Cancelling with the world's largest scholarly publisher: lessons from the Swedish experience of having no access to Elsevier

This article covers the consequences of the decision of the Bibsam consortium to cancel its journal licence agreement with Elsevier, the world’s largest scholarly publisher, in 2018. First, we report on how the cancellation affected Swedish researchers. Second, we describe other consequences of the cancellation. Finally, we report on lessons for the future. In short, there was no consensus among researchers on how the cancellation affected them or whether the cancellation was positive or negative for them. Just over half (54%) of the 4,221 researchers who responded to a survey indicated that the cancellation had harmed their work, whereas 37% indicated that it had not. Almost half (48%) of the researchers had a negative view of the cancellation, whereas 38% had a positive view. The cancellation highlighted the ongoing work at research libraries to facilitate the transition to an open access publishing system to more stakeholders in academia than before. It also showed that Swedish vice-chancellors were prepared to suspend subscriptions with a publisher that could not accommodate the needs and requirements of open science. Finally, the cancellation resulted in the signing of a transformative agreement which started on 1 January 2020. If it had not been for the cancellation, the reaching of such an agreement would have been unlikely.

Keywords
Open access; cancellation; Elsevier; Sweden; Bibsam consortium; negotiations

Background
In order to take steps towards the goal of immediate open access (OA) and achieve a sustainable price model, the Swedish library consortium, Bibsam, decided not to renew its journal licence agreement with Elsevier in 2018. Following this decision, the agreement was cancelled on 30 June 2018.

Alongside other comparable countries, the Swedish government has set the goal of achieving full and immediate OA for scholarly publications by 2020. During 2019 the National Library of Sweden co-ordinated five national studies in pursuit of this goal. These
studies, which included recommendations and a summarizing report, were communicated to the Swedish Ministry of Research and Education in March 2019. Included were 16 recommendations to support researchers in the transition to OA. One study specifically focused on the funding for transitioning from a subscription-based to an OA publishing system, including the identification of the need for improved cost transparency and cost awareness within the scientific community. The costs associated with scholarly publishing should be continuously monitored, analysed and communicated throughout academia in a transparent manner to enable pressure to be applied to individual publishers, as well as with a view to limiting the total cost of publishing.

Administered by the National Library of Sweden, Bibsam negotiates licence deals on behalf of Swedish higher education institutions (HEIs), government agencies and research institutes. As one means of achieving OA, Bibsam negotiates licence agreements with the aim of transforming the scholarly publishing system. Under these agreements, the organizations within the consortium accept certain costs of publishing OA (usually paid by individual researchers, with help from research funders or their organizations) on condition that the organizations’ subscription cost goes down and that an increasing share of the Swedish articles become OA within the publisher’s portfolio. The aim is to increase the share of OA articles within the system and make OA publishing the standard procedure for research dissemination. The requirements in the negotiations with Elsevier were:

- immediate OA to all articles published in Elsevier journals by researchers affiliated to participating Swedish organizations
- reading access for participating organizations to all articles in Elsevier’s 1,900 journals
- a sustainable price model that enables a transition to OA.

Between 2014 and 2017 Bibsam’s Elsevier agreement had an annual price increase of 3.75%. Concurrently, the cost of Swedish OA publishing with Elsevier had seen an increase of 135% between 2014 and 2018. In 2018 the cost amounted to €1,400,000 (or SEK13,600,000). When combining costs for reading and OA publishing, the final price model offered by Elsevier was unsustainable for the Swedish organizations concerned (see Figure 1). The price model allowed OA publishing of only a limited amount of the expected Swedish research article output in Elsevier journals. The licence fee would continue to increase during the term and the discount on publishing fees that was offered would gradually decrease. Swedish organizations would thus have faced increasing costs for both reading and publishing.

