

Transformative agreements: Do they pave the way to open access?

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Abstract

Transformative agreements, also known as 'offsetting', 'read and publish', or 'publish and read' agreements, have shifted the focus of scholarly journal licensing from cost containment towards open access publication. An analysis of 36 full-text transformative agreements recorded in the ESAC registry shows that 'transformative agreement' is an umbrella term that encompasses different kinds of contracts. We differentiate between pre-transformative, partially transformative, and fully transformative agreements. Pre-transformative agreements are traditional subscription licences that grant article processing charge (APC) discounts or vouchers for open access publication of a limited number of articles. Partially transformative agreements differentiate between a read fee and a publish fee to cover the processing charges of a certain number of articles. Fully transformative agreements allow unlimited open access publication of the scholarly output of the subscribing institution. In all three categories, some agreements restrict open access publication to hybrid journals, whereas others allow publication in both hybrid and gold journals. Transformative agreements are more transparent than traditional journal licences, allow authors to retain copyright, and make provisions to facilitate the management of open access workflows. It is hard to assess whether these agreements are just a temporary phase in the transition towards open access or will perpetuate the current structure of the scholarly communication system and its associated high costs.

INTRODUCTION

Since the 1970s, when the expression 'serials crisis' was coined (Jurchen, 2020), subscription prices to scholarly journals have regularly increased at a rate higher than inflation. Between 1984 and 2010, the average price of US academic journals increased more than eightfold, while the inflation rate was 110% (Shu *et al.*, 2018). A possible solution to this problem emerged at the end of the 1990s, with the rise of the Internet. The migration of print journals to an electronic format has had limited impact on formal aspects (Herman, Akeroyd, Bequet, Nicholas, &

Watkinson, 2020) but has resulted in major changes to how scholarly journals are marketed, their pricing models, and their availability to readers (Anglada & Comellas, 2002). Academic and research libraries began associating in consortia and replacing the subscription of individual titles with big deal licences of journal bundles marketed by large publishers at a discount off the aggregated list price (SPARC, 2020).

At the same time, the open access (OA) movement shook up scholarly communication by suggesting that access to academic journals should not be constrained by economic or legal barriers. Although this approach seemed promising, its consolidation is

taking longer than expected (Robinson-Garcia, Costas, & van Leeuwen, 2020), and it has become clear that, to succeed, OA needs sustainable business models and policies to enforce it.

Regarding business models, BioMed Central, founded in 2000 and owned by Springer (now Springer Nature) since 2008, was a pioneer in the introduction of article processing charges (APCs), fees charged to authors to make their work available through OA. In order to facilitate the administration of payments, OA publishers such as Hindawi and MDPI created ‘membership programmes’ that allow institutions to centralize payments and obtain discounts, two features also present in the transformative agreements (TAs) discussed below. With the introduction of Springer Open Choice in 2004, traditional publishers whose business model was based on selling subscriptions also implemented APCs. Their journals moved to a ‘hybrid’ model that combines subscription content, which is paywalled, with OA for articles whose authors pay an APC. Based on a sample of 4.6 million records, Robinson-Garcia *et al.* (2020) recently calculated that 16% of the publications indexed in Web of Science between 2014 and 2017 were available in hybrid OA. This approach has proved harmful to subscribers since the increasing share of OA articles does not reduce subscription prices, leading institutions towards a ‘double dipping’ in which they keep paying the same subscription price while adding an APC for some of the articles their authors publish (Lundén, Smith, & Wideberg, 2018).

Within this context, some voices (Schimmer, Geschuhn, & Vogler, 2015; Shieber, 2014) called for a move away from paywalled subscriptions towards OA without increasing the resources devoted to the scholarly communication system. In the UK, the Finch Report (2012, p. 7) recommended ‘a clear policy direction ... towards support for publication in open access or hybrid journals, funded by APCs, as the main vehicle for the publication of research’. The report concluded that if researchers aim to make their results openly available, they should assume the cost of publication traditionally borne by readers. Shieber (2014) claimed that ‘a move to author-side fees from reader-side fees has the potential to be a much more transparent, competitive, and efficient market, which may well lead to overall cost reductions’. Shortly afterwards, a report by the Max Planck Society (Schimmer *et al.*, 2015) stated that ‘all the indications are that the money already invested in the research publishing system is sufficient to enable a transformation that will be sustainable for the future. There needs to be a shared understanding that the money currently locked in the journal subscription system must be withdrawn and repurposed for open access publishing services’.

The notion of offsetting the costs of OA against the cost of subscriptions was rapidly implemented. In July 2012, the Royal Society of Chemistry (RSC) announced ‘Gold for Gold’ as ‘an innovative experiment to support the funder led evolution to Gold OA’. It provided British institutes that were RSC subscribers with ‘credit equal to the subscription paid, enabling their researchers, who are being asked to publish Open Access but often do not yet have funding to pay for it directly, to make their paper available via Open Science, the RSC’s Gold OA option’ (RSC, 2012a). A few months later, the RSC announced the

Key points

- The negotiation of journal licence agreements has shifted its focus from cost containment towards the inclusion of clauses in favour of open access.
- ‘Transformative agreement’ is an umbrella term that encompasses a continuum of contracts, ranging from traditional subscription licences that grant discounts in publication fees or vouchers to agreements allowing unlimited open access publication.
- Transformative agreements are more transparent than journal licences, allow authors to retain copyright, and make provisions to facilitate open access workflows.
- It is hard to assess whether transformative agreements are transitory or will perpetuate the current structure of the scholarly communication system.

expansion of the programme worldwide (RSC, 2012b). In February 2014, a group of Austrian institutions and IOP Publishing announced a new pilot programme that would ‘provide advance funding for Austrian researchers to publish on a hybrid open access basis in IOP’s subscription journals and which will offset that funding against subscription and licence fees paid by the Austrian Academic Consortium for access to IOP’s journals’ (IOP Publishing, 2014).

At roughly the same time, in November 2014, the Association of Universities in the Netherlands (VSNU) announced the renewal of its subscription to Springer with terms including OA so that ‘scientists in the Netherlands will be able to publish in open access format in existing Springer journals, while retaining reading privileges to these journals as well’. At that point in time, the Dutch State Secretary for Education, Culture and Science fixed the target that ‘five and ten years from now 60% and 100% of all Dutch academic publications, respectively, should be open access publications’ (VSNU, 2014). Similar agreements were reached a year later with Wiley (VSNU, 2015a) and Elsevier (VSNU, 2015b) following a threat of boycott by the consortium if 30% of Dutch papers were not OA in VSNU-subscribed Elsevier journals by 2018 (Butler, 2016). In the UK, Jisc signed a Springer Compact agreement that would run from October 2015 until December 2018, which combined OA publishing and subscription access in one annual fee. A major driving force for the Dutch and British deals ‘was to combat the expensive and controversial ‘hybrid’ business models’ (Butler, 2016).

