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“Like a litmus test, the quest for Open Access reveals an architecture of control on the wane. ... In short, Open Access is a wonderful observation platform to study how an old architecture of control unravels and a new one emerges.” – *Jean-Claude Guéron, 2008, in “Essay in response to Peter Suber’s ‘The Opening of Science and Scholarship’”*

“One can see, therefore, that what started out as an infrastructure for *supporting* academic activity is increasingly *imposing* its own ‘system logic’ on this work, thus creating perverse incentives that run the risk of distorting the very point and purpose of academic activity.” – *Gert Biesta, 2012, in “Knowledge/democracy: Notes on the political economy of academic publishing” [emphasis in original]*

“The idea of the new shows a basic bivalence, which makes the concept fascinating and mysterious: In order to be recognized and appreciated, a novelty must have some familiar (old) aspects. The new supersedes the old, but at the same time preserves it. Therefore novelty is always ambiguous and flexible, and its evaluation as positive or negative changes with time and with the observer.” – *Elena Esposito, 2014, in “Plans and the Future: Designing the Unpredictable”*

“Where STS has been particularly good is deconstructing fallacies and fantasies of control.” – *Andy Stirling’s comment at the EASST 2018 conference in Lancaster, UK*

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Abbreviations

ANT	Actor-Network Theory
AO	General parliamentary consultation (<i>algemeen overleg</i> , in Dutch)
APC	Article Processing / Publishing Charge
BOAI	Budapest Open Access Initiative
CC	Creative Commons
COVID-19	Coronavirus Disease 2019
CRIS	Current Research Information System
CSCW	Computer Supported Cooperative Work
CWTS	Centre for Science and Technology Studies (<i>Centrum voor Wetenschaps- en Technologie Studies</i> , in Dutch) at Leiden University, the Netherlands
DOAJ	Directory of Open Access Journals
EC	European Commission
EU	European Union
EUA	European University Association
ICT	Information and Communication Technology
IPO	Initial Public Offering
JIF	Journal Impact Factor
KNAW	Royal Netherlands Academy of Arts and Sciences (<i>Koninklijke Nederlandse Akademie van Wetenschappen</i> , in Dutch)
LERU	League of European Research Universities
LIS	Library and Information Science
MPDL	Max Planck Digital Library
MPG	Max Planck Society (<i>Max-Planck-Gesellschaft</i> , in German)
NFU	The Netherlands Federation of University Medical Centres (<i>Nederlandse Federatie van Universitair Medische Centra</i> , in Dutch)
NTNU	Norwegian University of Science and Technology (<i>Norges teknisk-naturvitenskapelige universitet</i> , in Norwegian)
NWO	Dutch Research Council (<i>Nederlandse Organisatie voor Wetenschappelijk Onderzoek</i> , in Dutch)
OA	Open Access
OeAD	Austrian Agency for Education and Internationalisation (<i>Österreichischer Austauschdienst</i> , in German)
OCW	Ministry for Education, Culture and Science in the Netherlands (<i>Ministerie van Onderwijs, Cultuur en Wetenschap</i> , in Dutch)

OCSDNet	Open and Collaborative Science in Development Network
OPP	Obligatory Passage Point
OPR	Open Peer Review
PhD	Doctor of Philosophy
PLOS	Public Library of Science
ROAC	Radical Open Access Collective
SSH	Social Sciences and Humanities
STS	Science and Technology Studies
STM	Science, Technology, and Medicine
SURF	Higher education and research co-operative for ICT in the Netherlands
UAS	Universities of Applied Sciences
UKB	Consortium of university libraries and the National library of the Netherlands (<i>Nederlandse Universiteitsbibliotheken en Koninklijke Bibliotheek</i> , in Dutch)
VSNU	Association of Cooperating Universities in the Netherlands (<i>Vereniging van Samenwerkende Nederlandse Universiteiten</i> , in Dutch)
WOB	Government Information (Public Access) Act (<i>Wet Openbaarheid Bestuur</i> , in Dutch)

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1. Introduction – On choosing Open Access as a research topic

At the beginning of this millennium, a vision was proposed for the free and unrestricted worldwide availability of peer-reviewed academic literature. Building on an old tradition of scholarship – to publish the fruits of research for the sake of inquiry and knowledge – and combining it with a new technology – the internet – it was hoped to create “an unprecedented public good” (BOAI, 2002). Because the electronic distribution of this literature was said to incur far lower costs than the traditional forms of disseminating printed copies, it presented a promising opportunity for many organisations to save money, expand reach, and advance their research and educational missions at the same time (ibid.). Given that all prerequisites for implementing such a new academic publishing system were in place, the goal was then seen as “attainable and not merely preferable or utopian” (BOAI, 2002, n.p.; see also Šimukovič, 2016a, 2020a, 2020b).

