journals surface today. While high-profile journals can motivate considerable OA fees because of their impact on the scientific community and publisher-owned aggregating journals cut OA fees and combine this with determined promotion, other journals are handled quite differently. For subscription journals included in consortia deals, the solution offered by publishers is commonly a hybrid OA model where authors may pay for having their articles OA in journals whose vast majority of papers are non-OA. The OA price tag is generally high, surprisingly similar between journals, and leads to OA manuscripts being hidden in primarily non-OA publisher depositories (albeit free for download). Paying for the subscription to hybrid journals that have OA content already paid by researchers is controversial and the inclusion of such

journals in consortia deals is likely to be questioned in due time. Another sign that the hybrid model is being questioned can be seen when university OA subsidies from e.g. Lund University are being offered to true OA journals only.

Interestingly, if hybrid OA prices could be set at a level that suited authors while still being enough to secure long-term economic viability of journals, then this could initiate transitions from hybrid models to full OA models. If OA prices are seen as reasonable, then the subscription model could be dropped. But this is where things become complicated. Although there may be hints of flexible OA fees coming in a not too distant future, OA hybrid fees are set purposely high by publishers to act as an insurance in the unsecure scientific publishing market. So the small and specialized, society-run journals that once joined the publishers consortia models to get access to the high-quality online depositories and subscription models now commonly face a dilemma where online depositories are well visited, but the only OA option available is a hybrid model which is seen by researchers as being too expensive. Movement into OA-compliance is difficult and the only available way is often to allow self-archiving after an embargo period which is seen as too short by the publishers and too long by funders and the research community. At the same time, publishers promote the two-tier model, direct the best papers to high-profile journals and try to coax as much of the remaining scientific output into aggregating journals. It is not a bright future for smaller journals unless they are allowed to influence their pricing policy more than they currently are. So – researchers will definitely be able to find scientific outlets that comply with the requirements set by funders. But they may find that the journal diversity that has been around for quite some time is being reduced drastically.



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CAN OPEN ACCESS CREATE A SOUND SCHOLARLY PUBLISHING MARKET?

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It is well known that the traditional subscription-based model for scholarly publishing has created an unhealthy and partly invisible market due to the way journal subscriptions are managed by the university libraries. Researchers that read the journals are usually not aware of the costs of the subscriptions managed by the university library. This means that they cannot judge the value of being able to access the content of the journal in relation to the price of the subscription. Since the event of the Internet, the online subscriptions are so transparent that many scholars even believe that the journals are free to read on the Internet, and therefore get surprised when they try to read the journals from outside of campus and find themselves prohibited to reach the content and learn that the yearly subscription of the journal of their choice can cost as much as a small sized car.

Today, when open access is reforming the landscape of scholarly publishing, seems to be the right time not to redo the mistake of the subscription management in hiding the costs from the researcher. Instead, we should attempt to create a more open market where the vendor – the publisher – meets the actual customer of the services – the researcher – so the customer can evaluate the publishing service in relation to its cost. In the previous issue of ScieCom Info, Leif Longva presents an interesting idea: Why not apply a tendering process to purchase publishing services for open access articles?¹ Longva is rightly arguing that if we start to create block funds to cover the article processing charges (APC's) requested for open access (OA) publishing, we risk to create a situation similar to institution-wide subscriptions in that it “holds no incentive for the buyer of OA publishing (the authors of research papers) to shop around for best value for money”. Longva is therefore suggesting a tendering model for the publishing in open access journals, following the same procedure as when for instance equipment and computer systems are acquired by the universities.

The SCOAP³ initiative of CERN is in the process of

doing just this. Its goal is to convert subscription funds to a sort of tendered peer-review service for the 7000 yearly articles within the field of high-energy physics (HEP). Open access publishing has been negotiated for 12 core HEP journals from 7 publishers, covering about 90 per cent of HEP publishing. The SCOAP³ initiative has a yearly budget of 10 M€ and is managed by CERN as a strong central body. But the scope is limited to HEP articles only, and we still have to see if CERN will succeed with its mission. If CERN were to succeed, indeed the SCOAP³ could act as a catalyst for a change of the scholarly publishing system, but extending the model beyond the HEP field would presumably be rather difficult and take tremendous amounts of work and resources.

The basic weakness of Longva's reasoning is that the journal market is not an open and competitive market with comparable products in the same way as the markets for instance scientific equipment and computer systems. Journal titles are often said each to be a “mini-monopoly” of its own, since the impact and importance of the journal in the scientific field it focuses on often does not have any real competition. Journal production is in fact so non-sensitive to competition and price fluctuations that it often is considered to be a prototype for an “inelastic business environment”.

If you for instance do your research on certain species of the flora or fauna of Amazonas, and there is a journal with an editorial board and an audience for exactly that topic, why should you bother publish elsewhere, even if you found an OA journal with a lower APC? The same kind of reasoning may be applied to the impact factors of journals in broader fields of research. If there are several journals to choose among within the field, the journal with the highest prestige will be the preferred choice for the researcher and the cost-sensitivity in the choice where to publish will be fairly low, due to the way scientific achievements are judged and careers are built. So if each journal with its topic, audience and impact factor is a sort of monopoly; how do we change the

¹ Longva, 2013

situation to create a more competitive market? Our suggestion is that we take a step further into Internet-based publishing and abandon the packaging of articles into journals, issues and volumes. There is no reason to bundle articles in issues linked to journal titles when the publishing is not distributed in paperbound form anymore.

The journal and its issues are artefacts of paper-based publishing and distribution of scientific findings. In a true Internet-based publishing environment each article can stand by itself and be marketed via communities and social media and retrieved via the big search engines. We are indeed beginning to see this happening with the emergence of the so-called mega-journals as PLoS ONE, PeerJ, eLIFE, and SAGE Open.

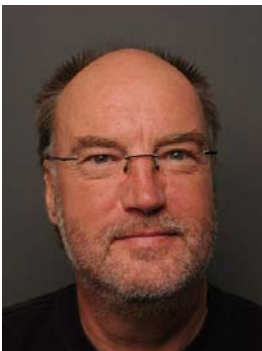
With mega journals the focus of the publisher services is shifting from the reader to the author. A true mega-journal does not do any service of selection to the reader; the mega-journal just serves the publishing researcher with a peer review service and a quality stamp.

The subscription-based journal market was built on an old business model for selling *products to readers*, i.e. journals with selected and bundled articles, whereas the new open access publishing is more of a business model for selling *services to authors* in the form of peer-review and quality assurance.

The conclusion of this line of thought will be that a healthy publication market cannot be created as long as we are dependent on prestigious titles and niched journals giving services to readers. We have to move beyond journal publishing and free the article from the fetters of the journal to get a sound scholarly publishing market. Open access publishing is a first important step on this path, but only a first step. To get further towards a healthy publishing market with proper price elasticity for the review service, the service to the author has to be disconnected from the service to the reader and the related journal title. Only when articles are reviewed and published in their own right can we get a market where the costs of APC's can be valued against the quality of the peer review service given by the publisher.

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ALTMETRICS: AN ALTERNATE PERSPECTIVE ON RESEARCH EVALUATION

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Introduction

Scholarly publishing has entered an era where the paper journal is slowly becoming obsolete, and new publication types emerge from open science communities on the Internet. Along with this development also comes an increased need for research evaluation that is tailored to these new publication types and channels, as a supplement to the traditional academic evaluations based on article and citation counts. Enter Altmetrics: tightly connected to open science movements, the altmetrics community has started tracking novel impact data in order to provide a more complete image of impact, reflecting other sides of scholarly activities than merely the communication amongst researchers – the otherwise much-coveted citations.

Recent developments in social media and Internet communication have improved our possibilities to discuss, download and share material in real-time and across the globe. And much of the data from social media websites is available for data mining, allowing analyses of social links between people or the communication around specific topics. This allows quantitative analyses of something which could be considered societal impact, and thus opens for evaluation of a different side of research output. These new potentials for evaluation have collectively been coined “altmetrics” by Jason Priem, indicating their nature as alternatives to the established bibliometric (Priem, Taraborelli, Groth, & Neylon, 2010). The purpose of the method is to give an alternative, multidimensional view on impact so that the traditional evaluative bibliometric approaches could be presented together with altmetrics and represent a broader view on the impact of research (Priem, Piwowar, & Hemminger, 2012). This wider perspective encompasses different sources of impact, as described above, but also different objects of evaluation, such as data sets or software.

In line with the open science movements, transparency is also an important aspect of the altmetric methodology. At first glance, this is a sympathetic and

classically scientific trait, but for altmetrics it is more than that. As will be discussed further in the following, and as one might imagine, the use of Internet data from multiple sites raises concerns about data consistency, validity and robustness. Transparency in methodology and data acquisition might remedy these problems, and at the same time create trustworthy indicators of research impact.

This paper presents some of the key viewpoints, tools and data sources of altmetrics, discusses some of the applications and possibilities and also some of the current criticism. The paper is not an in-depth review, but should rather be seen as a digest of some of the main trends. While some proponents of altmetrics see the approach as opposed to parts of bibliometrics, in particular the journal impact factor, we prefer to see the two fields as complementary and will focus on this perspective.

Altmetric methods & materials

The altmetrics concept incorporates a number of variables, such as view count, downloads, adaptations, bookmarks and comments, in order to measure impact. The purpose is to provide a more complete image of the impact of research publications. Views and downloads may give us an impression of how interesting a publication is, and how much it is used. While citations provide us with a similar image, it is not self-evident that all highly-downloaded articles are necessarily highly-cited as well. As an example, it makes sense to expect the ratio between downloads and citations to be substantially different for a clinically relevant article, presenting the final stage of drug-testing, relevant to general physicians, media, patients and medical students alike, compared to basic, biomedical research presenting the initial development of the same, new drug, mostly relevant to other researchers. At the same time, we would expect a relationship between downloads and citations, as we would expect researchers to be among the top consumers of research articles. Evidence for this has been found (Priem et al., 2012), showing a stronger

correlation between citations, pdf downloads and social reference saves (e.g. Mendeley and CiteULike) as between those and Facebook- or PLoS-hosted discussions, pageviews and shares. Another result of the study was the presence of different types of articles, with regard to impact types, showing e.g. that 1 in 5 articles are saved in reference management systems by many readers, while they are only cited rarely. Citations, downloads and readership may thus be similar for many articles, but for almost as many¹, the variables represent something different.

A number of websites are currently offering different altmetric-based impact indicators, based on downloads, tweets, likes etc. such as Altmetric.com, Impactstory.org, Mendeley, CiteULike, Nature and Faculty of 1000. Some of them measure a specific variable and some can measure impact across different variables. Altmetric.com, Impactstory.org and Nature provide the opportunity to measure downloads, tweets, likes, views etc. from different platforms on articles and other publications with a digital object identifier (DOI). On Impactstory.org one can also retrieve information about conference papers, datasets, blog posts, slide shows, software and web pages. On CiteULike and Mendeley one can find and share articles and references, and Faculty of 1000 presents expert article recommendations by peers.

One of the advocated advantages of altmetrics is that data can be retrieved relatively quickly after the publication date, whereas citations take time to accumulate. Some of the tools may even allow measurements of interest prior to publication, e.g. by quantifying pre-publication open-review discussions. Altmetrics thus provide a faster evaluation of the individual article, than citations can. Whether this is an actual advantage may be debatable; in some cases, research needs time to mature – the extreme case being the so-called “sleeping beauties”, articles which remain uncited for decades, before their worth is discovered (Van Raan, 2004). However; if the alternative is to evaluate individual articles through derived indicators, e.g. by applying the journal impact factor to individual articles as an expected impact, then altmetrics might be a useful alternative.