The negotiation of TAs coincided with the cancellation of big deals. At the end of 2016, the Finnish consortium FinELib and Elsevier settled a 1-year extension of negotiations ‘in order to find a solution for advancing open access, which is an extremely important goal for the Finnish research community’ (Peltonen, 2016). At the same time, it was announced that scientists in Germany, Peru, and Taiwan were about to lose access to

Elsevier journals. In Germany, the DEAL consortium of universities and research organizations complained that the contract proposed by Elsevier cost too much and failed to include an OA clause (Schiermeier & Rodríguez Mega, 2017). Negotiations went on for a year (Schiermeier, 2017a), with German universities asking for a ‘deal that would give most scientists in Germany full online access to [...] Elsevier journals, at about half the price that individual libraries have paid in the past’ (Schiermeier, 2017b). At this stage, OA proved ‘to be the sticking point in the talks: under the deal sought, all corresponding authors affiliated with German institutions would be allowed to make their papers free to read and share by anyone in the world at no extra cost’ (Schiermeier, 2017b). Finally, in July 2018, Elsevier cut off access to German and Swedish researchers when negotiations on new contracts broke down (Else, 2018a).

Despite initial concerns, researchers in institutions cancelling big deals have generally not protested the loss of access to journals. Several reasons help to explain this acquiescence: many researchers still have access to past volumes thanks to perpetual access negotiated in previous contracts; interlibrary loans provide them with the articles they require; and they resort to personal contacts, social networks (e.g. ResearchGate), or other sources (e.g. SciHub) to gain access to the literature (Jakobsson, Lindelöv, Olsson, & Österlund, 2019; Schiermeier & Rodríguez Mega, 2017; Tay, 2019; Widmark & Hamrin, 2019).

German negotiations with other publishers proved more successful than those with Elsevier. At the beginning of 2019, DEAL reached its first TA with Wiley (Else, 2019a), and at the beginning of 2020, it reached another with Springer Nature. Through these two agreements, the number of articles by German authors published OA will be around 10,000 and 13,000 per year, respectively. Although the agreement with Springer Nature included journals published under several imprints, *Nature* and its sister journals were excluded. However, on 20 October 2020, the Max Planck Digital Library announced a new agreement covering reading and OA publishing in 34 *Nature*-branded journals plus access to articles in 21 *Nature Reviews* journals on the basis of a price of 9,500 euros per article (Van Noorden, 2020).

Elsevier, which had trouble reaching TAs in Germany and Sweden, struck a national deal in Norway at the beginning of 2019 (Elsevier, 2019; Qureshi, 2019; Unit, 2020). Under the agreement, Norwegian scientists gained access to Elsevier journals and were able to publish 1,850 OA articles annually. Based on historical data, this would cover about 90% of output by Norwegian authors in Elsevier journals. According to a negotiator for the Norwegian consortium, the deal was ‘cost neutral’ compared with the previous agreement, which did not include OA fees. The consortium had paid Elsevier 9 million euros in subscription costs in 2018, plus an estimated 1 million in APCs (Else, 2019b). The consortium of Swiss universities also reported, at the end of 2019, that they had signed memorandums of understanding with Elsevier and Wiley to include OA publications in their licences (swissuniversities, 2019). The agreement with Elsevier was announced in May 2020, enabling Swiss researchers ‘to publish Open Access across the majority of Elsevier’s

Gold and Hybrid journals, scaling up to 100% by 2023’ (swissuniversities, 2020).

Other consortium agreements started to include OA clauses too. In Greece, in the context of negotiations for the 2019–2021 renewal of licences, provisions were made to combine access with OA publication. The website of the HEAL-Link consortium (2020) lists information about several agreements with publishers, including either the publication of a certain number of articles in gold and/or hybrid journals – as in the agreements with Cambridge University Press or the Royal Society of Chemistry – or a 10% discount on the APC – as in the case of Elsevier, Emerald, IEEE, or Wiley. Similarly, the agreements negotiated in Portugal for the period between 2019 and 2021 included either APC waivers for a certain number of articles or APC discounts ranging from 5% to 20% (J. Novais, personal communication, August 5, 2020). The consortium of Irish higher education institutions reached an agreement with Elsevier in February 2020, which in addition to giving them access to its journals enabled ‘Irish researchers to publish more than 70 percent of their research without having to pay an Article Publishing Charge’ (Irish, 2020). South Africa is also considering a similar national shift (Bawa, 2020). By August 2020, Springer listed 13 countries where ‘Read and Publish (Springer Compact)’ agreements had been signed, all of them in Europe except for two in Asia (Springer, 2020).

Contrary to what other large European consortia were doing, in April 2019, the French Couperin consortium announced the renewal of its bundled journal subscription with Elsevier (Clavey, 2019). The agreement included a 13.3% discount on access over 4 years and a 25% APC discount for French researchers in Elsevier gold and hybrid journals. The novelty – and the controversy – of the agreement lay in the clauses related to the provision of green OA (Bourrion, 2019). The deal envisaged that, 12 months after publication, the post-print (author-accepted manuscript) would be automatically uploaded by Elsevier to ScienceDirect with a notice in HAL (the French national repository) linking to the file. Later, 24 months after publication, this manuscript would be available in HAL. This procedure would relieve French researchers of the task of depositing their articles, but it would do so with an embargo period longer than the one provided for in French law (6 months in science and technology and 12 months in social sciences and humanities).

So far, TAs have essentially been a European phenomenon (Else, 2018b). A survey by the European University Association (Morais, Bauer, & Borrell-Damián, 2018) reported that, in 2017, only 11% of consortia in Europe made deals that included OA, but 63% planned to do so in the future. Possibly, one of the reasons for this interest is the fact that funding institutions increasingly mandate OA for the results of the research they fund. In 2018, cOAlition S (www.coalition-s.org), a consortium of national research agencies and funders from 12 European countries, launched Plan S, which requires researchers who benefit from grants to publish their work OA by 2021. The ESAC initiative (<https://esac-initiative.org>), currently managed by the Max Planck

Digital Library, maintains a registry of TAs to which libraries and consortia are invited to submit their agreements.

Meanwhile, in the USA, a growing number of libraries were critically reappraising big deals, resulting in numerous cancellations tracked by SPARC (2020). In June 2018, Schonfeld (2018) suggested that TAs, which were becoming quite popular in Europe, would have much less of an impact in the USA. Making a comparison with the flu pandemic of 1918 (sadly, a timely analogy in light of recent developments), he stated that ‘while the germs are circulating, at least in the near term, publishers are unlikely to face a global pandemic’. The diversity of the American market seems to be to blame for the delay in adopting TAs (Machovec, 2019). However, in the past 2 years, there has been a growing number of TAs in the USA since the first one agreed on between the Massachusetts Institute of Technology (MIT) and the Royal Society of Chemistry (Fay, 2018).

At the end of 2018 and into the first quarter of 2019, the University of California and Elsevier ran into difficulties in reaching an agreement to renew the contract that expired in December 2018. The University of California was ‘not primarily protesting rising prices, though it would still like to see its fees reduced’, but it was seeking ‘to fundamentally alter how it pays for journal content from publishers like Elsevier and to accelerate open-access publishing in the process’ (McKenzie, 2018). The breakdown in negotiations was announced in February 2019 (Fox & Brainard, 2019; Gaind, 2019). The dispute was significant because the University of California system accounts for 10% of scholarly output in the USA, and it was paying more than 10 million dollars for access to Elsevier journals. The difficulties arose because the University of California wanted to roll access and publication into one annual fee, whereas Elsevier did not want to shift to a fixed annual rate for an unknown number of articles. Shortly after the negotiations broke down, the University of California published a presentation with details of the negotiations (MacKie-Mason, Waibel, & Willmott, 2019). At roughly the same time, in April 2019, the University of California reached its first TA with Cambridge University Press (Schonfeld, 2019). The Association for Computing Machinery (ACM) entered into TAs by signing deals with the University of California, Carnegie Mellon University, Massachusetts Institute of Technology, and Iowa State University (ACM, 2020).