Yet some two decades later, the concept and practice of “Open Access”, although with a remarkable record of achievements and proliferation, still appears to be far from fulfilling such initial hopes. As a contemporary topic that is high on many political agendas, it can be even described as a buzzword of the 21st century that is characterised by its future-orientation, inconsistency of meaning, and a certain crisis as its context of emergence (Bensaude Vincent, 2014). The understandings, manifestations, and politics of openness thus appear to be particularly timely subjects to be examined (Tkacz, 2012; Weller, 2014). These research interests will be at the core of my thesis.

Before proceeding with this task, and to help situate individual chapters in this thesis, I will first explain my motivation to study controversies around Open Access in academic publishing and the negotiations between the Association of Cooperating Universities in the Netherlands (*Vereniging van Samenwerkende Nederlandse Universiteiten (VSNU)*, in Dutch)¹ and the major scientific publisher Elsevier. Because of its pilot character, this particular dispute had considerable significance for the further course of developments in academic publishing and the scholarly communication landscape in the Netherlands and beyond. After that, I will outline the overall structure of the thesis and explain how the approach that I have chosen shall help with answering the research questions that I address herein.

1.1 Observing the career of an emerging concept

In December 2001, a small meeting of “leading proponents of open access for scientific and scholarly journal literature” was convened in the headquarters of the Open Society Institute (now Open Society Foundations) in the Hungarian capital, Budapest.² An outcome of this gathering was the declaration of the Budapest Open Access Initiative (BOAI), issued a few months later, and the

1 In November 2021, the VSNU changed its name to “Universities of the Netherlands” (*Universiteiten van Nederland*, in Dutch): https://www.universiteitenvannederland.nl/en_GB/history-of-the-vsnu.html [last checked on 26/06/2022]. Due to this recent change, and because all references in empirical materials were being made to “VSNU”, I will continue to use its old name.

2 See <https://www.budapestopenaccessinitiative.org/faq/> [last checked on 19/06/2022].

coining of the term “Open Access”, or, in short, OA. While one of the Frequently Asked Questions (FAQ) released with the initial BOAI in 2002 asked if “this [is] an Eastern European initiative?”, its goals and scope were pronouncedly global. By encouraging scholars and publishers to grant free online access to peer-reviewed research literature “that authors give to publishers and readers without asking for any kind of royalty or payment” – typically scientific journal articles – the BOAI anticipated stimulating profound changes. Among the consequences foreseen from this initiative, it was hoped “that younger scholars will enter the academy expecting open access as a matter of course, both for their own writings and the writings they wish to read for their research <...> that taxpayers will demand open access to research funded by the government”, and “that the beneficiaries of research, such as medical patients, will demand the removal of unnecessary and artificial barriers to research so that the contributions to knowledge freely donated by their authors will be freely available for use by researchers everywhere” (ibid.).

Moving away from a paper-based era with subscription paywalls that largely limited the accessibility of academic literature to its individual or institutional subscribers and their acknowledged affiliates – such as students and faculty at universities – arguably carried huge, nearly universal benefits. A certain sense of a unique historical opportunity was also perceptible in the introductory paragraph of the BOAI declaration:

“Removing access barriers to this literature will accelerate research, enrich education, share the learning of the rich with the poor and the poor with the rich, make this literature as useful as it can be, and lay the foundation for uniting humanity in a common intellectual conversation and quest for knowledge” (BOAI, 2002, n.p.).

In more practical terms, the BOAI looked for universities and research institutions to “create institutional archives for self-archiving and adopt policies encouraging faculty to make their preprints and refereed postprints freely accessible through them” (ibid.). As another approach for translating the BOAI’s vision into practice, it proposed “to launch a new generation of journals committed to open access, and to help existing journals that elect to make the transition to open access” (ibid.). These two main implementation routes, i.e. self-archiving of author manuscripts in institutional (or subject-related) repositories and publishing scholarly articles in fully Open Access journals, were positioned in the BOAI as “two complementary strategies” to achieve Open Access to scholarly journal literature and later became known as the “Green” and “Gold” roads to Open Access, respectively (Guédon, 2004, 2008a; Harnad et al., 2004; BOAI, 2012; Suber, 2012).