Elsevier represents the largest publisher agreement that Bibsam negotiates, in terms of both cost and usage. In 2017 the agreement represented 35% of the consortium’s turnover and approximately 37% of the total number of downloads that could be attributed to Elsevier at the Swedish organizations. It was therefore to be expected that the cancellation would not
go unnoticed by Swedish researchers. Another expectation was that some areas of research would feel the impact of cancellation sooner than others, due to research area differences in publishing and OA cultures.\(^7\) For instance, researchers in mathematics and physical sciences tend to publish shorter articles and cite newer and less diverse references than researchers in the social sciences and humanities.\(^8\)

Given the potentially disruptive impact of cancellation on Swedish researchers, the Bibsam steering committee approached the association of Swedish HEIs (SUHF) to see how much support there would be from the Swedish vice-chancellors for a cancellation. The vice-chancellors’ support meant that the decision to cancel was made.

What did the cancellation include?

Licence agreements that granted access to the following journal portfolios were cancelled:

- ScienceDirect Freedom Collection (2,281 titles and four *Lancet* titles usually not included in Freedom Collection)
- titles outside the Freedom Collection (67 titles, mostly society titles)
- Cell Press (14 titles).\(^9\)

The cancellation meant that Swedish researchers no longer had access to newly published material from Elsevier as of 1 July 2018. The previous agreement included a post-termination access (PTA) clause. Most organizations bought PTA to Elsevier’s Freedom Collection via ScienceDirect at an administrative cost (€0.06 per download). This secured researchers' access to articles published between 1995 and 30 June 2018 and thus mitigated the negative effects of the cancellation.

Aim of this evaluation

How has the lack of access to journals from Elsevier, the world’s largest scholarly publisher, affected Swedish researchers? Based on an evaluation conducted at the request of the steering committee of Bibsam, this article outlines the impacts.

The decision of Swedish organizations to cancel their agreement with Elsevier in the spring of 2018 is the first of its kind in Sweden and second in the world, preceded only by the cancellation in Germany in 2016. This evaluation is unique in that it is a first investigation into how a big deal cancellation affected the Swedish research community. The research questions were:

- What were the consequences of the cancellation for researchers?
- What did the cancellation achieve?
- What were the lessons learned from this cancellation process and how to apply these in future negotiations?

Methods

Sample and data collection

Seven months into cancellation, researchers at the 29 HEIs and the 15 government agencies that had an agreement with Elsevier at the time of cancellation received an open link survey.\(^{10}\) Library staff helped distribute the survey within their organizations using e-mail, social media, web pages, etc.

In total, 42,000 researchers potentially felt the effects of the cancellation. This figure includes 36,000 researchers and teaching staff and 6,000 employees at government agencies. Only 24,000 of the researchers and teaching staff had a doctoral degree and in reality, only a fraction of the government agency employees use the service they have access to, which is why 42,000 is an overestimate.
Responding to the survey were 4,221 researchers (3,588 researchers/research students, 295 users at government agencies and 211 students). This means that at least 10% of the estimated population responded. All research areas were represented in the sample.

From each organization, e-resource managers at the libraries provided article delivery data covering the time before and after cancellation.

Data analysis

The survey results are mainly reported as percentages, but some statistical inference tests were conducted. A linear regression analysis was carried out to test the hypothesis that how one’s work was affected by the cancellation (‘How has the cancellation of the Elsevier agreement affected your research/work/studies?’) could predict how one felt about the cancellation (‘To conclude, what is your stance on the cancellation of the Elsevier agreement?’). To test the hypothesis that research areas would differ in how the cancellation impacted them, two analyses of variance (ANOVAs) were conducted. Researchers in different research areas (health science and social care; medicine and dental surgery; engineering; natural sciences; law and social sciences; humanities and theology) were expected to differ in 1) how affected they had been in their research/work/studies and 2) their overall stance on the cancellation.

In addition, there was the compilation of the data on article delivery services. Twenty of the 29 HEIs provided data on inter-library loans. Nineteen HEIs provided data on an alternative access service. Nine of them had the service in question before cancellation and ten more signed up after cancellation. We performed dependent t-tests to test the hypothesis that there would be an increase in the number of article deliveries when comparing before and after cancellation.