As the first TAs in the market began to expire, subscribing institutions conducted evaluation studies to assess their performance. In brief, although it was found that TAs had slowed down increases in costs and could help institutions in the administration and implementation of OA, they were also ‘flawed through their implicit acceptance and strengthening of the current costly and opaque market for journal subscriptions’ (Earney, 2017). When Jisc assessed the results of the offset agreements it had signed over the period 2015–2017 – with an estimated combined value of £19.5 million – it observed that the Springer Compact agreement was the biggest contributor to subscription cost avoidance while also providing the largest proportional reduction in publishing costs. It concluded that offsetting had increased the value of journal licences and had raised the number of articles published

OA. However, ‘the approach also has significant drawbacks, notably the risk of entrenching the existing structure of the journals market and locking up even more money in big deals rather than reducing overall costs’ (Lawson, 2019). When assessing the results of the first TA signed in Sweden with Springer for the period from 2016 to 2018, Olsson, Francke, Lindelöw, and Willén (2020) reached similar conclusions. The advantages of TAs would include the increase in OA publishing, improved workflows, and ease for researchers. However, TAs also posed the risk of perpetuating the current system and its associated high costs. More recently, in the UK, given the sharp increase in publishing during the first 9 months of the TA with Wiley, Jisc decided to implement controls on articles being published OA (Vernon, 2020).

Gutknecht (2020) recently provided an initial assessment of the Swiss TA with Elsevier. Although the first year of the agreement had not yet expired, he found that the APC quota included would hardly be exhausted before the end of the year. On the other hand, there were many articles from the institutions involved that were not published via the agreement and articles with a ‘Swiss’ co-author – but not a corresponding author – that were therefore excluded from the agreement. Based on this analysis, Herb (2020) compared the agreement between Elsevier and the Swiss consortium with the TA that Projekt DEAL reached with Springer Nature and Wiley.

An additional source of concern is free riders. If more institutions shift towards OA embedded in TAs, the share of OA will dramatically increase. As a result, less research-oriented institutions will be tempted to cancel their subscriptions (Esposito, 2018). In the case of consortia, this behaviour may unbalance internal agreements for cost distribution. The Swedish Bibsam consortium has already produced a report on the topic that envisions three possible scenarios (van der Vooren, 2019).

The COVID-19 pandemic has introduced more uncertainty into this evolving landscape. The need for better and faster research has given a new boost for OA. However, research institutions face economic constraints, with projected library budget cuts of up to 40% (RLUK, 2020) that will require flexibility from publishers (ICOLC, 2020), no price increases (Spanish Board of Consortia and Purchase Groups, 2020), or fee reductions that Jisc aims to set at 25% (Jisc, 2020a).

There is a wide array of OA business models available. Wise and Estelle (2019, p. 19) identify 27 strategies that support full, immediate OA and are Plan S compliant. They organize these strategies into seven categories: transformative models; cooperative infrastructures and funding models; immediate sharing with open licence models; article transaction models; open publishing platforms; other revenue models; and cost reduction. They define ‘transformative models’ as those that ‘repurpose existing institutional spend with publishers in order to open content’ (Wise and Estelle, 2020, p. 17) and identify seven categories of transformative agreements: California Digital Library pilot transformative agreement; Knowledge Unlatched’s journal flipping programme (now referred to as Subscribe-to-Open); Libraria; publish-and-read agreements; read-and-publish agreements; SCOAP3; and Subscribe to Open developed by non-profit publisher Annual

Reviews. Some of these models refer to specific projects, such as Knowledge Unlatched (<https://knowledgeunlatched.org/ku-journals/>), Libraria (<http://libraria.cc>), or SCOAP3 (<https://scoap3.org>). Similarly, although other publishers can apply it, Subscribe to Open is a model developed by a particular non-profit publisher, Annual Reviews. In another, simpler classification, Hinchliffe (2020) distinguishes four categories of OA publishing models: transformative agreements; pure publish agreements; subscribe to open; and membership models. Finally, a Delphi study commissioned by the European University Association (van Barneveld-Biesma *et al.*, 2020) concludes that current 'read and publish' or 'publish and read' contracts are just an 'intermediary phase' on the way towards a different scholarly publishing market based on OA platforms that are either publisher- or community-owned.

To some extent, 'transformative agreement' has become an umbrella term that encompasses a variety of deals. Our purpose is to shed light on the main features of these agreements. In this study, we focus on TAs between traditional publishers and libraries and consortia, that is, what is commonly known as 'read and publish' and 'publish and read' agreements. More specifically, we analyse the features of the agreements listed in the ESAC Transformative Agreement Registry. The research is underpinned by three questions:

- What types of TAs are in the marketplace?
- What are their features?
- To what extent do TAs pave the way towards OA?

METHODS

On 25 April 2020, the ESAC Registry contained 98 transformative agreements, although 21 had expired before 31 December 2019, leaving 77 transformative agreements active at the time of data collection. Since we aimed to analyse the content of the agreements, we were forced to remove 40 agreements that had not been disclosed and 1 agreement only available in Hungarian. The remaining 36 agreements are the ones analysed in this article, which are listed in the Annex to this paper.

This approach has three limitations. First, subscribing libraries voluntarily register their agreements in ESAC, so this source does not necessarily provide a full picture of the population of TAs that are currently active. Second, ESAC describes the fundamental guidelines of a TA, but it does not check whether the agreements registered fulfil these requirements. Third, although disclosure is one of the features required of a TA for it to be acknowledged as such, the full text of many agreements was not available. Despite these limitations, the number of agreements (36) and the diversity of publishers and libraries involved (see Table 1) are sufficient to suggest that they provide a reliable picture of the landscape of TA in the marketplace.

The 77 agreements initially identified in ESAC had been signed by 23 publishers. There was at least one agreement disclosed for 19 of these publishers. The initial 77 agreements covered a total of 17 different countries. There were full-text agreements available for nine of these countries.

TABLE 1 Publishers and countries involved in transformative agreements.

	Agreements listed (n = 77)	Agreements disclosed (n = 37) ^a
Publishers		
AkadémiaiKiadó	1	1
American Chemical Society	6	2
Association for Computing Machinery	2	2
Cambridge University Press	7	0
Company of Biologists	1	1
EDP Sciences	2	0
Elsevier	5	3
Emerald	3	1
European Respiratory Society	1	1
IOP Publishing	5	1
IWA Publishing	3	2
Karger	2	2
Microbiology Society	2	1
Oxford University Press	4	3
Portland Press	2	1
Rockefeller University Press	1	1
Royal Society of Chemistry	8	1
Sage	3	2
Springer Nature	7	6
Taylor & Francis	4	2
Thieme	1	0
Walter de Gruyter	2	0
Wiley	5	4
Countries		
Australia	2	0
Austria	10	0
Finland	1	1
France	1	0
Germany	12	2
Greece	2	0
Hungary	4	4
Ireland	1	0
Netherlands	8	8
Norway	7	4
Qatar	1	0

TABLE 1 Continued

	Agreements listed (n = 77)	Agreements disclosed (n = 37) ^a
Slovenia	1	0
Spain	3	1
Sweden	7	6
Switzerland	2	0
United Kingdom	10	10
United States	5	1

^aAn agreement between EISZ in Hungary and AkadémiaiKiadó was excluded from the study because it was only available in Hungarian.