Another aspect is that altmetrics can be applied to almost all scientific contributions, and thus used in several situations e.g. for scholarly curricula vitae (Piwowar & Priem, 2013), in funding and describing different aspects of impact e.g. public vs. scholarly impact. The applicability to different publication types also enables researchers to use different scientific channels than research articles, thereby allowing more natural forms of publishing while still being credited for their work (Piwowar, 2013).

Summing up, large-scale differences between citations and altmetric variables have been identified, however; the various online tools focus on the individual paper or author, and it is unclear whether the same types of conclusions can be drawn on this level. In fact, these online tools are by some interpreted as vanity mirrors (Wouters & Costas, 2012), and it remains to be seen whether these tools will have an impact of their own.

Challenges

Quite similar to older discussions in the bibliometric community (Glänzel & Schoepflin, 1994; Glänzel, 1996), acquiring data for altmetric evaluation is vulnerable to inconsistencies in databases, acquisition modes and availability (Priem et al., 2012). This is also stressed by Wouters & Costas (2012, pp. 40–41): “In the framework of research evaluation, transparency and consistency of data and indicators may be more important than free availability”, with particular emphasis on the consistency, and especially lack of same, in some sources of altmetric data.

The saving grace of altmetrics in this regard may be the transparency, integrated into the core philosophy; if inconsistencies are documented and the documentation is available to the public, some of the problem disappears, as it is possible to take these issues into account. However, transparency does not necessarily make e.g. download data from different sources comparable. A simple example might help clarify this issue: If two publisher websites both announce article downloads on their website, and one website counts each and every click on “PDF” as a download, while the other tracks downloads as unique per IP-address, the total downloads for any paper could not possibly be compared to those of another paper available from the other publisher. Some altmetrics tools available online (e.g. ImpactStory) solve the problem by using more robust metrics, such as the number of readers on Mendeley and CiteULike, and clearly stating the source of data and even linking

¹ 21% of all papers were cited, read and saved, while 20% were only read and saved. 53% were hardly saved, read or cited. The final 6% were considered half expert picks and half popular hits.

to the origin. How the original data has come about might not be as obvious though.

Another intention behind the transparency of altmetrics is to minimise gaming or manipulation of indicators, as has been the case with e.g. the Journal Impact Factor (e.g. Opatrný, 2008; Reedijk & Moed, 2008; Schutte & Svec, 2007). While proponents of the altmetrics approach have criticised traditional measures, and especially the journal impact factor, for being easy to manipulate, the question can be raised whether the same is the case for altmetrics, and what the impact of manipulation is. While journals have been found to manipulate citation-based indicators, steps have been made to prevent this type of behavior (e.g. Moed, Van Leeuwen, & Reedijk, 1999). As an individual researcher, manipulation of citation metrics is a laborious task, as new (self-)citations require new publications. It is however possible to manipulate the citation-impact of your own work, while only some altmetric variables are sensitive to this type of manipulation. While the researcher can tweet about their new paper several times, these tweets are easily discernable from re-tweets and tweets from other sources. Readership on Mendeley and CiteULike is also difficult to manipulate, as any user can only “read” the same article once.

Parallel to discussions on the meaning of a reference (Cole & Cole, 1972; Cozzens, 1981; Leydesdorff, 1998; MacRoberts & MacRoberts, 1989; Merton, 1968; van Raan, 1998; White, 2004; Zuckerman, 1987), and the accumulated citations to articles (Moed, 2005; van Raan, 1998), one can also ask the question of what a download, tweet or facebook-like means, and whether an aggregation of these is meaningful. Concerning downloads, the above example illustrated how they might be counted differently. But the meaning of a download may also vary much; a professor might download an article and distribute it to hundreds of students, or the same article might be available for download from several different locations. The debate about the validity of using citations for research evaluation focused on whether there was a connection between the meaning of the single reference, which might be used for different reasons and the statistically aggregated citations. Proponents of citation analysis argue that different reasons for using a reference will even out, as the aggregation grows (Van Raan, 1998), but it is unclear whether the same kind of conclusion can be drawn for downloads. Also data from social

networking sites, such as tweets or facebook-likes and -shares, might be interpreted in different ways. These types of data might not be prone to the same issues as downloads, but it is rather a question of content and recipient. The former is related to the interpretation of tweets and likes - what do they mean? If an article is shared on Facebook, or talked about on Twitter, does that mean it is high quality? Or that the research is relevant for a group of people? While this is clearly a question of the content included in the sharing/discussion, it is also a question of who the sender and the recipients are. If for instance tweets about an article are used as a measure of societal impact - a very possible use - it is a poor measure, if these tweets only or mostly reach other researchers in the same field. While it is possible to identify the sender, we can only gain a glimpse of who the recipients are - while retweets and comments might give us an impression, we don't know how many people actually read these tweets. These problems aside, it should be obvious that articles which are retweeted, shared, downloaded and liked hundreds or thousands of times have some kind of impact, beyond that of articles not shared on social media, or only talked about sporadically. This is also parallel to citation analysis, where the evaluation of individual articles mostly makes sense in the case of excellent documents, e.g. among top-5% cited articles in an area. Other articles can also be included in citation analysis, but as parts of a larger aggregate of articles, as it is seen in e.g. the Leiden Ranking (<http://www.leidenranking.com>). Such evaluations of universities or perhaps research groups give us a hint of where in the world we can find the researchers with the largest impact in their respective areas. If altmetrics are applied on this scale, we might see which universities or research groups have the largest impact on mass media, or the general public. To our knowledge, this type of analysis has not yet been performed.

In conclusion, altmetrics offers an entirely new approach to research evaluation, supplementing the existing, biblio- and scientometric fields. The methodology and especially the associated data come with their own, unique problems, which remain to be solved, and also share some theoretical aspects with citation analysis. The current field is rightfully criticised for being superficial and for the implicit argument used by its advocates that faster is better (Wouters & Costas, 2012), however; studies such as the one by Priem et al. (2012) show great promise for

an aggregate-level altmetrics, which could provide viable insights into the impact types not covered by traditional methods.

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POLYMETRICS: A BRIEF REVIEW OF DIFFERENT WAYS TO MEASURE RESEARCH IMPACT

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In his 1942 study of “the Academic Man”, Logan Wilson mentioned what he called the “publish or perish” legend: the notion that “quantity rather than quality” is what matters in the academic world (Wilson, 1942, p. 63). In a later edition, he also acknowledged that “in the academic scheme of things results unpublished are little better than those never achieved”, and referred to the phrase “publish or perish” as a “credo within the ranks”. A few years later, Wayne Dennis, a professor of psychology, discussed the relationship between “productivity”, in terms of the number of published articles, and “eminence in science”. (Dennis, 1954) He concluded that “there is a definite relationship”, but also pointed to notable exceptions such as the eminent biologist Gregor Mendel, who only published seven papers, and the naturalist John Edward Gray, who had over 800 publications but was not mentioned in any of the reference works consulted by Dennis. In 1955 the documentalist Eugene Garfield argued that citation data would be a much better indicator than the mere “count of publications” of the “impact” of scientific research. (Garfield, 1955) If it was possible to generate “a complete listing, for the publications covered, of all the original articles that had referred to the article in question”, then it would seem that the total list of articles citing Mendel’s seven publications would be much longer than the corresponding list for John Edward Gray. The total count of citing articles would thus constitute a useful numerical indicator of the relative importance of a body of literature. Garfield termed that indicator the “impact factor”, and argued that it would be especially useful for determining the relative importance of scientific journals. The calculation of such “impact factors” would become possible through the construction of a new “citation index” for science, which Garfield began publishing in 1961. (Garfield, 2005)

The journal impact factor (*JIF*) is today probably the best known of all science indicators, and usually in the form originally proposed by Garfield and Irving H. Sher, where the number of references (R_i) to a journal during a time frame is divided by the total number of citeable items (I_i) in the journal during the same period. $JIF = R_i / I_i$. It is possible to calculate slightly different JIFs by using different time periods (typically two or five years) or, by including all journal items in

the denominator or excluding citations to “non-citeable” items in the numerator. There are also more complex JIFs where citations are weighted differently depending on the characteristics of the citing paper or journal and variable “citation windows” are used. On the whole, however, different formulas for the JIF tend to yield fairly similar results. (Campanario, 2011) (Glänzel and Moed, 2002)

The “author impact factor” (AIF) required slightly more elaborate calculations in order to be equally useful as the JIF. When ranking authors *within* the same discipline an AIF based on simply the total citation count was shown to correlate fairly well with other indicators of scientific quality. (Cole and Cole, 1971) At the same time such a simple AIF-rank within e.g. physics or sociology was much less adequate than the corresponding JIF-rankings based on citations/paper. And when authors published across different disciplines the difficulties became much greater. Garfield and Sher understood from the outset that the JIF was dependent on the field and type of journal. (Garfield and Sher, 1963) This would normally not be a problem, since the users of the JIFs could be expected to know the overall characteristics of each journal and thus only compare the JIFs for journals of the same type. When comparing AIFs however, each author would normally publish different types of articles and often in journals from different fields. Within broad subject areas such as physics or sociology there could also be considerable differences between different subfields. Thus it was necessary to somehow normalize the citation count according to subject area and publication type. The simplest way to do that is to divide the citation count with the average for similar publications. (There are a number of issues concerning how to classify publication types and subject areas, and how to calculate the averages that need not be discussed here.) (Moed et al., 1995)

Since the total AIF clearly depends on the amount of time the author has spent on research, the AIFs are frequently divided by total number of publications to get the average AIF per publication. This introduces certain problems, especially that low-cited papers may sometimes fulfil an important function. To avoid the problem of low-cited papers and still take account of the overall productivity, a number of different

indicators based upon author impact have been constructed. The best known such indicator is probably the h-index devised by the physicist Jorge E. Hirsch.(Hirsch, 2005)

There are also a number of other approaches where the least cited publications are excluded from the calculation. For large datasets, the “low-cites problem” tends to become irrelevant and the h-index correlates well with standard bibliometric indicators as well as with standard *peer review*. For smaller data sets with fewer citations, however, the removal of data tends to decrease the reliability.(Van Raan, 2006)

The difficulties associated with calculating author impact become even greater when the same methodology is applied to institutions. If institutions with very similar profiles are compared, an “institution impact factor” (IIF), calculated by simply dividing the total number of citations with the number of researchers (normally researcher FTEs) may be sufficient (Roche and Smith, 1978), but normally such an IIF would primarily indicate what proportion of the researchers work in fields with high JIFs. To improve the validity of the IIF it is therefore necessary to use the same methods as with author impact. Another difficulty arises when the total impact of the institution is divided by some “input indicator” such as the number of active researchers. Without such a division, the IIF would primarily reflect the size of the institution, but when the denominator is introduced, the distribution of author impact within the institution may become more significant than the total impact. This becomes important since various IIFs are frequently used in funding decisions. This problem with low cited (usually researchers with few publications altogether) is somewhat similar to the “low-cited publication problem” with regard to author impact. Despite the “publish or perish” credo, it may not always be desirable to “streamline” an institution so that no researcher has much time for anything but activities leading to publications. Also, when funding is cut because some researchers have a low citation rate, that may harm the work of well-functioning research groups at the same institution.