Since the original BOAI declaration was published two decades ago, the number of Open Access archives, journals, publications, and policies has been steadily rising (Laakso et al., 2011; Laakso & Björk, 2012; Frosio, 2014; Laakso, 2014; Kita et al., 2016; Piwowar et al., 2018; Hook et al., 2019; Pinfield et al., 2020). To mark the tenth anniversary, its initiators released an updated declaration with recommendations for the next decade (BOAI, 2012). While making “the transition from the present methods of dissemination [of scholarly literature] to open access” (BOAI, 2002, n.p.) has been a central idea for BOAI from its very inception, in the subsequent declaration a spatio-temporal dimension was added for where and when BOAI’s aims were to be achieved. In the

precise wording of “BOAI10”:

“In this statement, we reaffirm the ends and means of the original BOAI, and recommit ourselves to make progress. But in addition, we specifically set the new goal that *within the next ten years*, OA will become the default method for distributing new peer-reviewed research *in every field and country*” (BOAI, 2012, n.p.; emphases added).

Following the announcement of this goal, various research institutions and associations declared their support with a series of public statements, roadmaps, and action plans. For instance, in April 2013 members of Science Europe, a Brussels-based association representing European research funding and performing organisations, “unanimously endorsed and committed to a set of common principles on the transition to Open Access to research publications”.³ These principles involved “a move towards Open Access, replacing the present subscription system with other publication models whilst redirecting and reorganising the current resources accordingly” (Science Europe, 2015, p. 4). Likewise, the Global Research Council (GRC), an organisation comprising heads of science and engineering funding agencies, issued its “Action Plan towards Open Access to Publications” in May 2013 (GRC, 2013). While attesting to the potential of Open Access to be “instrumental for improving the quality and impact of research” (p. 1), it called for paying special attention to regional and individual circumstances in different parts of the world and searching for sensible solutions and business models to suit them. Similarly, the European University Association (EUA) agreed “to assist European universities in the transition to Open Access” during its Council meeting in October 2015 (EUA, 2016a, p. 2) and outlined a series of proposed actions such as monitoring ongoing negotiations with publishers and discussing “economically realistic and viable conceptions of the OA future” (ibid. p. 4).

Largely motivated by the public funding argument, i.e. to grant public access to results of publicly funded scholarly research, the idea of gradually shifting from conventional journal subscription model to “100% Open Access” has been further taken up in a number of European countries. Examples of such target-setting policies and guidelines at the national level include intentions to reach 60% of scientific publications available in Open Access by 2019 and 100% by 2024 in the Netherlands (OCW, 2014), 80% by 2020 and 100% by 2025 in Austria (Bauer et al., 2015), full Open Access to all scientific publications and artistic works by 2025 in Sweden (Vetenskapsrådet, 2015), and all publicly funded Norwegian research articles by 2024 (Norwegian Ministry of Education and Research, 2017). The political momentum for Open Access in Europe peaked in spring 2016, when, along with the publication of the “Open Innovation, Open Science, Open to the World” vision by the then-Commissioner for Research, Science and Innovation, Carlos Moedas (European Commission, 2016), “Open Access” and “Open Science” figured prominently among the priorities of the Council of the European Union (EU) under the Dutch Presidency in the first half of 2016 (Ministry of Foreign Affairs, 2016; The Netherlands EU Presidency, 2016).

One of the most notable resolutions presented by science policy-makers during the Dutch presidential term includes the “Amsterdam Call for Action on Open Science” (The Netherlands EU

3 See <https://www.scienceurope.org/our-priorities/open-access> [last checked on 02/10/2022].

Presidency, 2016). In an attempt to consolidate various national initiatives at a European level, it called for speeding up the transition to Open Access and formulated “a clear pan-European target: from 2020 all new publications are available through open access from the date of publication” (ibid., p. 30). Just a few weeks later, a crowning moment of the Dutch Open Access agenda was reached when the EU science ministers agreed to support a transition to immediate Open Access “as the default by 2020” in their Council conclusions (Council of the European Union, 2016, p. 8). In this way, the colourful potpourri of implementation strategies, national priorities, and target years was intended to align and settle on one clear goal (see also Šimukovič, 2020a).