All three authors used the same grid to annotate all the agreements independently. The features analysed included: subscribers (number of subscribing institutions and typology); journals licensed; OA publishing provisions (number of articles, eligible authors, journal limitations, green OA provisions, publishing licence); and costs (reading fee, APC rates, incremental costs). When the researchers disagreed, the contract was jointly analysed until agreement was reached.

RESULTS

As noted above, ‘transformative agreement’ is an umbrella term that encompasses different kinds of agreements. Based on the analysis of the 36 TAs disclosed in the ESAC registry, we distinguished three categories of TA. The classification was determined by several features: how agreements grant OA publication (discounts, vouchers, average APC rates, or unlimited publication), how the cost is balanced between read-and-publish fees, and whether they include OA publication only in hybrid journals or in both hybrid and gold journals (Table 2).

The boundaries between the different types of agreements are blurred. Rather than closed categories, there is a continuum of contract types ranging from traditional subscription licences that grant APC discounts or vouchers for a certain number of articles to unlimited OA publishing agreements, with a wide range of options in between. In order to set limits within this continuum, we distinguished between pre-transformative, partially transformative, and fully transformative agreements.

Pre-transformative agreements

In our proposed list of categories, pre-transformative agreements are traditional subscription licences which, besides granting online access to the publisher’s bundle of journals, make a provision for OA publication. In addition to access to paywalled content, publishers grant subscribers either APC discounts for OA publication or a set of vouchers for the OA publication of a limited set of articles.

APC discounts

In the introduction, we described examples of TAs – such as those of HEAL-Link in Greece and those of the Biblioteca do Conhecimento Online (b-on) in Portugal – that grant subscribers discounts on APC rates for OA publication. We have not found many examples of this kind of contract in our sample, although a similar clause is present in the agreement between VSNU Netherlands and the Royal Society of Chemistry, which offers a number of vouchers to some subscribing institutions, while others are granted a 15% discount on APC rates. APC waivers and discounts are relatively common through institutional membership programmes or to individual authors – to reviewers for instance – but may not be formalized in subscription agreements. It is also possible that some libraries do not register these agreements in ESAC because it may seem doubtful whether this practice can be qualified as ‘transformative’.

In the agreement between VSNU Netherlands and the Royal Society of Chemistry, only corresponding authors affiliated with the subscribing universities qualify as eligible authors to publish the fixed amount of OA articles. The same criterion is employed throughout all the agreements, which always use nearly identical definitions of eligible authors.

OA vouchers

Some TAs, in addition to setting conditions for online access to the publisher’s journals, grant the subscriber a set of vouchers for OA publication. In most cases, the number of vouchers is relatively small – a few dozen – suggesting that they only cover a fraction of the subscriber’s scholarly output. In other cases, however, the number is much larger, and for small institutions or specialized publishers, they may cover the OA publication of a large share of the subscriber’s output.

This is the case, for example, of the agreement between EISZ Hungary and the American Chemical Society, which grants the annual OA publication of 61 articles. Similarly, the agreement between VSNU Netherlands and Emerald grants the annual OA publication of 55–57 articles, and the agreement between VSNU Netherlands and Karger includes the OA publication of 125 articles ($\pm 10\%$). On a different scale, the agreement between EISZ Hungary and Elsevier provides for the yearly OA publication of 1,000 articles in both hybrid and gold OA journals.

In these agreements, the whole cost of the contract is intended to pay for access to the publisher’s journals, whereas discounts or vouchers are not assigned a specific cost. Obviously, the fact that the price is not disaggregated does not mean that the total cost has not increased with respect to previous licences to cover the additional OA publication option.

Partially transformative agreements

We classify as partially transformative those agreements whose cost differentiates between a read fee and a publish fee to cover the APCs of a certain number of articles. Compared to pre-transformative agreements, based on discounts or vouchers,

TABLE 2 Features of transformative agreement.

Country	Agreement	Period	OA provision (percentages refer to annual share of publish fee)	Yearly OA articles	APC rate on which the agreement is based	Journals	Type of agreement
Finland	FinELib –Springer Nature	2018–2020	77%–80%–80%	185–763–779	€2,200–€2,244–€2,289	Hybrid	Partially transformative
Germany	Projekt DEAL – Springer Nature	2020–2023	Single publish-and-read fee	9,500 (first year) – Unlimited	€2,750	Hybrid (20% discount in gold)	Fully transformative
Germany	Projekt DEAL – Wiley	2019–2021	Single publish-and-read fee	9,500 (first year) – Unlimited	€2,750	Hybrid (20% discount in gold)	Fully transformative
Hungary	EISZ – American Chemical Society	2019–2021	Vouchers	61 (first year) – To be calculated for subsequent years	N/A	Hybrid	Pre-transformative
Hungary	EISZ – Elsevier	2019–2021	Vouchers	500–1,000–1,000	N/A	Hybrid and gold	Pre-transformative
Hungary	EISZ – Wiley	2019–2021	48%–51%–53%	N/A	APCs deducted from fund	Hybrid and gold	Partially transformative
Netherlands	VSNU – American Chemical Society	2017–2021	Single publish-and-read fee	Unlimited	N/A	Hybrid	Fully transformative
Netherlands	VSNU – Emerald	2019–2020	Vouchers	55–57 plus one extra article per year per institution on Emerald Open Research platform	N/A	Hybrid and gold	Pre-transformative
Netherlands	Delft & Wageningen – IWA Publishing	2019–2021	Single publish-and-read fee	Unlimited	N/A	Hybrid and gold	Fully transformative
Netherlands	VSNU – Karger	2019–2021	Vouchers	125 (±10%) annually	N/A	Hybrid and gold	Pre-transformative
Netherlands	VSNU – Oxford University Press	2019–2020	12%	760 annually	€82,628 (total fund)	Hybrid	Partially transformative
Netherlands	VSNU – Royal Society of Chemistry	2019–2020	Vouchers for some institutions and 15% APC discount for others	N/A	N/A	N/A	Pre-transformative
Netherlands	VSNU – Springer Nature	2018–2021	92%–92%–93%–93%	1,070–1,099–1,128–1,158	€2,200–€2,240–€2,290–€2,340	Hybrid	Partially transformative
Netherlands	VSNU – Taylor & Francis	2017–2020	Single publish-and-read fee	1,399–1,448–1,499–1,551	N/A	Hybrid	Partially transformative
Norway	Unit – Elsevier	2019–2020	Single publish-and-read fee	1,850 annually	N/A	Hybrid and gold	Partially transformative