All the impact indicators discussed so far are based on citations in *peer reviewed* journals. An obvious weakness with that approach is that researchers in many areas publish much of their work in other forms than journal articles. In some technical fields, it may be report series, in computer science conference proceedings, and in the humanities book chapters or monographs.(Larivière et al., 2006)

At the same time, several studies have shown that even for these fields, the article-based citation data

tends to be fairly reliable. (Nederhof, 2006; Oppenheim and Summers, 2008)

Also, the recent availability of citation data for other types of literature apart from journal articles, have made this into less of a problem. *Google Scholar* includes citations to all kinds of literature, and Thomson-Reuters provides the *Conference Proceedings Citation Index* and the *Book Citation Index*. *Scopus* contains 340 book series, and work is underway to index 75000 book titles. The inclusion of these items is not likely to yield radically different results, but will increase both the validity and reliability for many areas of research.(Kousha et al., 2011; Pauly and Stergiou, 2005)

Another objection that can be made against these kinds of impact indicators is that they focus exclusively on what may be termed “peer impact” or “internal impact”. These indicators ignore the impact research may have in non-scholarly literature and the wider society. It is often argued that researchers have a responsibility to communicate their findings, not just to their peers, but to other groups who may take an interest in their work. To what extent such a dissemination of research results should be the responsibility of the researchers themselves or may be achieved by some kind of division of labour will not be discussed here, but it seems evident that the “external impact” is an important factor which also needs to be taken account of.

The question to what extent scientific research should be evaluated according to its external utility is obviously a complex question which lies outside the scope of this brief paper. In a very influential paper the physicist Alvin M. Weinberg argued that the need to evaluate research according to external criteria became a necessity with the advent of *Big Science* in the 20th century. Science on a smaller scale could easily be supported, but once scientific research required substantial chunks of the budgets, there were legitimate questions about relevance.(Weinberg, 1962)

Weinberg listed three “external” criteria for judging the value of scientific research. He called them technological, scientific and social merit. “Technological merit” was a fairly self-explanatory term. It meant the relevance of research for the the development of some desired technology. Why “scientific merit” was listed as an external criterion is probably more difficult to understand. Weinberg argued that the value of research could be judged by its relevance to neighbouring fields, and thus this merit was “external” to the core field of research. Thus, for example, some work in physics could be relevant to areas of chemistry or medicine. “Social merit” was a concept that was easy to understand at a superficial level but difficult to define clearly. Weinberg used the

phrase “relevance to human welfare and the values of man.”

Using Weinberg's distinctions as a point of reference, it is possible to speak about three areas of “external impact”. External scientific impact could still be measured with the help of citation data. Research that is relevant to other fields is likely to be more cited than research that is only relevant within the field. At the same time it could be useful to add some indicator of distance to increase the weight of “external” citations. (This could be done by some clustering algorithm e.g. based on co-citation.) Technological impact, on the other hand would generally require the inclusion of other kinds of literature. The type of literature most commonly used has been patent applications. The legal aspects of patent applications tend to make simple citation analysis quite difficult, but it is still been possible to construct useful technological indicator based on this kind of data. (Albert et al., 1991; Michel and Bettels, 2001) Yet, a correct estimate of technological impact may often require some survey based linkage between indicators of research innovation and research. (Hagedoorn and Cloodt, 2003)

The notion of “technological merit” could easily be extended to include the relevance for any kind of “problem solving”, and then the boundary to “social merit” becomes a bit blurred. Rather than a distinction between technology and society, it may therefore be better to think in terms of different target audiences. “Technological merit” would then correspond to an audience consisting of engineers, managers, physicians, and other experts or professionals. “Social merit” would correspond to an audience consisting of non-expert decision makers and the general public as a whole. There is also an important area which is not explicitly mentioned by Weinberg, but which lies somewhere between the scientific and social merit. This is the educational audience. In one sense, when researchers in a highly specialized field are able to communicate their findings to researchers from external fields (Weinberg’s “scientific merit”), that is a form of educational impact. But there may also be cases where a certain method or theory has an educational relevance for students that is greater than its immediate utility for scientific research.

When the notion of “technological impact” is extended and redefined as “professional impact”, there are other forms of literature that becomes relevant besides patent applications and the like. Especially in the medical fields, there has been much interest in trying to gauge the “translational impact” of research, i.e. its usefulness for the clinical practice. One approach is to limit the citing papers to those with clinical descriptors. Another is to search specialized literature such as e.g. clinical guidelines. (Lewison and

Sullivan, 2008) For other areas it may sometimes also be possible to similarly limit the citing works to those with a practical orientation, or publications primarily directed at professionals rather than researchers.

At the same time much of the literature relevant to professionals may be outside the core scientific literature, and it may therefore be possible to go outside the citation databases and mine references directly from the text. This is also clearly the case regarding the “societal audience”, where research findings may be disseminated through any kind of medium such as e.g. newspapers or blogs. A number of studies have shown that the relationship between scientific and societal impact can sometimes be quite complicated. Journalists or bloggers reporting on research often have quite different priorities from the researchers, and “lost in translation” effects and various forms of misunderstandings are frequently unavoidable, even if the problem is sometimes exaggerated by the researchers. (Brechman et al., 2011; Lai and Lane, 2009; McCall and Stocking, 1982)

Another aspect is that even when the research is disseminated to decision makers (including the general public), it is difficult to know to what extent the research findings have an impact on the actual beliefs and decisions. Here it is necessary to rely on surveys and qualitative methods, but the mining references in decisional documents and opinion for a may provide useful complementary data.

It is thus clear that in order to examine scientific impact in the external areas it is necessary to access non-scholarly and non-scientific publications directly. This is possible without excessive work when the relevant documents are available on the web, and especially if they are structured according to some standard such as the *Resource Description Framework* developed by the *World Wide Web Consortium*. (Tummarello et al., 2008) Even without structured documents simple hyperlinks can often provide useful data similar to citations (and sometimes of course constitute actual citations).

Bibliometrics applied to the web has often been called *webometrics* and webometrics was increasingly used beginning in the 1990s to complement the processed data in databases with raw full-text data directly from the web. (Almind and Ingwersen, 1997)

With regard to impact, access to the full text documents, not only makes it possible to include documents not included in the databases, and to trace references by means of hyperlinks, but also to trace influences by searching for characteristic terms or phrases in the text. (Cunningham, 1998) The availability of web-based statistics (the simplest being page views or downloads) was also a valuable

complement to citations.(Perneger, 2004) With the advent of social media it has also become possible to trace impact or influence by means of followers, mentions shares and the like. One advantage of retrieving data directly from the web is also that the data can be gathered at the moment of publication without having to wait for it to be indexed in a database.

The advent of the web is directly linked to the final criticism of “internal” citation-based impact indicators that will be discussed here. Once it became possible to publish research directly on the web, many researchers and documentalists felt that the traditional journal-based system had become obsolete. Because of the way journals were funded they were reluctant to make the content freely available on the web, and the ownership as well as the format itself tended to create technical barriers between content. One article could, for example, reference a second, but rather than making the content from the second article available at a click, the researcher would have to look it up in a different database and then find the relevant passage in a differently formatted document. (For many years, the referenced article would probably not even have been accessible through the web.) There were also many other perceived disadvantages relating to the scientific communication process.(Ginsparg, 2008; Harnad, 1990)

This led to the demand that more research should be published Open Access, but also frequently to the idea that a more seamless “publication archive” could, at least in part, replace the traditional journal-based system in place since the 17th century. In this perspective some believed that the use of impact factors based on citations in more “traditional” scientific journals, proceedings and books, tended to prevent the transition to a more efficient system of scientific communication. Especially the JIFs have for this reason been the target of much ire. This may be one of the reasons for the interest in the form of webometrics marketed as *altmetrics*, where “internal” citations become less important. Another is the desire to blur the distinction between “external” and “internal” merit. Thus one of the main proponents of *altmetrics*, the library scientist Jason Priem, has argued

that statistics like “YouTube download data” should be used for academic tenure proposals, and presumably for funding decisions as well.(Priem and Hemminger, 2010) Similarly Michael Jensen, a director of Web Communication has proposed that “scholarly authority” could be constructed largely automatically based on data from social media, what he called “Authority 3.0”.(Jensen, 2007) Recently another *altmetrics* evangelist, the zoologist Heather Piwowar, as argued that blog posts, including tweets, should be given more weight in research grant applications.(Piwowar, 2013)

It is of course valuable if many different forms of research impact can be accounted for, but many webometric indicators are not very robust and may easily be manipulated. They are also frequently quite difficult to interpret even if there is bound to be some correlation with “internal” citation-based impact.(Eysenbach, 2011; Li and Thelwall, 2012; Thelwall et al., 2013) The blurring of the distinctions between scientific, professional and public impact also clearly risks introducing what Aant Elzinga has termed *epistemic drift*.(Elzinga, 1997)

As Anthony van Raan observed with regard to webometrics in 2001: “Scientific communication and reputation are strongly linked via journal-status [...]. Almost nothing in the scientific enterprise can compete with the importance of a publication in top-journals.”(van Raan, 2001)

Modern science has developed by spreading research results in dedicated channels based on peer review. The system is obviously far from perfect, but there is a considerable consensus about criteria and form. A more efficient and seamless system is likely to evolve, but the notion of “internal merit” is essential to this publication system, and as van Raan pointed out, the notion of core and top journals, and the peer review process associated with them, continue to play an essential part in many research fields.(Bornmann, 2011) Impact in other areas should not be confused with peer impact, but rather used as an important complement.

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A START FOR IMPLEMENTING ORCID IN THE SWEDISH RESEARCH INFORMATION INFRASTRUCTURE

Jonas Gilbert

In 2012, the Royal Library in Sweden funded a project to investigate questions and possibilities in connection to author identifiers. The project had the title Author Identifiers and Publications Databases, the project group was led by Stockholm University Library and it also included the libraries from Chalmers, Karolinska Institutet and Malmö University.

The aim was to identify current initiatives, to initiate a discussion what development and challenges the issue of identifiers pose to universities' publication databases, and to provide recommendations for further actions. The project was to take into account both the technical, legal as well as organizational aspects.

One of the activities organized by the project group was a workshop to discuss the potentials for implementing ORCID within the Swedish infrastructure for managing research information. The workshop was held in Stockholm in October, the week before the official launch of the ORCID registry services. ORCID was represented at the workshop by Executive Director Laurel Haak. The Swedish participants were mainly from the university sector, but the Royal Library and the Swedish Research Council also attended. The discussions at the workshop provided a good overview of both the planned roadmap for the ORCID registry as well as the issues concerning the infrastructure in Sweden that would have to be taken into account.

Looking at the management of research information in Sweden today, it is primarily the university sector, the National Library and the Swedish Research Council who are the actors responsible for different parts of the infrastructure. The Royal Library has the responsibility for SwePub, an aggregation service that harvests publication metadata from the publication databases/CRIS-systems managed by the local universities. For most universities, the researchers are mandated to register and maintain their publication performance in these locally supported services. The Research Council, on its part, is developing a new joint grant management system (PRISMA) and has also been assigned the task to run a service that will make research projects financed within the public

sector findable (Sweden ScienceNet /SweCRIS). The Research Council further has the assignment to implement national guiding principles for open access in Sweden. So far, none of these services are able to link the research funding with the research output, and there is currently no ID for persons that could be exchanged between these services.

Against this background, we have in the discussions seen that the ORCID registry services will be very well suited to be adapted as the "key" regarding personal IDs. The project concluded among its recommendations that:

- ORCID should be the standard used for managing author identities in SwePub and the publication databases.
- The Royal Library monitors how ORCID relates to the libraries involvement in VIAF (Virtual International Authority File) and ISNI (International Standard Name Identifier).
- The Royal Library monitors that the implementation of ORCID not should be considered a library issue but as an inter-institutional issue. Involvement will be needed from several participants, both on national as well as on the local level.

The question concerning institutional membership in ORCID was not explicitly addressed by the project. One reason being that ORCID still was developing the membership models. Since the project report was finished, ORCID has for instance presented a consortium model for membership that could be applied at a national level.