We collected and analysed more data than is reported here. For findings on how the cancellation has affected researchers, the participating organizations and the Bibsam consortium as a whole, the full report may be consulted. A third of the respondents left free-text responses to the question ‘Is there anything you would like to add?’ These responses were subject to a more in-depth qualitative analysis.

Results

How did the cancellation affect Swedish researchers?

The majority of the respondents (81%) had lacked access to at least one article since the cancellation, compared with 15% who had not lacked access (see Figure 2).

Figure 2. The proportion of researchers that stated not having missed access or missed access to 1–5, 6–10 or 11 or more articles published by Elsevier since cancellation (n = 4,221). 4% declined to answer or did not know or remember if articles were published by Elsevier
Library staff communicated the cancellation within their organizations, but no doubt many researchers were made aware of the cancellation when attempting to access articles, by a pop-up message installed by Elsevier.

Researchers’ strategies for coping with the cancellation, their seemingly altered behaviours and researchers’ overall stance on the cancellation are reported in the following section.

**Strategies for coping**

When denied access (n = 3,574), researchers sought access elsewhere online, resulting in 42% finding access to at least one missing article online. The same number (42%) gave up their search at least once. When researchers retrieved access to articles online, the main sources mentioned were ResearchGate (26%) and Sci-Hub (14%). Researchers also sought access through their library, an author or a colleague. Among the respondents, 23%, 22% and 22%, respectively, had gained access through each of these means at least once. The free-text responses corroborated that researchers prefer online access to articles and that they sought articles from their library, the author or a colleague to a lesser extent. Researchers mainly consulted libraries, authors or colleagues only when an article was deemed particularly important.

Data on article delivery services supported the impression that researchers are reluctant to use their library services. Nine months into cancellation, there were no increases in inter-library loans or article deliveries, when comparing the data per month from before and after cancellation (for the organizations that had such services before cancellation). However, some large HEIs signed up to article delivery services after cancellation and the total number of articles ordered has since increased. In March 2019 (nine months into cancellation) the estimated spend on alternative access was approximately €26,000 per month. In September 2019 (15 months into cancellation), the estimated spend was €40,000 per month. Some research-intensive institutions carried a larger proportion of this cost. Alternative access can in no way replace or compare to a licence agreement, but as a point of reference, the cost of alternative access represented only a small percentage of the money spent on subscriptions with Elsevier in the previous agreement (over €1,000,000 per month in 2017).

**Altered behaviours**

To learn whether the cancellation had any impact on researcher behaviours, we asked researchers if the cancellation had affected their will to publish, do peer review or editorial work for Elsevier. Before cancellation, 60% had published, 44% had peer reviewed, and 4% had done editorial work for Elsevier. The cancellation had a negative or a very negative effect on researchers’ will to publish (51%), peer review (44%) and do editorial work (41%) for Elsevier. (See Figure 3.) Publishing was the least likely activity for researchers to continue to perform, despite having been relevant to a large number of researchers before cancellation and despite being stated by many to be central to career development. Some free-text responses indicated that the risk of not being read by one’s Swedish peers was one contributing factor to not wanting to publish with Elsevier.
A large number of respondents indicated that they did not know or could not say when asked if the cancellation had affected their will to associate with Elsevier. This may have been due to the incorrect wording of the questions. Some had stopped their association with Elsevier a long time ago as a matter of principle (referring to ‘predatory practices’ or the online initiative ‘the cost of knowledge’, where researchers can publicly renounce collaboration with Elsevier). Some had stopped peer reviewing for Elsevier after learning about the cancellation. Some had since stopped publishing with Elsevier altogether. Some had willingly chosen other publishing channels or paid for OA publishing with Elsevier, whereas others had felt forced to publish elsewhere or to pay for OA publishing with Elsevier. A number of respondents wondered if there were particular guidelines for them to follow concerning Elsevier, seeking advice regarding whether they should end their work with Elsevier to reinforce the effects of the cancellation.