TABLE 2 Continued

Country	Agreement	Period	OA provision (percentages refer to annual share of publish fee)	Yearly OA articles	APC rate on which the agreement is based	Journals	Type of agreement
Norway	Unit – Sage	2020–2022	Single publish-and-read fee	Unlimited	N/A	Hybrid (20% discount in gold)	Fully transformative
Norway	Unit – Springer Nature	2020–2022	66%–67%–68%	622–638–654	€2,289–€2,335–€2,381	Hybrid	Partially transformative
Norway	Unit – Wiley	2019–2021	30%–40%–50%	N/A	APC deducted from fund with 20% discount on list price	Hybrid and gold	Partially transformative
Spain	CSIC Spain – Oxford University Press	2020–2024	Vouchers	45–58–71–89–100	N/A	Hybrid (80% and gold (20%))	Pre-transformative
Sweden	Bibsam – Elsevier	2020–2022	Single publish-and-read fee	Unlimited	N/A	Hybrid and gold	Fully transformative
Sweden	Bibsam – Oxford University Press	2019–2021	23%	N/A	APC deducted from fund with 10% (governmental organization and colleges) or 20% (universities) discount on list price	Hybrid	Partially transformative
Sweden	Bibsam – Sage	2020–2022	Single publish-and-read fee	Unlimited	N/A	Hybrid (20% discount in gold)	Fully transformative
Sweden	Bibsam – Springer Nature	2019–2021	89%–90%–90%	1,578–1,633–1,690	€2,289	Hybrid	Partially transformative
Sweden	Bibsam – Taylor & Francis	2018–2020	Single publish-and-read fee	1,491	€2,150	Hybrid	Partially transformative
Sweden	Bibsam – Wiley	2020–2022	50%–55%–59%	N/A	APC deducted from fund with 15% discount on list price	Hybrid and gold	Partially transformative
United Kingdom	Jisc – University Rockefeller Press	2020–2022	Single publish-and-read fee	Unlimited	N/A	Hybrid	Fully transformative
United Kingdom	Jisc – Karger	2020–2022	Single publish-and-read fee	Unlimited	N/A	Hybrid and gold	Fully transformative
United Kingdom	Jisc – Association for Computer Machinery	2020–2022	Single publish-and-read fee	Unlimited	N/A	Hybrid	Fully transformative
United Kingdom	Jisc – Company of Biologists	2020–2021	Single publish-and-read fee	Unlimited	N/A	Hybrid	Fully transformative
United Kingdom	Jisc – European Respiratory Society	2020–2021	Single publish-and-read fee	Unlimited	N/A	Hybrid	Fully transformative

TABLE 2 Continued

Country	Agreement	Period	OA provision (percentages refer to annual share of publish fee)	Yearly OA articles	APC rate on which the agreement is based	Journals	Type of agreement
United Kingdom	Jisc – IOP Publishing	2020–2022	Single publish-and-read fee	Unlimited or 70% discount on price list (2 options)	N/A	Hybrid	Fully transformative
United Kingdom	Jisc – IWA Publishing	2020–2021	Single publish-and-read fee	Unlimited	N/A	Hybrid and gold	Fully transformative
United Kingdom	Jisc – Microbiology Society	2020–2021	Single publish-and-read fee	Unlimited	N/A	Hybrid and gold	Fully transformative
United Kingdom	Jisc – Portland Press	2020–2021	Single publish-and-read fee	Unlimited	N/A	Hybrid and gold	Fully transformative
United Kingdom	Jisc – Springer Nature	2019–2021	92%–92%–92%	4,808–4,934–5,127	€2,244–€2,289–€2,335	Hybrid	Partially transformative
United States	California Digital Library – Association for Computer Machinery	2020–2022	Single publish-and-read fee	Depends on institution	N/A	Hybrid	Partially transformative

N/A, not available.

partially transformative agreements aim to cover the APC fees for what seems to be a relatively large share of the output of the subscribing institution. The difference between pre-transformative and partially transformative agreements lies in the fact that the former include discounts or vouchers in addition to a subscribing licence, whereas the latter set an average APC rate for the OA publication of a certain number of articles specified in the agreement.

The distinction between pre-transformative and partially transformative agreements is to some extent artificial. However, the inclusion of OA publishing fees in partially transformative agreements suggests a transition towards a new kind of contract focused on OA publication. The distinction between partially and fully transformative agreements is also vague. Multi-year contracts progressively increase the publish fee against the read fee, suggesting that they will end up being fully transformative agreements intended to cover the OA publication of the complete scholarly output of the subscribing institution. Most contracts that grant the OA publication of a limited number of articles do not state what share of the scholarly output of the institution is expected to be published OA under the agreement. Therefore, some agreements classified here as partially transformative could become fully transformative if the number of articles in the quota approaches 100% of the institutional output.

Finally, another feature that merits some comment is the fact that some agreements restrict OA publication to hybrid journals, whereas others include OA publication in both hybrid and gold journals.

Balance between read and publish fees

In the agreement between VSNU Netherlands and Oxford University Press, the read fee represents 88% of the cost. Similarly, in the agreement between Bibsam Sweden and Oxford University Press, the read fee represents 77% of the total cost (a figure based on the cost of the previous subscription licence), while the remaining 23% corresponds to the publish fee (a figure also based on previous APC expenditure).

In some cases, there is a nearly perfect balance between read and publish fees. This is the case of the agreement between EISZ Hungary and Wiley, which sets the read fee at 52% of the cost in the first year of the agreement, declining to 47% 3 years later. Similarly, the agreement between Unit Norway and Wiley has an initial read fee that represents 70% of the total cost but gets balanced (50%–50%) between read and OA publishing in hybrid and gold journals in the third and final year of the agreement. In this agreement, Wiley deducts the fees for the articles published by eligible authors from the APC fund, applying a 20% discount on the journal list price. The agreement between Bibsam Sweden and Wiley is also balanced until the fee covering OA publishing, in both hybrid and gold journals, reaches 59% of the total cost in the third and final year of the agreement. The agreement operates in a similar fashion, with Wiley deducting fees from the APC fund, in this case applying a 15% discount on the journal list price.

Finally, in other cases, the publish fee represents the largest share of the cost. As mentioned above, it is hard to draw a clear boundary between these contracts and fully transformative agreements. We have opted for classifying agreements that set a fixed number of OA articles for each year of the contract as partially transformative, while fully transformative agreements are those that allow unlimited publication of OA articles, sometimes setting a limited number of articles for the first year to calculate the initial cost. In the agreement between Unit Norway and Springer Nature, the read fee is stable throughout the 3 years of the agreement. The publish fee increases progressively, reaching 68% of the cost for the final year of the contract. In that year, the agreement provides for the publication of 654 articles in hybrid journals at an APC rate of 2,381 euros. Similarly, in the FinELib Finland agreement with Springer Nature, the publish fee for the final year represents 80% of the cost. This agreement allows the publication of 779 articles in hybrid journals at an average APC of 2,289 euros. The agreement between Bibsam Sweden and Springer Nature includes nearly identical clauses, although the publish fee reaches 90% of the cost in its final year and provides for a 'publication corridor' between 1,605 and 1,774 articles. The APC is also set at 2,289 euros per article. Similarly, the VSNU Netherlands agreement with Springer Nature is divided into a publish fee (93% of the total cost) and a read fee (7%) for the final year of the contract. In this case, the agreement provides for the publication of 1,158 articles in hybrid journals at an APC rate of 2,340 euros. Finally, in the Springer Nature agreement with Jisc, the publish fee is 92% of the total cost with the remaining 8% corresponding to the read fee. The agreement provides for the publication of 5,127 articles in its final year at an APC rate of 2,340 euros.

In most agreements, the publish fee is calculated by multiplying a specific number of articles to be published OA by an average APC. Another option that makes sense for publishers with a large portfolio of journals charging diverse APC rates consists of building an APC fund and subtracting the corresponding APC as articles get published. In most cases, if the number of articles published in a given year is lower than the amount provided for in the agreement, the quota expires. For example, if an agreement grants the publication of 100 OA articles in a given year, but just 80 articles are published, the credit for the publication of the remaining 20 articles is lost and cannot be transferred to the following year.