So, as can be understood from this description there all still several questions remaining to be addressed whit regard to the responsibility for coordinating the administration and implementation of ORCID on a national level in Sweden. The most recent

development is that the local universities now are implementing support to register ORCID in their human resource management systems and in their publication databases. This will be useful for researchers that already have registered an ORCID. For universities that would want to assist the researchers in creating and maintaining IDs in ORCID, a membership will be required. At Chalmers University of Technology we are currently in the final

stage of becoming members with the aim to start assisting researchers in creating IDs in ORCID within the coming months. A broader awareness among the researchers concerning IDs can be anticipated to take place when the Research Council launches the newly developed grant management platform PRISMA, which also will include the possibility to use IDs from ORCID.

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ISNI - <http://www.isni.org/>

ORCID - <http://orcid.org/>

Sweden ScienceNet - <http://www.sciencenet.se/>

SwePub – <http://swepub.kb.se/>

VIAF - <http://viaf.org/>



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SUPPORT OPEN ACCESS PUBLISHING - A DEFF FUNDED PROJECT

Jeannette Ekstrøm

The project had kick off in January 2013, and will continue until the end of October this year. Participating libraries are Aalborg University Library, VIA University College libraries, The University of Copenhagen, Faculty of Science Library and The Technical University Library.

The idea for this project came to life because of the many and increasing demands our researchers are met with. Institutional policies aiming for Open Access publishing, national policies on Open Access Publishing as well as Funder mandates like EU (ERC, FP7, Horizon2020) and the Danish Public Research Councils demanding Open Access are just a few of the requirements a researcher has to take into consideration when deciding where and how to publish the results of their research.

The 5 major Danish Research Councils sent out a press release in June 2012 saying that “*Scientists must publish their research results so that everybody may freely read and benefit from them. That is the aim of a new Open Access policy by Danish public sector foundations and councils*”¹.

In general, this means that researchers funded by these funding organizations will have to do their best to publish open access (with respect to an embargo period), but in order to do so the researchers will need an easy overview of journals, which will give them the right choice of publishing channel, in order to fulfil these demands, since many other criteria also have an influence.

Support Open Access Publishing – in short

The aim of the DEFF funded project has two parts.

The first part is to enrich the international Sherpa/Romeo database operated by the University of Nottingham with copyright information and policies from Danish journals, serials and publishers. In

January 2013, when the project began, only a few Danish journals were visible in the Sherpa/Romeo database.

In Norway a similar project on getting Norwegian journals, serials and publishers added to Sherpa/Romeo has been on the way for a few years now². The Support Open Access Publishing project is in dialogue with Norwegian colleagues and eager to learn from their experiences with getting Norwegian publishers to add their copyright policies into Sherpa/Romeo.

The second part of the project is to clarify the possibilities for designing an integrated database of journal publishing channels. The purpose of such a database is to gather journal metadata from several sources and make them searchable in one user interface, very similar to the Swedish project *Journal-Info* which unfortunately was shut down in 2009³.

What has been done so far

So far only a couple of Danish journals are registered in the Sherpa/Romeo database and the goal for the project is to have at least 25 relevant Danish publications registered with their copyright policies in the Sherpa/Romeo database when the project ends. VIA University College conducted a survey in 2012 of how many of their Danish and Nordic publications allowed access to full text – the survey gathered journals from 2008 and onwards and showed that about 13% of the 492 articles had full text available in their repository⁴. The Support Open Access Publishing project builds on experiences from this project and uses the contacts already available, but the project also

¹ <http://fivu.dk/forskning-og-innovation/rad-og-udvalg/det-frie-forskningsrad/open-access-politik?searchterm=open%20access>

²

<http://www.sciecom.org/ojs/index.php/sciecominfo/article/view/4313/3942>

³

http://www.kb.se/dokument/Om/projekt/open_access/Journal_Info_rapport20100112.pdf

⁴

http://www.deff.dk/fileadmin/user_upload/dokumenter/DEFF/Afrapporteringer/Afrapportering_til_DeFF_paa_projekt_om_Open_Access_december_2012.pdf

uses the knowledge from another Danish research paper called “*Forskningsformidling i danske tidsskrifter – Om muligheden for fri adgang til vitenskapelige artikler*” from 2012⁵.

That project was conducted by Birger Larsen (IVA) and Gunnar Sivertsen (NIFU), and they examined the possibility for open access to scientific articles in Danish journals. They conducted a survey by sending out a questionnaire to 109 journals, of which 86 responded. Of the 86 journals 73 of these were published in print, all for a fee. It also showed that there was free access to the electronic versions of 40 of the 86 magazines. An embargo period though applied to 17 of the 40 journals.

Unfortunately the results from the Larsen/Sivertsen project are not visible in the Sherpa/Romeo database, and the idea of the Support Open Access Publishing project is to make sure that such information is visible alongside the copyright policies of other relevant international journals from the Sherpa/Romeo database, hopefully giving the Danish / Nordic researchers useful information from which to make their choice of publication channel from. When this information can be seen side by side with other journals, it is easier for researchers to choose the right journal.

As of now the project group has asked the Danish journals and publishers for copyright information (required by the Sherpa/Romeo service) by use of a questionnaire sent to them by email. Unfortunately it has not been easy to get the publishers to respond. So far 25 out of the about 142 mails sent out have responded and the project group has decided to send out reminders, and then follow up by making phone calls.

The project group has discussed using the Sherpa/Romeo form⁶ to fill out the information about the journals already available online in order to make the Danish journals visible.

In regards to the other part of the project, on investigating whether it would be possible/feasible to design an integrated database with basic and advanced journal information, a review and small empirical study has been conducted to see what kind of information is available and which could be useful in decision making.

Use cases have been collected from the participating

libraries and a few interviews with local researchers has been conducted. The project group also used the data and experience from a former DEFF project – www.startpublicering.nu - in which about 25 interviews with researchers from several Danish research institutions/universities were conducted in order to get an overview of their publication strategy and processes, at which was used when designing a basic tutorial on publishing.

The basic idea for a database like this is to locate and integrate the right information the Danish researchers need in order to make a qualified choice about where and how to publish their research. This could include basic journal information, information about the journal’s BFI level (the Danish Bibliographic Research Indicator) or Open Access options, copyright information (from Sherpa/Romeo), rankings like Journal Impact Factor, Pricing, Guide for Authors, a journal’s subject classification, as well as “suggested alternatives to journal A, which rejected my manuscript”, but also details about peer review processes and/or peer review time, editorial boards etc.

It is work in progress, but so far the project group has defined a long list of the most necessary resources that should be searchable. These resources have been studied for access, availability, technical requirements, copyright etc., and the next step is to specify requirements for a prototype, getting mock ups to illustrate the concept, and then decide whether to take the idea to the next level and apply for funds to develop such a database.

The role of the library is to try and make it easier for their researchers to locate the information they need. If the project succeeds with adding Danish journals and publishers into the Sherpa/Romeo database, as well as coming up with the right arguments for developing a database that collects and cross-searches all relevant information a researcher needs before choosing the right journal, then Danish researchers could save time. We will hopefully be wiser in October.

⁵ <http://www.nifu.no/files/2012/11/NIFUrapport2012-23.pdf>

⁶ <http://www.sherpa.ac.uk/romeoupdate.php>



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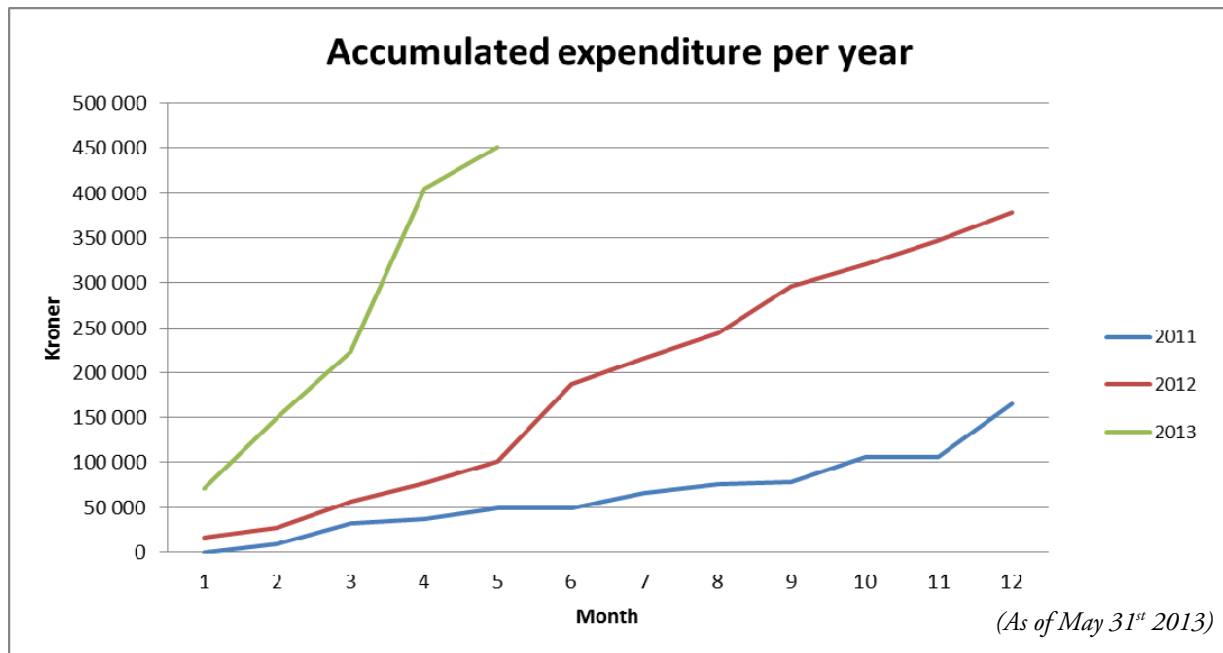
THE TROMSØ PUBLICATION FUND - EXTREME GROWTH!

Jan Erik Frantsvåg

In 2011 we informed the world about the establishing of our publication fund at the University of Tromsø (Frantsvåg 2011). We started out with some hazy ideas about how much money we needed and how this would develop. Very little of what we foresaw, became as we thought it would be.

We started operations early in 2011, with a budget of NOK 300 000, but ended up having used only NOK 165 000 on 24 articles.

But the fund really took off early in 2013. At the end of April we had already spent NOK 405 000 of the available NOK 500 000 on 39 articles, and were looking at the bleak prospect of having to suspend the fund until the next budget year. The university rectorate came to our rescue, and on May 30th we were given another NOK 500 000 to tide us over and let us operate the fund uninterrupted. By the end of May the fund has spent 451 000 on 43 articles.



We understood that there was much to do in the way of marketing the fund, and assumed that we would increase the use of the fund in 2012, but were satisfied with a budget of NOK 309 000 for 2012 – we couldn't possibly be more than doubling our expenses! And when we, in the spring of 2012 were asked for a number for the 2013 budget we were expecting continuing growth and also possibilities for financing OA monographs, so we boldly asked for the huge amount of NOK 500 000.