**Stance on the agreement**

Finally, respondents were asked if the cancellation had affected their research, work or studies and what their stance on the cancellation was. A majority (54%) stated that the cancellation had affected their work negatively: (39% ‘negatively’ and 15% ‘very negatively’). On the other hand, 37% stated that it had not affected their work. (See Figure 4.)
The researchers did not agree on whether they felt negative or positive about the cancellation (see Figure 5). Almost half of the respondents (48%) were generally negative (32% ‘negative’ and 16% ‘somewhat negative’) towards the cancellation. Against this, 38% were generally positive (23% ‘positive’ and 15% ‘somewhat positive’), with 14% not taking a particular stance.

A simple linear regression analysis revealed a strong and direct relationship between how respondents were affected by the cancellation and what their stance on the cancellation was (right-tailed, \( F(1,3486) = 2765.15, p < 0.05 \)). This meant that 44% (\( R^2 = 0.44 \)) of the variance in the respondents' stance on the cancellation was explained by how cancellation had affected their work. Although not tested here, there is room for other variables to add explanatory value to the model. One's general stance on OA is, of course, one such likely variable.

**Differences in research areas**

Two analyses were conducted to determine whether there were systematic differences in how researchers in different research areas 1) thought the cancellation had affected their research/work/studies, and 2) what their general attitude towards the cancellation was.

With respect to the question about how the cancellation affected a researcher’s research/work/studies (see Figure 6), there were systematic differences in how researchers within different research areas perceived the effect of the cancellation on them (\( F(6,3765) = 26.11, p < .01, \eta^2 = .039 \)). Researchers who were active within health science and social care (\( M = 2.1; SD = 0.8; n = 226 \)) and medicine and dental surgery (\( M = 2.1; SD = 0.7; n = 1,017 \)) had the perception that their work suffered more than those who were active within other research areas. Researchers who were active within natural sciences (\( M = 2.4; SD = 0.8; n = 1,188 \)), law and social sciences (\( M = 2.4; SD = 0.8; n = 569 \)) and engineering (\( M = 2.3; SD = 0.8; n = 641 \)) had the perception that their research/work/studies were affected to an equal extent. Researchers who were active within humanities and theology (\( M = 2.6; SD = 0.8; n = 124 \)) were those who indicated that the cancellation had the least negative effect on their research/work/studies. (Options for answering the question ranged from 1 to 5, where 1 was ‘very negative’ and 5 was ‘very positive’.)

![Figure 5. Researchers’ stance on the cancellation of the Elsevier agreement (n = 4,221)](image)

‘Researchers … within health science and social care … and medicine and dental surgery … had the perception that their work suffered more’
Research areas also differed in the analysis of researchers’ general attitude towards the cancellation ($F(6,3526) = 28.45, p < .001, \eta_p^2 = .039$). (See Figure 7.) Researchers within health science and social care ($M = 2.1; SD = 0.8, n = 213$) had the most negative attitude towards the cancellation and differed significantly from the other research areas, apart from medicine and dental surgery ($M = 2.1; SD = 0.7; n = 970$). Researchers within engineering ($M = 2.3; SD = 0.8; n = 600$) did not differ from researchers within natural sciences ($M = 2.4; SD = 0.8; n = 1,118$), law and social sciences ($M = 2.4; SD = 0.8; n = 510$) and medicine and dental surgery, but significantly from those within humanities and theology ($M = 2.6; SD = 0.8; n = 116$) (and health science and social care, as mentioned above). Those with the least negative attitude towards the cancellation were researchers within natural sciences, law and social sciences and humanities and theology, whose researchers did not differ in their attitude towards the cancellation. (Options for answering the question varied from 1 to 4, where 1 was ‘negative’ and 4 was ‘positive’.)

What did cancellation achieve?

In November 2019, 17 months into cancellation, the negotiating team at Bibsam reached an agreement with Elsevier and presented it to the participating organizations of the consortium. The new agreement comprised:
• unlimited OA publishing in Elsevier hybrid and fully gold titles, society journals and fully gold Cell Press titles

• a unique pilot centred around OA publishing of 100 articles per year in Cell Press hybrid journals, which covers the entire consortium’s publication output in these journals

• reading rights to the Science Direct Freedom Collection (approximately 2,000 journals) from 1995, and as an additional option Cell Press (14 journals)

• publishing with a CC BY licence (or another open licence, according to the author’s wishes).  