OA publication in hybrid or in hybrid/gold journals

As mentioned above, certain agreements restrict OA publication to hybrid journals. This is the case, for example, of the Compact agreements signed by Springer Nature. Other agreements distinctly grant OA publication in hybrid and gold journals, such as the agreement between Unit Norway and Elsevier that provides for the publication of 1,850 articles per year 'in Gold Open Access and hybrid journal titles'.

Some agreements specify the number of articles to be published in hybrid and in gold journals. One such agreement is the

contract between CSIC Spain and Oxford University Press. In 2024, the final year of the agreement, 80% of the articles would be published in hybrid journals and the remaining 20% in gold journals. The 100 articles to be published OA in 2024 would represent around 86% of the output of the institution.

Fully transformative agreements

We define as fully transformative those agreements that cover unlimited OA publication of the whole scholarly output of the subscribing institution. In some cases, the agreement includes a read fee, while in other cases, it does not. As mentioned above, it is hard to mark a clear distinction between partially transformative agreements where most of the cost is assigned to the publish fee and fully transformative agreements that include a read fee.

This category includes the agreements signed by DEAL Germany with Springer Nature and Wiley. The former is described as 'publish and read' and covers the publication of the whole output of DEAL institutions. The cost for the initial year is calculated by setting an expected output of 9,500 articles at an APC rate of 2,750 euros (917 euros for non-research articles), making for a total amount of 26.1 million euros. In the following years, publication fees are calculated based on the actual number of articles published, although the APC expenditure varies within percentage limits set in the agreement. The agreement does not include any access fee, although there is a fee for 'journal archive collections'. Compared to all other Springer Nature agreements (which are classified as 'partially transformative'), in this case, there is not a number of articles to be published each year but just an initial figure that seems to have been established simply to calculate the cost.

DEAL Germany's agreement with Wiley is similar to the one with Springer Nature. Again, the initial cost is calculated by setting an expected output of 9,500 articles at an APC rate of 2,750 euros. In the following years, publication fees are calculated based on the actual number of articles published. In addition, the subscribers pay a 'consolidated access fee' of two million euros.

The agreements signed by Sage with Unit Norway and Bibsam Sweden grant unlimited publication in hybrid journals and a 20% discount for publication in gold journals, in addition to access to the publisher's journals. Meanwhile, the agreement between Bibsam Sweden and Elsevier grants OA publication of an unlimited number of articles in both hybrid and gold journals.

Numerous agreements signed by Jisc with learned societies and small- and medium-size publishers adopt this strategy and provide for the publication of an unlimited number of articles (Table 2). In some cases, such as the agreement with the Association for Computer Machinery, the contract provides for a decrease in access fees for institutions that wish to access content but do not publish.

IWA Publishing's agreement with the Universities of Delft and Wageningen provides for the publication of articles submitted by corresponding authors affiliated with both institutions in the 14 journals of the publisher, 3 of which are OA. Although the total cost of the agreement is not disclosed, it is based on half

the historic subscription cost plus half of the historic APC expenditure. The expected change in the annual article output is predicted based on the figures for the three preceding years.

Additional features of TAs

The option to publish an OA article in the framework of a TA depends on the affiliation of the corresponding author. Some agreements stipulate that publishers should make efforts to inform potential authors about the details of the arrangements. In turn, authors should identify themselves as possible beneficiaries, generally by using an institutional e-mail address when submitting their manuscripts. Subscribing institutions are usually requested to validate this information. Although some agreements mention the possibility of using ORCID for these purposes, the wording suggests that this is a desirable future improvement rather than a current course of action.

In addition to defining ‘eligible authors’, some TAs also list the types of ‘eligible articles’ that can be published OA under the agreement. Most agreements provide for the publication of original articles and reviews, but other types of articles may be excluded from the contract. For instance, the VSNU Netherlands agreement with Emerald does not include ‘brief communications’, ‘continuing education’, ‘case reports’, ‘letters to the editor’, or ‘invited letters’.

In managerial terms, publishers have a commitment to report to subscribers – usually on a monthly or quarterly basis – how many articles have been published, names of authors, affiliations, titles of articles and journals, DOIs, etc. If an agreement is based on an APC fund, the publisher must also inform the subscriber when the fund is due to run out. Frequently, the agreements also state that publishers should make efforts to upload metadata to Crossref and expose articles to discovery services.

One of the characteristics of a TA to be recognized as such is the fact that authors retain copyright, that is, full use and reuse rights of their work. Most agreements indicate that OA articles are published under a Creative Commons licence. The most common licences are Attribution 4.0 International (CC BY 4.0) and Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) granted by the American Chemical Society, Emerald, Springer Nature, and Taylor & Francis, to name a few publishers. Both licences allow sharing and adaptation of the material, although in the latter case, this cannot be for commercial purposes.

The right of authors to deposit a copy of a published article in a repository depends on the journal policy, the copyright transfer, or the licence under which the article has been published. Nevertheless, some agreements make specific provisions regarding the green OA route. For instance, the agreement between VSNU Netherlands and the American Chemical Society states that the publisher agrees ‘to the supply of the final published version of the article to a repository specified by the author’s funding agency’. The agreement between VSNU Netherlands and Emerald indicates that ‘there is a zero embargo policy across all journals to support Emerald’s Green Open Access policy’. In other cases, there is mention of a specific repository to which the

article is uploaded. The agreement between EISZ Hungary and the American Chemical Society indicates that ‘ACS will deposit the final version of record under a CC-BY license into the US Pub Med Central repository’ (Agreement 5 in annex, p. 22). Similarly, the agreement between VSNU Netherlands and Karger states that ‘the publisher will provide articles to PubMed Central’.

Finally, most agreements stipulate the editorial independence of the publishers and state that they are not obligated to publish an article submitted by an eligible author.

DISCUSSION

The transition from print to electronic journals has occurred in the background of two independent trends: big deals and OA. Although they began independently, they are now developing ‘hand-in-hand’ (LIBER, 2017). As a result, the negotiation of new licensing agreements has shifted its focus from cost containment towards the inclusion of clauses in favour of OA.

Since the publication of the Finch Report (2012), there is a consensus on the idea that the main barrier to reaching full OA is the management of a transition period that should introduce adjustments in the scholarly communication market to reach a ‘new normal’ where OA is the rule. TAs should be seen as part of this ‘intermediary phase on the way to a different scholarly publishing market – not as an endpoint’ (van Barneveld-Biesma *et al.*, 2020).

ESAC defines TAs as agreements that meet five criteria: they are temporary and transitional; authors retain copyright; they are transparent; they aim to constrain costs of scholarly communication and foster equity in scholarly publishing; and they govern service and workflow requirements for publishers to ensure that the needs of authors and administrators are addressed. To what extent do the agreements currently in the marketplace conform to these definitions?

TAs are temporary and transitional

TAs are designed for the transition period from journal subscription licences towards OA publication. In detailing the requirements for negotiating TAs, Jisc (2020b) insists that publishers must ‘demonstrate a commitment to an Open Access transition through the conversion of subscription expenditure to support immediate open access publication’. Actually, Plan S already imposes a deadline to the transition by setting 2024 as the last year that funding will be provided to support publication fees of journals covered by TAs. Afterwards, any agreements with hybrid journals will not be transformative under Plan S terms. Hinchliffe (2019) reminds us that, at that time, ‘the same contract might be listed as transformative by ESAC but considered not transformative by cOAlition S’.