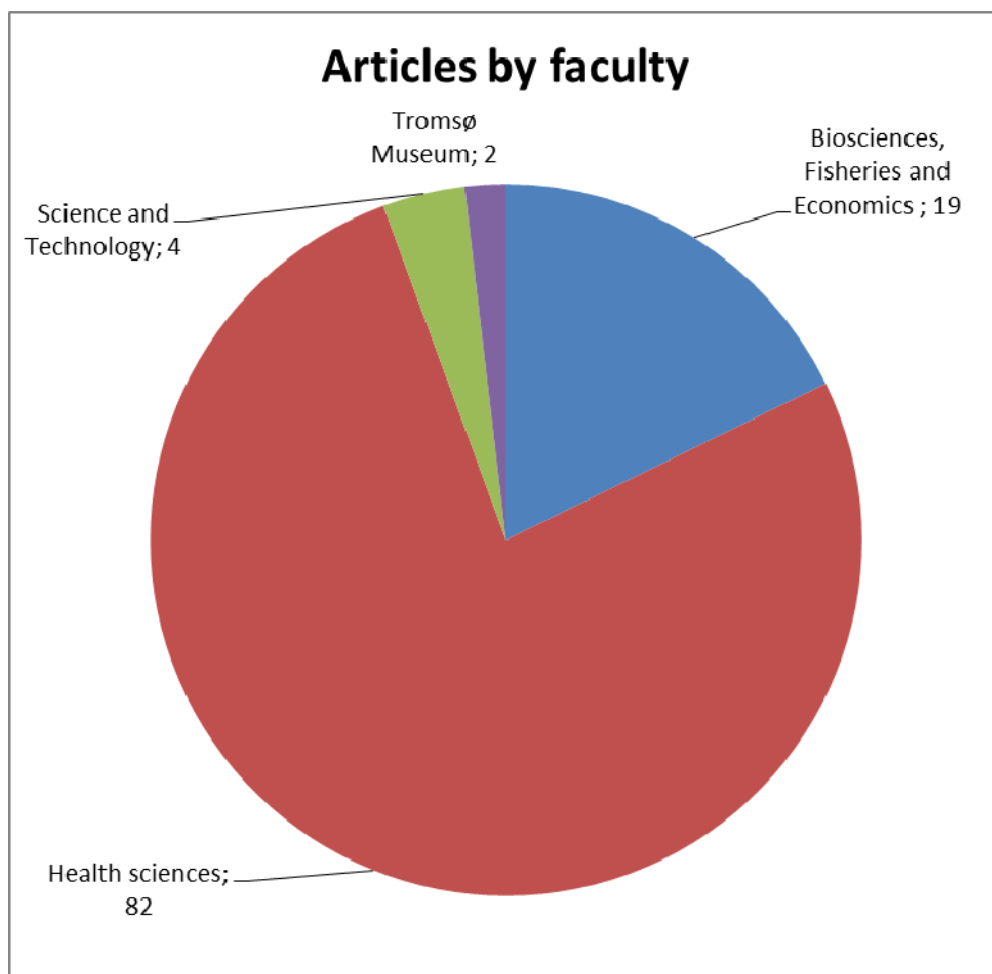
At the end of 2012 we had spent 378 000 on 42 articles, and were saved by the unspent money from 2011.

After having experienced that our optimism in assessing future need of funding wasn't optimistic enough, we asked for NOK 2 000 000 when given a chance to give input to the 2014 budget.

Why this strong growth? There are some reasons that are of a technical nature, e.g. we had some 50 per cent rebates at BMC for much of 2011. We also see that we now get the applications at an earlier stage of the process than before; this will have an effect that looks like growth but really is a displacement in time. Increased awareness of the fund is a strong factor, we see every time we inform about OA and the fund we

immediately after receive applications from people in the audience.

But the major reason for this growth must be the strong underlying growth in the use of Open Access at the university. OA has increased its share of articles from 11 per cent to 16.8 per cent, an increase of more than 50 per cent. (For more on the growth of OA in Tromsø see another article in this issue of ScieCom Info.) The increase in OA from 2011 to 2012 is much larger than the number of articles financed by the fund.



Another symptom of this underlying growth of OA is the use of hybrid OA, with an uptake of 9 per cent in 2012. The fund doesn't fund hybrid OA, we discovered recently that this has induced at least one institute at the Faculty of Health Sciences to create a fund, specifically to cover hybrid option costs! This means OA is important to the researchers, even if they have to pay for it. With about 60 articles in 2012, given at standard APC of USD 3000, authors have used more than double the sums they received from the OA fund, to pay for hybrid articles.

Who uses the fund?

If we look at faculties, we see that the Faculty of Health Sciences is the major receiver of funds, with 77 per cent so far. The Faculty of Biosciences, Fisheries and Economics is number 2 with 18 per cent.

This structure is partly due to the relative size of the volume of articles, but it also has other structural explanations. One is that the humanities and social sciences have an OA share near that of the health faculty, but they publish only in free-to-publish OA journals while the health disciplines mainly publish in APC-funded journals. The Faculty of Law in reality

has no relevant OA journal to publish in, APC-funded or not, while the health sciences has a wide selection of general and specialist journals with good standing. So we should not see the overwhelming share that goes to the health sciences as greed, but as a sign of a more developed market for OA publishing in these fields.

The hierarchy

In what type of positions do we find the authors? – are they the young, born digital generation, or do

the mighty professors take more than their share? The numbers so far seem egalitarian, while we haven't compared them to the number of people in various position types they seem fairly consistent with how the campus is populated.

Where is the money spent?

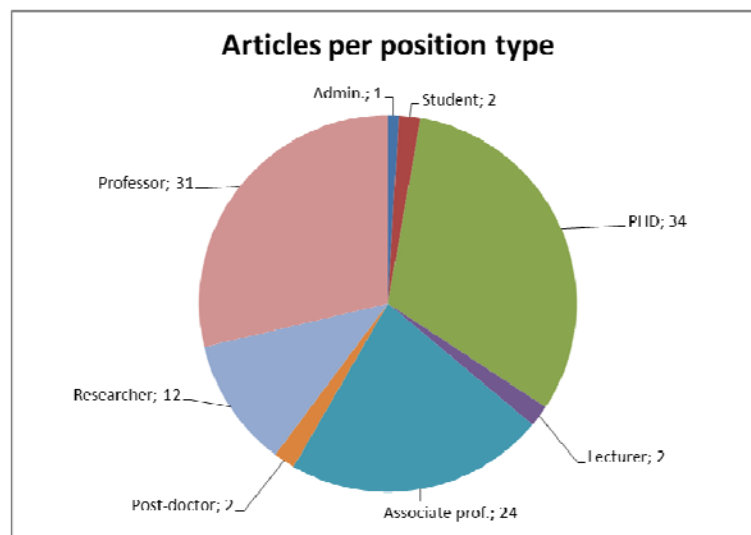
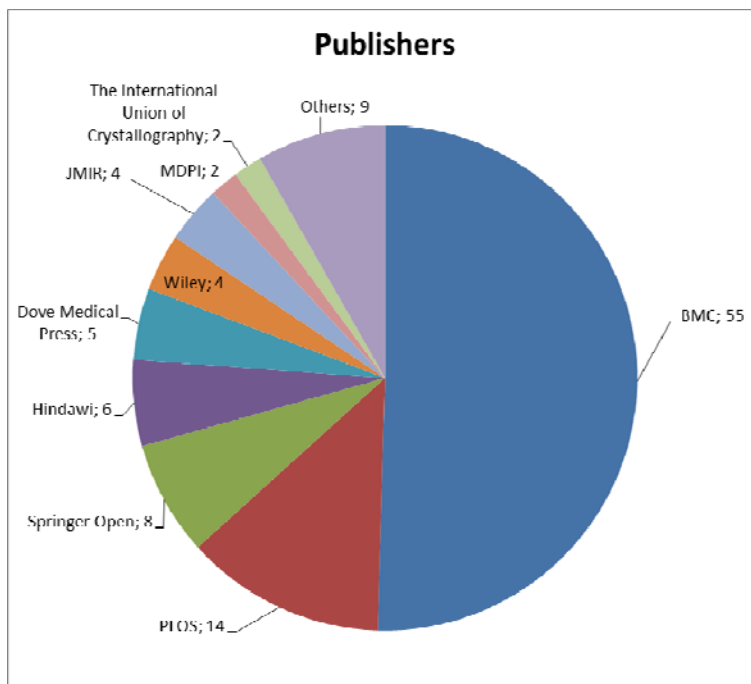
We also keep track of with which publishers the money is spent. An obvious finding is that BMC holds a market share of about 50 per cent; Springer Open represents an additional 7 per cent. Number two is PLoS with 13 per cent, then comes Hindawi, Dove, Wiley and JMIR (Journal of Medical Internet

Research). The dominance of BMC/Springer Open is even more marked so far in 2013, with a total of 75 per cent. We fear that this unexpected dominance of BMC may be due to the fact that we have a pre-pay membership with BMC. This functions so, that any time a UiT researcher submits an article, he/she is asked whether they have the code to draw on the publication fund's account with BMC.

In other words, they are made aware of the fund to a much higher degree than authors that publish with other publishers. We haven't yet investigated if BMC has had a corresponding increase in the total volume we publish with them, or if this means that BMC authors are funded by the OA fund to a higher degree than other authors. If the fund's membership influences the choice of journal, this is not necessarily

a good influence. If the membership makes the fund finance more of BMC articles than other publisher's articles, we must see if the advantage of the discount we receive is offset by an increased tendency to use OA fund money instead of money from other sources. It is also clear that with the current strong growth in OA we must prepare to disband the fund in some years' time. An application process takes time and resources,

and when OA has become mainstream there is no reason to use resources to stimulate it further. A fund also isolates the author from the cost, in the longer run this cannot be continued if we want to create a more competitive market for OA publishing. An OA article component in the annual internal distribution of funding must take its place. But not yet!



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GOOD GROWTH IN OA IN TROMSØ

Jan Erik Frantsvåg

After having analysed some preliminary data about the publishing activities of researchers from the University of Tromsø in 2012 (and compared them to earlier years) we see a clear trend towards OA publishing. We have no information as to whether this is part of a national or global trend, but we would like to share our numbers with others.

Year	Total no of articles	Gold OA	Gold OA share	Hybrid articles	Total OA	Total OA share	TA articles
2004	572	31	5,4 %	0	31	5,4 %	541
2005	652	49	7,5 %	0	49	7,5 %	603
2006	665	47	7,1 %	0	47	7,1 %	618
2007	743	59	7,9 %	0	59	7,9 %	684
2008	874	71	8,1 %	3	74	8,5 %	800
2009	992	79	8,0 %	5	84	8,5 %	908
2010	1059	84	7,9 %	13	97	9,2 %	962
2011	1194	131	11,0 %	58	181	15,8 %	1013
2012	1285	216	16,8 %	62	278	21,6 %	1007

The data we have analysed are raw data from Cristin, the national CRIS where all researchers have to report all their publishing activities in order to secure funding for their institution's (and their faculty/institute/research group) budgets. This means reporting can be assumed to be nearly 100 per cent complete. Our data was accessed some weeks before the final reporting, so some details may not be exact, but the overall picture cannot be much wrong.

All numbers here are about articles that our researchers have been involved in as authors, an article where one of our researchers is one out of five hundred authors count as 1 article, not as 1/500th of an article.

A major finding is that the gold OA publishing rate has had a very strong increase. The gold OA rate went from 5.4 per cent in 2004 to 7.5 in 2005 and stayed at 7.1–7.9 2006–2010. Then in 2011 the rate grew to 11.0, which we saw as a strong growth – until this year's numbers showed a gold OA rate of 16.8 per cent.

Parallel to this, there has been growth in the use of hybrid OA. For a year (July 2010–June 2011) we had a deal with Springer that meant our authors met a price of EUR 0 when going for the hybrid option, this naturally meant a strong increase in the use of hybrid. Hybrid numbers are difficult to come by, for earlier years we have used a Springer tool, for 2012 we

actually employed a student to go through all our articles in journals that had a hybrid option, to find all OA articles in these journals. Some readers may remember my lamenting this lack of tools to find hybrid OA articles in ScieCom info no. 1 2012. (Frantsvåg 2012)

We had expected a dramatic fall in the use of the hybrid option in 2012, but it stayed on the new, high level – giving a hybrid OA share of 4.8 per cent. This adds up to a total OA share of 21.6 per cent.