The publication output under this agreement is expected to be approximately 3,800 articles per year.

In Figure 8, the cost of the new agreement offered (orange line) is compared to the previous agreement, had it been renewed, both without (blue line) and with the inclusion of APCs (red line). In 2022 the proposal will achieve an estimated reduction of costs of €1,700,000, as compared to an unsigned agreement.

Conclusions

The decision of Bibsam to cancel its agreement with Elsevier was a unique event in the history of the consortium’s relationship with publishers. It shows that Swedish HEIs were ready to take a stand and suspend their subscription with a publisher that could not accommodate the needs and requirements of open science. This is a leap forward in the advancement of OA in Sweden. It shows that OA is discussed not only as a matter of policy but that in reality negative consequences – such as a temporary disruption in access – are deemed an acceptable price to pay for an OA publishing system.
No consensus among researchers

The cancellation was a wake-up call for many researchers at the 29 HEIs and 15 government agencies affected by the cancellation, which had affected a large part of the Swedish research community seven months into cancellation. Among the respondents, 54% reported that they were negatively affected, while 37% had not been affected. When asked to take a stance on the cancellation, 48% opposed it and 38% were in favour of it. The decision to cancel has already had an immediate negative impact on the researchers in certain research areas, while it will have a more delayed impact on the researchers in others. Researchers within health science and social care and medicine and dental surgery were affected most directly and negatively by the cancellation, whereas the consequences were less pronounced within humanities and theology. Some respondents did comment that seven months was too short a period to assess the true consequences of the cancellation.

Those negatively affected by cancellation also tended to be negative towards the cancellation itself. Although not tested here, it is plausible that one’s opinions of OA would moderate the relationship between how one’s work is affected by cancellation and one’s overall stance on the cancellation. The qualitative analysis of this survey indicated that this was the case. Free-text responses often contained both sympathy with the principles behind cancellation and depictions of the negative effects of not having access. Ambivalence of this sort was detected in 26% of the free-text responses.

A fairly large portion of the respondents (14%) responded ‘Don’t know, can’t say’, when asked if cancellation was overall positive or negative. One plausible reason for not being able to take a stance is the complexity of the costs and the terms associated with publisher agreements in the current publishing system. Not to mention the usage data, the publication data, the funding streams and different routes to OA for scholarly publications that need to be taken into account when assessing the value of an agreement and how it fits into the overall strategic picture.

Renewed and expanded OA discussion

The cancellation has forced a discussion on OA on many levels in academia. The concrete impact of the cancellation effectively communicated Bibsam’s work towards a transition to an OA publishing system and the unsustainable costs associated with Elsevier to more stakeholders in academia than ever before.

The main effect was of course for researchers. This was the first time Swedish researchers on a large scale had to suffer the consequences of a behind-paywall publishing system. The cancellation inevitably both gained their attention and stirred them into reacting. Many researchers took the opportunity to make their opinion heard by responding to the survey sent out, as well as contacting the consortium directly. It is reputedly difficult to convey information from research libraries to researchers but in a sense, the cancellation opened up a channel of communication.

As a side effect, the cancellation also revealed that the communication between the vice-chancellor and the library director varied in nature between organizations. Libraries have usually been OA champions and drivers of OA in the HEIs. Increased communication between libraries and the vice-chancellors will enable a more efficient transition to OA. This may be seen as something positive, since a joint and more visible stance on OA provides a better opportunity to communicate the organization’s strategic direction to the researchers.

Factors hindering the transition to OA

First, OA is in many ways at odds with the current merit system. Senior researchers have invested in the merit system and indeed have built their careers on it. While some senior researchers may feel accomplished enough that they can finally allow themselves not to
conform to the current system, junior researchers still feel the need to comply with it in order to secure a future career. Therefore, while often seen as a greater good, OA is not always in the immediate interest of the individual researcher.