Despite the diversity of TAs, their various features all suggest a progression towards OA. We use the term ‘pre-transformative’ here to describe licences that include an OA publication option in the form of discounts or vouchers. It is doubtful whether these agreements can be classified as ‘transformative’ since discounts

are also offered to institutions that do not sign TAs. Springer Nature, for instance, is an example of a publisher that uses both market approaches simultaneously. Its TA option is ‘Springer Compact’ – that is, the kind of agreement signed with DEAL or Jisc – whereas traditional subscribers are offered ‘Open Membership’ deals, which grant APC discounts. A second stage in the evolution towards OA is represented by those agreements that differentiate between a read fee and a publish fee. The gradual increase of the publish fee against the read fee suggests a progression towards fully transformative agreements, intended to cover OA publication of the complete scholarly output of the subscribing institution or consortium.

The diverse nature of TAs itself supports the conclusion that they are in a transitional period. Not only are there different types of agreements, but in each category, it is nearly impossible to find two identical contracts. Institutions negotiate different clauses with different publishers, and publishers offer different agreements to their customer portfolio. An additional difference between TAs lies in whether they restrict OA publication to hybrid journals or allow OA publication in both hybrid and gold journals. It is hard to identify a pattern that could explain this disparity as some publishers – such as Sage or Springer Nature – limit OA publication to their hybrid journals, whereas others – such as Elsevier – allow OA publication in hybrid and gold journals. TAs were created to address the issue of ‘double dipping’, and for this reason, there may have been a focus on hybrid journals. Since gold OA journals have already completed the transition period towards pure OA, they may have been excluded from TAs that are, by definition, transitional. However, if gold OA journals are excluded from TAs, authors, especially those who are not funded, will prioritize publication in hybrid journals whose APCs are covered by their institutions.

The lack of certainty about the transitoriness of TAs has given rise to criticism. Poynder (2018) claims that what he calls ‘OA big deals’ are fundamentally flawed since they will result in traditional publishers embedding themselves and their high prices in the OA world while pushing aside pure OA publishers such as Hindawi or PLOS. Similar arguments are behind a position paper published by a set of pure OA publishers, including Copernicus, JMIR, MDPI, Ubiquity Press, and Frontiers (2020), which asserts that, to be truly transformative, these agreements must include two conditions that are not currently met: ‘(1) guarantee the full transition to 100% OA within a defined, short timeframe and (2) guarantee that the process cannot be easily reversed or cancelled at the end of the contractual period’.

Some agreements make explicit, usually in their preamble, the intention of subscribers and publishers to pilot a new type of contract that should facilitate the transition towards OA. However, in order to guarantee this transitory nature, it would be useful to set measurable objectives to assess this progression towards OA within a specified temporal framework.

Authors retain copyright

All TAs in the sample allow authors to retain copyright. Most OA journals, whether gold or hybrid, publish articles under Creative

Commons licences. This issue does not seem to raise much concern since TAs do not have an impact on the publishers’ workflow. However, authors may opt out of retaining copyright (Gutknecht, 2020). TAs should guarantee copyright retention by authors, and subscriber institutions should consider the advisability of centrally defining the type of licence for all articles published under the agreement.

TAs must be transparent

A requirement for a TA to be recognized as such is that its content be disclosed. However, as shown in Table 1, the full text for only 37 of the 77 active agreements listed in ESAC was available at the time of data collection. It is possible, however, that the content of some agreements has been disclosed at a later stage. In some consortium agreements, the distribution of payments among individual institutions is crossed out, but the total cost is always visible. The number of agreements whose content is made public represents an important step forward compared to the traditional secrecy of journal subscription licences, but it is necessary that TAs be systematically open and accessible.

TAs must constrain the costs of scholarly communication

It is hard to determine whether TAs are cost neutral, that is, not adding costs to previous investments in scholarly communication. Although the costs of TAs have been disclosed, it is not known how much institutions were previously paying for journal licences, let alone APCs.

In recent years, two elements have increased the amounts that institutions invest in scholarly communication: annual increases in the cost of journals, constantly above the inflation rate, and the introduction of APCs. If the expression ‘cost neutral’ excludes APCs, there is little evidence that TAs are constraining costs. In fact, it is quite possible that some institutions are signing TAs to ensure a contained increase in APC rates in the short term. There is evidence of APC hyperinflation, with publication fees increasing at a rate three times higher than what would be expected according to inflation (Khoo, 2019).

The addition of APCs to their expenditures is a source of tension for many libraries. Even if the cost of subscription licences declines, it will be challenging for libraries to cover this additional cost because APCs have, until now, been paid mostly with researchers’ grants. A possible solution to this problem is to partner with authors in paying publication fees. At the University of California, the library contributes 1,000 dollars per article, and grant-funded authors are requested to pay the remaining portion of the APC. The library covers the APC in full for unfunded authors (University of California, 2020).

Tennant (2019) points out that, despite their apparent benefits, TAs mean that a lot of public resources continue to be paid to private companies in exchange for publishing. If commercial publishers are making profits at around one-third of their income, this means that one-third of the 24–26 million euros paid by

DEAL for German TAs are going directly to publishers' profits. In the long term, this may lead to more tensions as there are already studies warning of APC hyperinflation that call to mind the serials crisis in subscription prices. Similarly, Crotty (2019) believes that the APC model for OA is 'an evolutionary dead end' since it improves access for readers but shifts the inequity of the system onto authors. Further studies by subscribing institutions will be necessary to determine to what extent TAs contain costs compared to current expenditure on journal licences and APCs.

TAs should address the needs of authors and administrators

TAs have an impact on how libraries work with researchers and publishers to transition towards OA. In order to facilitate workflows, most agreements detail how eligible authors are identified and verified. It is probably too early to determine the amount of resources necessary to implement the everyday routines associated with TAs, including invoicing and reporting. According to the assessment of their offset agreements produced by Jisc (Lawson, 2019), administration costs are hard to calculate but appear to make up less than 1% of the total cost of publishing. Most TAs foresee that publishers will provide monthly or quarterly reports to their subscribers with detailed information about the number of articles published, their authors, APCs, etc. In the medium term, it may be necessary to normalize how publishers provide this information to libraries in a manner similar to how Project COUNTER standardized the provision of usage statistics of electronic resources in library settings.

Based on its experience, the Vienna University Library has already reviewed the benefits and pitfalls of various systems in place and has warned that 'trying to build an OA workflow by adjusting current subscription-based methods will not yield satisfactory results' (Pinhasi, Blechl, Kromp, & Schubert, 2018). Schönfelder (2020) has suggested the need for a new kind of TA since the current models have 'unfavorable features regarding coordination costs, disruptive workflow adjustments, and timing'. Finally, Machovec (2020) has reviewed a variety of tools to track authors and APCs and provide underlying analytics.

CONCLUSION

Negotiations between libraries and publishers have shifted their focus from cost containment towards the inclusion of OA clauses. Despite the diversity of TAs in the marketplace, contracts are increasingly transparent, allow authors to retain copyright, and make provisions to facilitate OA workflows. However, it is hard to assess whether they only represent a temporary phase in the path towards OA or will perpetuate the current state of affairs in the scholarly communication market with its associated high costs.