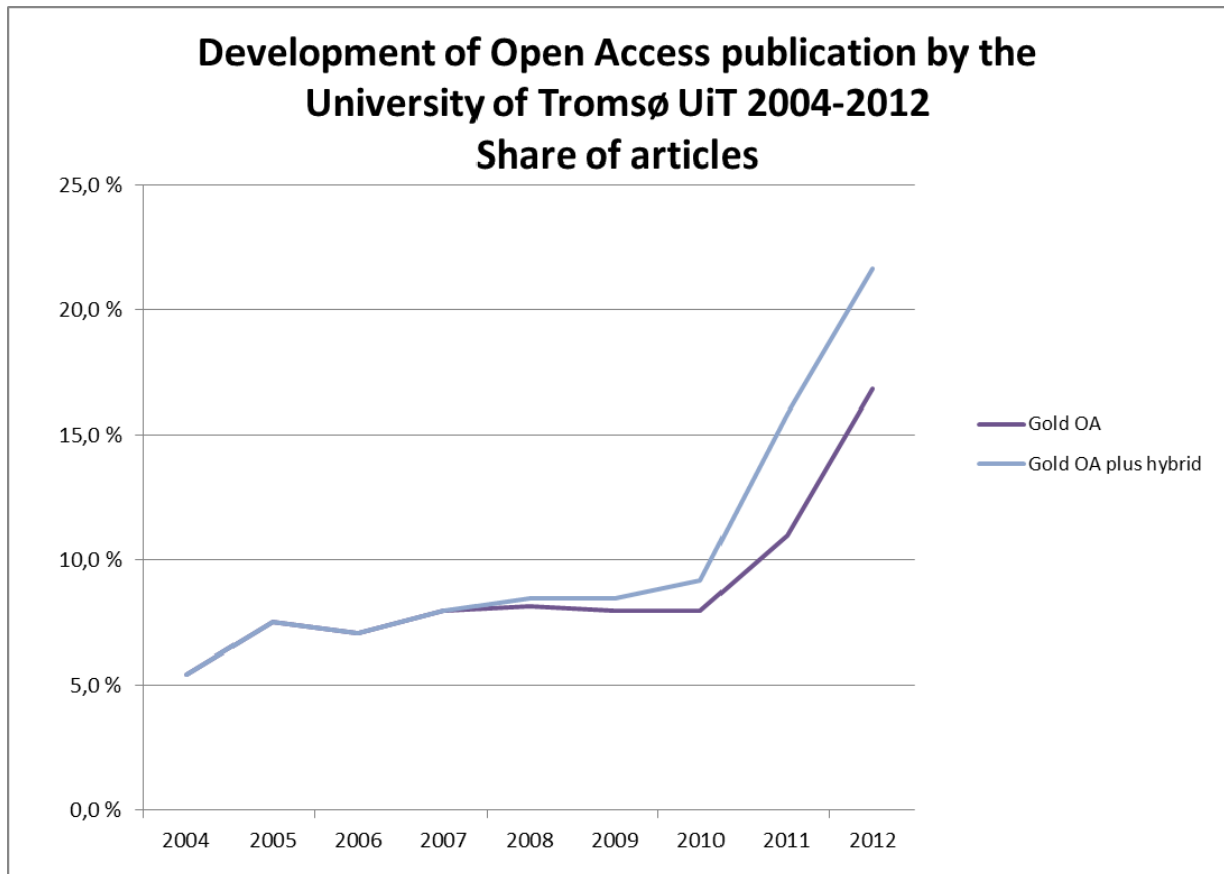
The hybrid OA numbers show an uptake of the hybrid option of about 9 per cent – 62 articles out of 691 published in journals offering an OA option, were using that OA option. Compared to Bo-Christer Björks estimates of uptake on a global basis of 1–2 per cent (Björk 2012), this is about 5 times above the norm.

While the total number of articles has increased, we see a decrease in the number of TA articles from 2011 to 2012. The decrease is not large, but it could be a first sign that TA publishing is on the decline.

We believe our numbers to be relatively high, but not unique, and part of a trend that shows OA publishing to enter a stage of rapid growth that in a few years'

time will make OA the dominant publishing strategy. Our publishing fund may be part of the explanation of the rapid growth here in Tromsø, but there is no way the fund can be the major explanation. The growth in

the number of Gold OA articles from 2011 to 2012 was 85, while the fund funded 27 articles in the same period, out of a Gold OA total of 216. The numbers we see, must reflect a need and a willingness on the part of scientists, to make their works available OA.



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<http://www.sciecom.org/ojs/index.php/sciecominfo/article/view/5422>



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OPEN ACCESS POLICIES AND THE SUPPORTING INFRASTRUCTURE: STATUS IN DENMARK

Mikael K. Elbæk

June 2012 was an important year for Open Access in Denmark. In June the five major public research funders released their Open Access policies covering all their future grants. [<http://fivu.dk/forskning-og-innovation/rad-og-udvalg/det-frie-forskningsrad/open-access-politik>]. From 2013 the first grants with the Open Access policy are coming in effect. Are universities and their libraries ready take this opportunity and support their researchers?

If 2012 was important in the sense that the public research funders finally released their Open Access policy - after a yearlong prelude that started with the release of the "Recommendations for implementation of Open Access in Denmark" March 2011

[<http://fivu.dk/en/publications/2011/recommendation-s-for-implementation-of-open-access-in-denmark/>].

While the committee behind the report recommended that the Ministry, the research councils and funders, universities and other research institutions all implemented Open Access policies it was only the research councils and funders that acted and established policies as a result of the recommendations.

2013 might prove to be the real test for all supporters of Open Access. It's from the current year that the first grants from the Danish research councils will be signed and the policy will come into effect.

Now principal investigators (PIs) and Coordinators of grants around Danish research institutions are asking themselves: what implications does this policy have for them, what are the obligations for consortia members to comply with the policy.

A question that needs to be asked is, are the employers of PIs ready to support researchers who have been so competent and fortunate that they've been granted a large sum of money to do what they do best, which is research?

To support the PIs Open Access obligation infrastructures and services need to be in place. Years of focus on research assessment at Danish universities, in which the repository or CRIS system Pure has

played an pivotal role, has taken away the focus from Open Access and that repositories and libraries play an important role in the global Open Access infrastructure.

Lessons learnt from the big Open Access pilot in FP7 (special clause 39) showed that if researchers are left alone to comply with an OA-policy then it is likely to fail. First of all, policies from research councils must be aligned with the requirements for publishing that researchers meet at their own institutions. Secondly, the research institutions must support their faculty to ensure compliance in every way, so that compliance does not interfere or take away time from what researchers do best, namely conduct research. Or thirdly, the policy must be so strict and have financial sanctions or other strong incentives (sticks). However the latter is probably neither politically possible nor desirable.

Taking Denmark as a case study, the OA-pilot has proved that getting the support of individual research institutions can be difficult - not because the research administrative staff, namely librarians, lack positive attitudes: no, it is because of other more important agendas - such as money driven performance goals like the National Bibliometric Research Indicator (BFI). Since 2008 BFI has in many ways formed the development of the CRIS infrastructure in Denmark and the processes around it and left the development of infrastructures for Open Access to the few actors in this field. And the willingness to support the implementation of the European OA policy at a minimum level has been very low. Denmark has the infrastructure: it has CRIS's with a high coverage and high quality metadata, but however there is no focus on using this advantage to leapfrog Denmark's position globally when it comes to Open Access.

To be fair, some universities and research institutions in Denmark have made a great effort to establish smart procedures, effective policies and worked hard to make

their institutions' research as Open Access as possible. But they are the minority. Also, there are pertinent people at almost all the universities that work hard everyday to advocate for Open Access and help their faculty to make their research Open Access, but they all miss support from the top level.

A lesson to be taken from the implementation of BFI, is that publicity and visibility of performance changes behaviour and priorities. So this author's solution to the uneven support for Open Access at the Danish universities and research institutions, is to make a national score board for Open Access. If a fair measurement of the universities' and research institutions' Open Access performance is publicised and given media attention, policy attention will be established and a prioritization of services and the further development of infrastructures for Open Access will follow.

The first thing that must be done and can drive this development is the creation of digital, online reporting of the grants to the Danish research councils and funders. This includes uniquely and globally identifying the funders and embracing international initiatives like FundRef, making requirements for beneficiaries of the funds to include the funding information in their publications when submitting to journals - i.e. FundRef information plus a unique number, and that funders require and supports the delivery of project reporting in an international standard format such as CERIF-XML.

Secondly, the national research councils and funders must request that all grantees are provide their global researchers ID's - like ORCID - in their grant proposals and that they will use these ORCID's to identify themselves within all outputs of their grant, including publications and datasets.

Thirdly, that all public outcomes of the grant are uniquely identifiable with a digital identifier such as a DOI or similar.

Fourthly, that all outcomes of the project that should be taken into account in an evaluation, must be accessible through single access point such as a CRIS based on Pure - not necessarily with full texts within

the CRIS but with metadata that describes the accessibility and provides a link directly to the sources.

Finally, a national research portal, such as the Danish National Research Database, must provide an overview of not only the published output of universities and research institutions in Denmark. It must also provide a more detailed overview of the Danish research output that includes an overview of all grants given to public research institutions and not only universities. From the grants it should be possible to see who was been funded (institutions, and people), the related outcomes of the grant including publications and their full text either in a repository (like Pure) or through a link to an Open Access version at a publisher. Statistics should then be provided that would show, amongst many other interesting statistics, how much is Open Access nationally and from different institutions and how much of the output of different grants is Open Access.

The potential benefits of all this are many, and include more transparency, more public access to the outcomes of the publically funded research and possible benchmarking options that would drive research institutions and universities to improve their local support and infrastructures for Open Access. This might sound like a far away and an almost non-reachable utopia. But the reality is that the tools are right here within our reach to grab and utilize. Pure needs to be enhanced, the Danish National Research Database needs a reconstruction and relaunch, funders need to open up their systems and make their data accessible and interoperable. Best practices and regulations to grantees must be established - there might be some objections and resistance in the short run - but in the long run all these actions will make life easier for everyone.

The problem is that even if it is relatively easy to realize, it will never happen in an orchestrated fashion, as long as it is not on the political agenda and attention of the Minister of Science, Innovation and Higher Education. We are missing a chance that could leapfrog Denmark's position as a leading knowledge economy.



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Disclosure: The author is member of the OpenAIRE consortium, coordinator of the Danish National Research Database and project coordinator of the DEFF funded projects Open Access Barometer and ORCID/DK.

FINNOA 10 YEARS OF OPEN ACCESS WORK AND A ROAD MAP FOR THE FUTURE

Turid Hedlund, Annikki Roos

Introduction

The Finnish Open Access working group (FinnOA), founded in April 2003 is celebrating ten years of active work promoting open access to scientific research in Finland. The working principles of the group have from its start been inclusive and open to new ideas and new members. Through the years many persons have contributed to the activities and initiatives taken by FinnOA. In most cases important activities have been reported in articles in ScieCom Info (Hedlund & Montonen 2008; Hedlund 2011; Salokannel 2012;). The role of the two persons that have been chairing the working group during the years, first Bo-Christer Björk and later Marjut Salokannel has been central in developing strategies for the work and in coordinating the activities. In 2013, Annikki Roos was elected as new chair of FinnOA.

From the start FinnOA has had three focus areas regarding open access, open access journals, publication archives and policy issues. In the following section of this article we will analyze the progress in Finland in each of these areas thus taking a national perspective on OA. However, Finland is a part of Europe and thus reacting to trends and initiatives in the Nordic countries as well as European Union initiatives. Due to this, influences to the activities and progress made in Finland is due to national stakeholders as well as Nordic and international developments. The role of FinnOA in the development process has mainly been in advocating for open access solutions. This has been done by arranging seminars and by participating in projects that inform about open access to relevant stakeholders.