Second, the data necessary to evaluate the costs and benefits of an OA scholarly publishing system compared to the current system is inaccessible. At the national level, there is a relative lack of overview of overall costs and funding streams associated with scholarly publishing. The National Library of Sweden was commissioned to start drafting the total costs of scholarly publishing (i.e. costs of OA publishing, subscriptions and administrative work related to scholarly publishing) only in 2018. Furthermore, a country’s scientific output, its publication data, is somewhat difficult to determine. Where published articles have authors from more than one country, it is not always possible to determine which country ultimately paid the APC. This complicates estimates of the number of published research articles from any one country and leads to difficulties when agreements that cover OA publishing are to be negotiated. For instance, the oversize in the first Swedish Springer Compact agreement stemmed from a lack of reliable publication data. In agreements that include costs of OA publishing, the publication data is defined and made available in ways it was not before.

Agreements that include the costs of OA publishing are on the rise. To that end, reliable data on publications are crucial, not only for informed requirements in negotiations but in order to assess price models. The lack of transparency in publication data and overall publishing costs hinders researchers from evaluating publisher services as well as the work of their libraries and library consortia. Substantial parts of researchers’ external funding are spent on financing university overhead costs and they naturally expect library access to scholarly publications in return. The situation where researchers use services without the knowledge of costs helps maintain the behind-paywall publishing system. Were publisher services and their associated costs made easily accessible to researchers, more might be accepting or understanding of disruptions in access. Some might even consider other publishing channels based on the information.

Lessons for the future

What made cancellation possible?

According to the Bibsam steering committee, two factors were crucial for the decision to cancel. First, the PTA clause, which secured most organizations access to material published from 1995 and up until cancellation. Second, the support from vice-chancellors in SUHF, both as confirmation of their approval and as possible channels to communicate and anchor the cancellation within Swedish HEIs. The chair of the Bibsam steering committee is a well-connected OA champion. Her additional positions as chair of SUHF and of the group for OA to scholarly publications at the National Library has facilitated the communication between some of the institutions key to advancing OA in Sweden.

Was the cancellation effective?

In the Swedish experience, a cancellation was crucial in finally arriving at an agreement that Bibsam’s steering committee was willing to present to the participating organizations. Sweden is a relatively small actor with a limited economic impact on Elsevier, but the cancellation did give important advantage to negotiations. It is highly unlikely that Elsevier would have offered an improved agreement without cancellation. Therefore, in the Swedish experience, the cancellation was effective.
The impact of the cancellation helped direct researchers’ attention to OA and how it is discussed in negotiations with publishers in new ways. The researchers taking part in the evaluation did not agree on the severity of the consequences of the cancellation or whether cancellation is ultimately positive or negative. This is not a surprise given the heterogeneity present in the research community. From certain researcher perspectives, the lack of access was unacceptable. However, the cancellation showed that many were able to cope without Elsevier for a limited period. From a national point of view, limited periods of inaccessibility might be necessary to leverage for an OA future. The cancelling of an agreement is seen as a last resort since the main objective of research libraries is to provide their researchers with the access they need. This evaluation shows, however, that cancellation is an option when other roads are closed.

Data accessibility statement
The survey and its corresponding data are made available here:

Lisa Olsson, Camilla Hertil Lindelöw, Lovisa Österlund, and Frida Jakobsson. “Surveys Swedish Elsevier Cancellation”. figshare, January 31, 2019. https://doi.org/10.6084/m9.figshare.7654952.v1

Olsson, Lisa. “Survey Data – Researcher Responses”. figshare, January 31, 2020. https://doi.org/10.6084/m9.figshare.11777475.v1

Abbreviations and Acronyms
A list of the abbreviations and acronyms used in this and other Insights articles can be accessed here – click on the URL below and then select the ‘full list of industry A&As’ link: http://www.uksg.org/publications#aa

Competing Interests
The authors have declared no competing interests.

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