The big deal model was based on 'previous expenditure' in print subscriptions. The concept was clearly inadequate because the cost of digital acquisitions was calculated based on the size

of print collections. This gave rise to substantial differences in digital subscription prices for institutions with different previous print collections. However, it has been impossible to change this pricing model because no one wants to pay more if that is what a new model entails. Something similar may be happening with TAs. Earney (2018) has highlighted the need to define an 'acceptable offsetting agreement', particularly in relation to aspects that demonstrate it is supporting the transition to OA. This should mean 'the reduction of the 'reading' element of an agreement and ultimately, the removal of historical expenditure as the basis of pricing for journal agreements'.

The landscape of scholarly communication is characterized by increasing costs and limited access to research output. It is doubtful whether TAs are helping to solve the cost problem, although they may represent a step forward in removing access restrictions on scholarly information. The main concern lies in its supposed transitoriness. Although TAs should establish a time horizon for the transition towards OA, there are serious doubts about whether they are actually doing so. As long as this requirement is met, TAs can make a substantial contribution to changing the scholarly communication model from journal licence subscription towards OA.

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Appendix: Disclosed TAs available in the ESAC registry on 25 April 2020

1. FinELib Finland – Springer Nature
www.kansalliskirjasto.fi/extra/finelib_julkinen/Springer_Compact/FinELib_Springer_Compact_final_redacted
2. Projekt DEAL Germany – Springer Nature
<https://doi.org/10.17617/2.3174351>
3. Projekt DEAL Germany – Wiley:
<https://doi.org/10.17617/2.3027595>
4. EISZ Hungary – Akadémiai Kiadó:
http://eisz.mtak.hu/images/szerzodesek/Akademiai_Kiado_Folyoiratcsomag_2019.pdf
5. EISZ Hungary – American Chemical Society:
http://eisz.mtak.hu/images/szerzodesek/ACS_2019-2021.pdf
6. EISZ Hungary – Elsevier:
http://eisz.mtak.hu/images/szerzodesek/sciencedirect_2019-2021.pdf
7. EISZ Hungary – Wiley:
http://eisz.mtak.hu/images/szerzodesek/Wiley_2019.pdf
8. VSNU Netherlands – American Chemical Society:
www.openaccess.nl/sites/www.openaccess.nl/files/documenten/acs20172021_geredigeerd.pdf
9. VSNU Netherlands – Emerald:
www.openaccess.nl/sites/www.openaccess.nl/files/documenten/emerald20192020.pdf
10. Delft and Wageningen – IWA Publishing:
https://d1r1kab7tlqy5f1.cloudfront.net/Library/Themaportalen/Library%20voor%20wetenschappers/Publiceren%20en%20verspreiden/IWA%20Publishing%20TU%20Delft%20Wageningen%20-%20RPA%20Agreement%20Public_Redacted.pdf
11. VSNU Netherlands – Karger:
www.openaccess.nl/sites/www.openaccess.nl/files/documenten/karger20192021_geredigeerd.pdf
12. VSNU Netherlands – Oxford University Press:
www.openaccess.nl/sites/www.openaccess.nl/files/documenten/oxford20192020_geredigeerd.pdf
13. VSNU Netherlands – Royal Society of Chemistry:
www.openaccess.nl/sites/www.openaccess.nl/files/documenten/surfmarket-rsc_2019-2020_-_fully_signed_geredigeerd.pdf
14. VSNU Netherlands – Springer Nature:
www.openaccess.nl/sites/www.openaccess.nl/files/documenten/springer2018-2021_signed2.pdf
15. VSNU Netherlands – Taylor & Francis
www.openaccess.nl/sites/www.openaccess.nl/files/documenten/tandf2018-2020_signed_surf_tandf.pdf
16. Unit Norway – Elsevier
www.openaccess.no/elsevier-lisensavtale-2019-2020-offentlig.pdf
17. Unit Norway – Sage:
www.openaccess.no/unitsage_2020_contract.pdf
18. Unit Norway – Springer Nature:
www.openaccess.no/2020-springer-compact-license-signed.pdf
19. Unit Norway – Wiley
www.openaccess.no/license-2019-2021-signed-unit-and-wiley.pdf
20. CSIC Spain – Oxford University Press
<https://bit.ly/2Ud637S>
21. Bibsam Sweden – Elsevier
www.kb.se/download/18.a9bd5bf1707b0801cd15e/1582893792629/Bibsam-Elsevier-2020-2022-tobepublished-titlelistexcluded.pdf
22. Bibsam Sweden – Oxford University Press
www.kb.se/download/18.a9bd5bf1707b0801cde04/158411131511/OUP-Bibsam-2019-2021.pdf
23. Bibsam Sweden – Sage
www.kb.se/download/18.a9bd5bf1707b0801cd1b33/1585818676649/Bibsam-Sage%202020-2022-agreement-ESAC.pdf
24. Bibsam Sweden – Springer Nature
www.kb.se/download/18.d0e4d5b16cd18f600e590/1568121108829/Bibsam-SN_Compact_2019-2%2021_tobepublished.pdf
25. Bibsam Sweden – Taylor & Francis
www.kb.se/download/18.d0e4d5b16cd18f600e933/1568987654667/TF-Bibsam_2018-2020.pdf
26. Bibsam Sweden – Wiley
www.kb.se/download/18.a9bd5bf1707b0801cd1773/1585309803913/Bibsam-Wiley_2020-2022-ESAC.pdf
27. Jisc United Kingdom – Rockefeller University Press
www.jisc-collections.ac.uk/Files/Jisc%20Collections%20RUP%20Journals%202020-2022-%20for%20publication.docx
28. Jisc United Kingdom – Karger
www.jisc-collections.ac.uk/Files/Karger_SHEDL_lic_2020_2022.docx
29. Jisc United Kingdom – Association for Computer Machinery
www.jisc-collections.ac.uk/Files/ACM_Open_licence_2020_22.docx
30. Jisc United Kingdom – Company of Biologists
www.jisc-collections.ac.uk/Files/Jisc%20Collections%20COB%20Journals%20Agreement%20for%20website.docx
31. Jisc United Kingdom – European Respiratory Society
www.jisc-collections.ac.uk/Files/Jisc%20Collections%20ERS%20ERJ%20Agreement%20for%20website.docx
32. Jisc United Kingdom – IOP Publishing
www.jisc-collections.ac.uk/Files/IOPscience_lic_2020_23.docx
33. Jisc United Kingdom – IWA Publishing
www.jisc-collections.ac.uk/Files/Jisc%20Collections%20IWAP%20Journals%20Agreement%20for%20website.docx
34. Jisc United Kingdom – Microbiology Society
www.jisc-collections.ac.uk/Files/Jisc%20Collections%20Microbiology%20Society%20Journals%20for%20publishing.docx
35. Jisc United Kingdom – Portland Press
www.jisc-collections.ac.uk/Files/Jisc%20Collections%20Portland%20Press%20Journals%20agreement%20for%20website.docx
36. Jisc United Kingdom – Springer Nature
www.jisc-collections.ac.uk/Files/Jisc%20Collections%20Springer%20Compact%20Dec%202021%20FINAL%20ESAC.docx
37. California Digital Library – Association for Computer Machinery
<https://ucsf.app.box.com/s/aavnp0dc2n83dmjh2u99kjl060h3zyr0>