In the third section of this article we will focus on the future and what kind of road map would be suitable for the next five years for FinnOA.

Open access progress in Finland 2003 – 2013

Generally article publishing in Finland is done in international journals. This trend has been continuing according to statistics from the Ministry of Education and Culture (<http://vipunen.csc.fi/>) on scientific

publications from universities (Table 1). There were a total of 14373 scientific referee articles published in 2011. Of these about 8% were published in domestic journals and 92% in foreign journals. Compared to statistics from 2003 there is an increase in total number of articles from 11754 to 14373 (22%). In 2005 about 17% of the articles were in domestic journals and 83% in foreign journals.

Year	Number of domestic referee articles	Number of foreign referee articles	Total of scientific articles
2003	1965	9789	11754
2011	1184	13189	14373

Table 1. Statistics on published articles in Universities in Finland (source: Ministry of Education and Culture <http://vipunen.csc.fi/>)

The open access share of published articles in the year 2008 by Finnish authors was approximately 21%. Of the open access articles half was gold open access and half green (Hedlund 2010).

In the following we will analyse the situation in particular regarding open access publishing in domestic journals.

As can be seen from Table 1, a majority of articles by Finnish researchers are published in international journals. However, the number of peer reviewed journals published in Finland is also rising. The journal publishing is gradually turning to online publishing and also to open access availability. In Table 2 containing data from two sources on journal publishing in Finland we can see that the number of journals is rising and also the number of those publishing open access. As a note to Table 2 the number of OA journals in Finland registered in DOAJ is considerably higher than in Ulrich's Periodicals Directory. This is an indication of the fact that small

journals not always seem to report changing publishing policies to the directory publishers.

<i>Source: Ulrich's</i>				
Year	Total number	online	online OA	JCR
2007	98	39	6	12
2013	154	71	24	11
<i>Source: DOAJ</i>				
2007			20	
2013			39	

Table 2. Number of scientific peer reviewed journals published in Finland, classified according to type (Source: Ulrich's Periodicals Directory and DOAJ)

Many publishers are learned societies publishing mainly one journal. The subscription base is mainly formed of members, who get the subscription as part of the membership fee. The transformation to online publishing is developing and also open access versions of the articles are offered. One important support in the transition process is the publishing platform offered by the Federation of Finnish Learned Societies. The Federation also coordinates the financial support to the individual learned societies for their journal publishing (see also the report by Hedlund and Rabow from 2007).

The DOAR register on open repositories lists 12 repositories in Finland. However, the numbers of institutions involved is higher since for example the repository of the University of Helsinki contains sub-repositories from 7 partners (see also the report by Rabow from 2009). The repositories contain many types of material, such as articles, thesis, research reports etc. In 2013 about 140 000 records are stored in open repositories and according to the National Library of Finland $\frac{2}{3}$ of these are thesis (Ilva 2013).

Policy issues on open access

As early as in 2005 the Ministry of Education appointed a committee to put forward recommendations for the promotion of open access to scientific and scholarly publications in Finland.

Rectors of the Finnish Universities (UNIFI) signed Berlin declaration in 2006. However, in 2013 only three of the universities have an established policy concerning the OA. The University of Helsinki mandates, The University of Tampere urges and encourages, and the University of Jyväskylä urges researchers either to archive duplicates or final drafts of their research articles to repositories, or to publish in an OA forum. Finnish Universities of Applied Sciences have made a statement in 2009, which requires all teachers and researchers to save a copy of their published scientific articles in a common electronic library.

It seems quite evident that pure mandates or requirements of the research organizations have not resulted in extensive open access in Finland. The policy of the research financing bodies might turn out to be more effective.

The Academy of Finland (AF) is one of the main financing bodies of research in Finland. It is obvious, that the AF has chosen a rather cautious course of action in mandating OA. However, just recently the board of AF has changed the OA policy of the institution to a more OA demanding direction. Previously the Academy of Finland *recommended*, now it *urges* that results of the studies, which receive funding from the AF, should be published on OA forums or archived in OA repositories.

The road map for FinnOA - focusing on open data and open science

The debate around openness of research data has been quite lively during the last years also in Finland. There have been several development programs in the governmental and public sector, which have been emphasizing the importance of open data. The Finnish Government made in 2011 a principal decision that public, governmental information and data should be open to use. While the public data as for example maps can be utilised for business, the Ministry of Education and Culture has focused on e-science with open data and publications. The ministry started a project called TTA - National Research Data -project in 2011. The TTA project has quite a broad agenda including the construction of the technical infrastructure, long term preservation and for example establishing a national data catalog. The policy issues, including access to research data and publications are also included. FinnOA as well as the Finnish university libraries are included in this work, university

libraries by requiring a national OA policy for research publications.

Finnish universities have not been very actively involved in discussions about open research data, whereas some research institutes have clearly declared their policy. One significant pioneer has been the consortium for natural resources and environmental research, Lynet (<http://www.lynet.fi>), which has announced an open data policy to certain parts of the research data. Recently the Open Knowledge Foundation (OKF) in Finland has formed an Open Science section also in Finland. This section involves very active and enthusiastic scientists. FinnOA has started to collaborate with the OKF Open Science section in 2013 and it is evident that the cooperation will be a new opening for the OA movement in Finland.

The importance of open information environment to scientific work and the research community cannot be overestimated. Publications are one, but not the only important part of this environment and the nature of publications is also changing. Publications and data are increasingly integrated, and if not integrated, at least linked together. The importance of data is increasing.

The most important question now and in the near future is how to promote the reuse of openly available scientific material. The barriers to text and data mining of publications should be removed. This is not an easy task nationally or on an international level but there is a clear strive to make it possible.

Conclusions

In this article our aim has been to provide a picture of the development of open access in Finland regarding mostly journal articles. We have discussed the growth of journal articles and the relatively slow development of OA journals and repositories. During the ten years the concept open access has become rather well known to researchers and librarians and funding bodies even though there still appears to remain much to be done. The infrastructure for developing OA is in place. Now the next challenge is to proceed with access to research data and the linking between the data and the research articles. FinnOA will continue its work promoting the growth and sustainability of open access in Finland.

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THE IMPORTANT DEVELOPMENTS WITHIN ACADEMIC PUBLISHING AND OA IN ICELAND: A SHORT OVERVIEW

Solveig Thorsteinsdottir

In this short overview I will look at the development of academic publishing of Iceland in the last ten years, from the start of the open access movement and to date. The trends that are identified are the number of articles published in open access and the coverage of Icelandic scholarly publications in international databases. The focus is on the period 2003 - 2013. The searches are done in Web of Science, PubMed and Scopus. I will also look at the Big deals in Iceland which are the National access deals, and how they might have affected the interest in open access in Iceland. I will also give an overview of the changes that have taken place such as the law about open access, mandates, repositories and cooperation with other European countries regarding open access.

Research and development in Iceland

Two reports, one from Rannis, The Icelandic Center for Research, on "Research and development in Iceland 2009"¹ and the other one from Norden, NordForsk "International Research Cooperation in the Nordic Countries"² cover the research trends in Iceland as well as the other Nordic countries. According to these reports the number of published research articles in Iceland has grown 900% over fourteen year period from 1994 to 2008. The growth in research publications in the other Nordic countries over the same period is lower or from 110% to 200%. The growth of publications from Iceland is both in national publication and international publications. The growth in the other Nordic countries is greater in international publications than in national publications. Icelandic international cooperation is 75% of the country's publications which is about 25%

higher than international cooperation in the other Nordic nations.³

Articles published from Iceland in foreign journals have increased each year last ten years. The result from a search done in Web of Science revealed 8,127 articles and the same search done in Scopus revealed 8,356 articles. The search in Scopus showed more than two fold increase over the ten years period. In the year 2003 the articles published were 475 and in the year 2012 the articles were 1.235.

Open access to full text articles is still a very small percentage of articles published from Iceland in foreign journals. A search done in PubMed covering ten years period 2002 – 2012 for Iceland revealed that of the 2.165 items indexed only 442 or about 20.4% were in open access. At least open access is slowly growing as shown from the same search in PubMed in table 1.

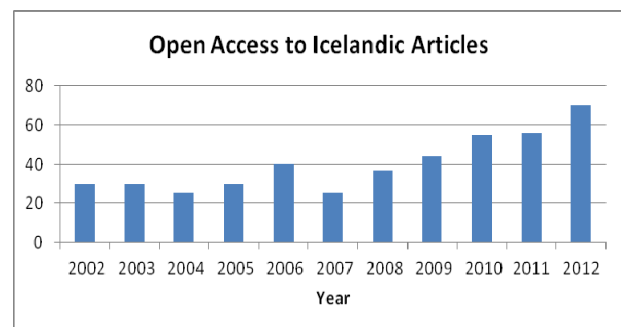


Table 1

This is different regarding articles published in Icelandic health science journals in Icelandic which are all open access. These Icelandic articles are stored in

1. Research and development in Iceland 2009. (2009) Rannis the Icelandic Center for Research, Available at: http://www.rannis.is/files/Vasabók%202009%20ensk_1386807549.pdf
2. International Research Cooperation in the Nordic Countries. (2010) Norden, NordForsk [2]. Available at: http://www.nordforsk.org/_img/bibliometri_1.pdf

3. Research and development in Iceland 2009. (2009) Rannis the Icelandic Center for Research, Available at: http://www.rannis.is/files/Vasabók%202009%20ensk_1386807549.pdf
International Research Cooperation in the Nordic Countries. (2010) Norden, NordForsk [2]. Available at: http://www.nordforsk.org/_img/bibliometri_1.pdf

Hirslan, the subject repository for Landspítalinn. Icelandic publishers made an agreement with the Landspítali Health Science Library to allow all published articles to be hosted and stored in Hirslan and made accessible in open access.

Open Access Repositories

The first repository in Iceland, Hirslan, the Landspítali University Hospital repository, was launched in 2006. The second one, Skemman, the joint repository of the University of Iceland, University of Akureyri, University of Bifröst and the Iceland Academy of the Arts, was started in 2008. The two open-access repositories, Hirslan.is and Skemman.is were established and are maintained by the Landspítali Health Sciences Library and the National and University Library respectively. Skemman.is houses theses and other works for five of Iceland's seven university-level institutions. Iceland needs one repository for all of Iceland. Skemman is not compliant to the standards set by OpenAIRE. All researchers who have received funds from FP7 and do not belong to the health sciences can deposit the article in the OpenAIRE Zenodo Repository hosted by OpenAIRE+. Researchers within the health sciences can deposit their articles in to Hirslan. The Icelandic Center for Research, Rannís, and The National and University Library of Iceland are jointly selecting a system that can be used in Iceland for measuring research output and open access.

An Open Access mandate in Iceland

Open access is acknowledged and endorsed by government statements. There are two OA mandates in Iceland: the funder mandate from the Icelandic Center for Research, Rannís and the mandate from Bifröst University.

In line with the Icelandic government's Policy on the Information Society 2004-7, the Ministry of Education, Science and Culture and The Science and Technology Policy Council have issued statements that include support of Open Access.

The Science and Technology Council of Iceland signed the Berlin Declaration on the 27th of May 2010.

In March 2012 Bifröst University became the first higher education institution in Iceland to adopt an Open Access mandate. The mandate, or policy depending on definitional preferences, was initiated by the faculty and is a declaration of the faculty member's

preference to publish in Open Access journals and their obligation to store research articles in the university's open repository. The mandate is closely modelled on similar ones passed by for instance Harvard's Faculty of Arts and Sciences and by the Harvard Law School.

As of 2013 scientific publications based on projects, funded entirely or partially by the Icelandic Center for Research, Rannís, must be published in open access. This is to ensure that the public has access to results of publicly funded scientific projects in Iceland. This mandate extends to all peer-reviewed articles. Projects that have received grants from Rannís prior to January 2013 are not subject to the requirement of open access publishing, even though Rannís encourages all researchers to publish in open access. Rannís rules for OA are as follows: Rannís encourages scientists to publish their works in journals that are fully released for public access, that is provides immediate OA to all their articles. If a decision is made to publish research findings in journals that are not open access, the Rannís OA mandate may be met by publishing in open searchable, digital repositories along with the publication in a traditional subscription journal. The final manuscript after peer review shall be returned to the repository immediately after the article has been accepted for publication. This applies even if the journal demands a waiting period prior to OA, then the article will be opened automatically when the waiting period expires. Rannís allows an embargo period for up to 12 months after publishing in the journal. Grantees can apply for the funding from Rannís publishing fund, to cover a part of the publication cost.

Open Access projects and initiatives

The Landspítali Health Science Library and the university libraries in Iceland have supported the development of repositories and promoted Open Access for a number of years. There is an informal group from these libraries and universities that has worked on OA for few years on issues such as addressing OA policy issues, development of infrastructure/user services and information to researchers. This group has published articles about OA both in Icelandic journals and SciCom info. It has organized and hosted a number of conferences. This group has maintained the web www.opinnadgangur.is.

Iceland became a member of OPENAire+ EU project in 2011.

The Iceland Consortium and the big deals

In Iceland there is a National consortia for joint subscriptions of libraries in Iceland which is also funded by the Icelandic government.

The Iceland Consortium (IC) was started in 1999 when a license agreement was signed with Encyclopedia Britannica for a nation-wide access in Iceland. Subsequently in 2002 a service agreement between the National and University Library of Iceland and the Ministry of Education, Science and Culture was signed listing mutual responsibilities.

The aim of the IC is to secure access to academic and scholarly content for students and staff of academic and research institutions as well as the general public in Iceland.

Participating institutions in the consortium are around 200. Access is truly national as content is available to everyone in Iceland.

The National access has produced a great increase in access to serials but with steady price increase and little flexibility in selecting which journals the National access gets it is not sufficient service to the research community. With all the benefits of the National access it still does not serve all the needs of the research community in Iceland and there is a lack of access to some very important but very expensive journals. The University of Iceland has not agreed on an open access mandate yet.

The lack of interest within the academic community might be that the National access does serve many well and therefore they do not find the need nor interest to support OA. The researchers do not worry about the cost of the National access, it comes mainly from the libraries budgets.

How can libraries make open access work? Can libraries/universities reallocate funds from the big deals to the support of open access publishing?

Conclusion

The publishing pattern of Iceland is similar to other Nordic countries except the growth in local publications has been higher. The publication language is English in international publications and Icelandic in local publications. The coverage of Icelandic scholarly publications in international databases is high. Research in Iceland has increased a great deal in the last ten years. At the same time the cuts in library budgets has been severe in Iceland. From a limited budget the libraries have to fund more/greater access to journals since research output has increased and at the same time the publication of research articles. This situation pushed the libraries to be more efficient by cutting down other services and library staff. Open access is part of modern technology and it will serve the community better with lower publishing cost. In the future it will hopefully replace high cost subscription publishing and provide access to all research articles needed. Libraries can make open access work by reallocating funds from the big deals to the support of open access publishing.



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FROM BIBLIOGRAPHIC TO FULL TEXT OPEN ACCESS DATABASE ON LITHUANIAN STUDIES

Lina Bloveščiuilienė, Rūta Petrauskaitė

Lithuania has a sufficient legal basis supporting Open Access (OA). The law on Science and Studies of the Republic of Lithuania (2009) voices a demand for the results of research activity to be made publicly available¹. Contract agreements between principal investigators of research projects and the Research Council of Lithuania echo the demand and register the requirement to make research data accessible after the embargo period. Academic and governmental institutions participate in EU and global OA initiatives, projects and events, such as the FP7 project PASTEUR4OA, (Open Access Policy Alignment STRategies for European Union Research), Open AIRE plus (Open Access Infrastructure for Research in Europe), EIFL-OA open access advocacy campaigns, SPARC (The Scholarly Publishing & Academic Resources Coalition), Open Access Forum, Science Europe Working Groups on Open Access to Publications and Data to mention a few. They also open their institutional repositories and publish journals that have adopted the Open Journal System and are registered in the Directory of Open Access Journals (DOAJ). Replying to the Minsk Recommendation for Open Access to Scientific Information², the Lithuanian National Commission for UNESCO initiated a group of experts that prepared a statement on Lithuania's position towards the issue. In spite of an overall positive predisposition towards OA, a lot has to be done in promoting and realizing OA on the institutional and personal, i.e.

researcher's level. However, the effort and action is directed towards the future steps in that direction, most existing data collections and publications are still not accessible. The database of publications on Lithuanian studies³ (the *Lituanistika* database) fills in the gap and makes full texts of thematic research in Social Sciences and Humanities (SSH) available. Here follows an attempt to give some insights into its design, functions and objectives.

Originally the *Lituanistika* database was designed to provide bibliographic information, as well as a full text approach, to a variety of genres in Humanities and social sciences research, the object of which is the past and present of Lithuania's state, society, culture, nation and language. Since 2006 it has been built in the framework of three consecutive projects of EU Structural Funds, coordinated by the Research Council of Lithuania. The main idea was not only to compile a unique specialized thematic database of national importance, but also to give priority to qualitative evaluation of SSH research over the widespread quantitative assessment. The project appeared as the result of a public and legal debate on how to evaluate publications of SSH. At the time, before the reform of the Research Council in 2008 and its reorganization into two committees (for soft and hard sciences), the dominating pattern for research assessment was based on external factors such as internationally recognized publishers, references in international databases, as well as quantity of papers. Some specific SSH genres like monographs, publications of original research resources (archives, documents, etc.), overviews, studies, and some others were ignored by the ministerial evaluators. In other words, the hard science assessment pattern was imposed on SSH, although the prevailing quantitative assessment was inadequate and even distorting the view of the SSH output. After the interference of the President's office and the Research Council of

1 Lietuvos Respublikos mokslo ir studijų įstatymas, 2009: Lietuvos Respublikos Seimo 2009 m. balandžio 30 d. įstatymas Nr. XI-242. *Valstybės žinios* [online]. Nr. 54-2140. [cited 25-05-2013]. Available from World Wide Web: <http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=343430&p_query=&p_tr2=>>.

2 Minsk Recommendations for Open Access to Scientific Information: Final Recommendation of Regional Consultation on "Open Access to Scientific Information and Research - Concept and Policies", 2012 [online]. 05-07 September 2012. [cited 25-05-2013]. Available from World Wide Web: <http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/recommendation_minsk_oa_sept2012_en.pdf>.

3 Lituanistika database, 2012 [online]. [cited 25-05-2013]. Available from World Wide Web: <<http://www.lituanistikadb.lt/en/home.html>>.

Lithuania, the assessment rules for the output of SSH research were changed taking into consideration the specificity of SSH research and publication culture. One of the instruments for evaluation was the above mentioned database, compiled from peer reviewed publications.

A distinctive feature of the *Lituanistika* database was the reassessment of the candidate texts that were published before. The necessity to re-evaluate research output was caused not only by the need to identify thematically suitable texts but also to assess the novelty and originality of SSH research, its impact on the society, the quality of the research in general. Another distinction of the *Lituanistika* database was the variety of the publication channels. Peer-reviewed research journals as well as the so called cultural and educational magazines published both inside the country and abroad were searched for candidate texts. In this way emphasis was put on the text itself instead of its publication channel. This approach turned out to be a good exercise, as 1/5 of the previously evaluated publications was rejected for quality reasons. Rejection of specific texts had to be suggested by both reviewers of the database, in the case of contradictory opinions; one additional reviewer was invited to support either side.

Gradually the assessment exercise was confined only to certain types of publications, mostly research papers, coming from journals with unknown or negative records from previous evaluations. Dissertations, peer-reviewed monographs and papers published in high quality journals (i.e. publications in journals with a quality factor ≥ 0.9 meaning that 90 or more publications out of 100 were evaluated positively) were included in the database without additional assessment, only after the so called regulative evaluation. Due to the recent increase of peer-reviewed publications, the need for re-evaluation abides. In the last period of the project 88% of the publications were re-evaluated, 15% out of them negatively (a detailed statistical account can be found at <http://www.lituanistikadb.lt/lt/apie-duomenubaze/analize-ir-statistika.html>).

At present, the database consists of more than 40 thousand publications in a great variety of genres and languages, but most of them are research papers written in Lithuanian. However, texts of dissertations, monographs, research based textbooks, overviews, biographies, catalogues, linguistic maps, book reviews,

publications of source documents, etc. published in Lithuanian, English, German, Russian, and Polish are included. From the point of view of its functions the *Lituanistika* database is meant to accumulate, analyze, organize, systematize, and preserve these data, to ensure open access to them and provide additional services to the scientific community as a whole. Initially, a set of evaluative criteria had to be approved (more about the issue see Siversten et al.⁴).

The right to put full texts of the reviewed papers into the DB is negotiated with the publishers. At the moment more than a half of all the texts, usually research papers, can be freely accessed by users. The majority of them come from the national open access journals included into the DOAJ index. Open access seems to be the most attractive aspect of the service provided, and therefore an emphasis is put on further development of *Lituanistika*. Recently the DB was included in the Registry of Open Access Repositories (ROAR; <http://roar.eprints.org/>) together with 3416 world OA repositories. Moreover, it was presented to and now awaits acceptance by another authoritative directory of academic open access repositories, i.e. OpenDOAR (<http://www.opendoar.org/>). The dissemination of publications in *Lituanistika* is guaranteed by the use of OAI-PMH protocol (the Open Archives Initiative Protocol for Metadata Harvesting), which is usually used to collect information from various internet sources by all prevailing search engines.

One of the additional aims of the DB is to present lists of the cited authors and cited literature and in this way link to publications used in other publications. More than 290 thousand citation records help to find out how many times the DB authors cite and are cited, and to compile h-indexes and other types of indexes and rankings. Thus the DB can be considered as an experimental national bibliometric database on the Lithuanian studies. SSH usually concentrates on specific national themes and topics, and this is also the case with the Lithuanian studies and research. In addition, they are predominantly published in the national language and therefore rarely accepted by international journals,

4 Siversten, G., Larsen, B., 2012. Comprehensive bibliographic coverage of the social sciences and humanities in a citation index: an empirical analysis of the potential. *Scientometrics* [online]. [cited 25-05-2013]. ISSN 1588-2861. 91:567-575. DOI 10.007/s11192-011-0615-3.

thus hardly reflected in the Thomson Reuters Web of Science or Scopus databases. According to the recommendations of the *European Scoping Project*⁵, national bibliometric databases for SSH have to be created in order to reflect and preserve the specificity of SSH research. The *Lituanistika* DB follows this advice, measuring citations for multiple purposes, i.e.

for transparency and accountability of the public funds spent for research, for the qualitative assessment, for the worldwide overview of *Lituanistika* studies and research outputs, among many other purposes. This is how bibliographic and bibliometric, qualitative and quantitative approaches to the evaluation of SSH are reconciled.



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⁵ Towards a Bibliometric Database for the Social Sciences and Humanities – A European Scoping Project : A report produced for DFG, ESRC, AHRC, NWO, ANR and ESF, 2010 [online]. [cited 25-05-2013]. Available from World Wide Web: <http://globalhighered.files.wordpress.com/2010/07/esf_report_final_100309.pdf>.