Furthermore, in light of the Dutch Presidency of the EU Council in spring 2016, higher education institutions and their umbrella associations mobilised broad support for the Open Access agenda, too. For instance, the League of European Research Universities (LERU) launched an Open Access campaign and handed over almost 10,000 signatures to Commissioner Moedas and Dutch Secretary of State for Education, Culture and Science, Sander Dekker (LERU, 2016). Titled prominently as “Christmas is over. Research funding should go to research, not to publishers!”, it urged the European Commission and the Council Presidency “to bring sensible solutions to the fore” and “to ensure that this transition [to Open Access] happens” (LERU, 2015a, p. 1). The publishers themselves, in turn, were prompted “to enter a brave new world” of Open Access publishing – a call to which Carlos Moedas and Sander Dekker were said to have “immediately reacted in a positive way” (LERU, 2016, p. 1).

Almost simultaneously, another organisation was actively lobbying for a more rapid Open Access transition, albeit with a very particular understanding thereof in mind. In April 2015, staff of the Max Planck Digital Library (MPDL), part of the Max Planck Society with research institutes in Germany and beyond, published an influential white paper that allegedly made the case for “disrupting the subscription journals’ business model for the necessary large-scale transformation to open access” (Schimmer et al., 2015, p. 1). One of its widely promoted “insights” claimed that “there is currently already enough money in the system. A large-scale transformation from subscription to open access publishing is possible without added expense” (ibid., p. 7). As we shall learn in more detail later on, the arguments presented in this white paper not only served as a basis for the OA2020 initiative that was launched by the MPDL in March 2016 and aimed at “flipping” traditional or “paywalled” journals to novel Open Access business models by 2020,⁴ but they were also repeatedly echoed in subsequent negotiations in the Netherlands and beyond.

By the time that such high-level declarations were signed, Open Access had long become a popular but also a controversial topic. In 2012, a report of a working group chaired by Dame Janet Finch had already recommended to the British parliament that it set “a clear policy direction” and expand access to research publications via full Open Access or so-called “hybrid” journals that request Article Processing Charges (APCs) “as the main vehicle for the publication of research, especially when it is publicly funded” (Finch Group, 2012, p. 7). The recommendation to embark on a full-scale Open Access transition via these usually high-priced implementation routes, to the

4 See <https://oa2020.org/be-informed/> [last checked on 02/10/2022].

detriment of Green or other non-APC alternatives (Finch Group, 2012), has sparked contentious debates and strong critique from some Open Access advocates. Most notably, Stevan Harnad, a long-time proponent of self-archiving and “fair Gold” Open Access, called this report “a Trojan horse” that served publishing industry interests instead of United Kingdom’s (UK) research interests (Harnad, 2012). Indeed, Finch Group’s recommendations have been subsequently identified as a trigger that resulted in significant additional publishing costs for UK universities and research institutions (Pinfield et al., 2017; Eve & Gray, 2020).

From Harnad’s point of view, the preference for an APC-driven Gold Open Access transition as expressed by the Dutch State Secretary Sander Dekker (OCW, 2014) resembled “Dutch Echoes of Finch” group’s recommendations “to pay extra for gold OA instead of just mandating green OA” (Harnad, 2014, n.p.). Since in the Dutch case this transition pathway was said to amount to some 10.5 million euros extra to cover Open Access publishing fees, in addition to the 34 million euros already paid by academic libraries annually for journal subscriptions at that time, this would have constituted an impressive 30% cost increase borne by the public purse reserved for research budget (ibid.). With regard to such outspoken costly political ambitions, there was another characteristic feature that was seen as uniting both UK and the Netherlands. As Harnad (2014, n.p.) remarked, “such recommendations originate, not coincidentally, from the two countries with the heaviest concentration of the journal publishing industry, and hence the journal publishing industry lobby”. As I will demonstrate throughout this thesis and particularly the empirical case study, commercial publishing giants have indeed played a central role in such debates and national strategies.

Yet while the disputes surrounding related initiatives often revolved around the limitations of each implementation model as well as associated costs, major scientific publishers – often operating as multinational conglomerates of commercial, profit-seeking companies (Larivière et al., 2015; Fyfe et al., 2017; Aspesi et al., 2019) – have learned to live with the quest for more Open Access and to adjust their business strategies and rhetoric accordingly. Although changes in research and funding policies in favour of Open Access were initially perceived as substantial threats to the business models of established publishers (Aspesi et al., 2012), the same market analysts then had to revise their predictions soon afterwards (Aspesi et al., 2014). As noted by representatives of the International Association of Scientific, Technical and Medical (STM) publishers, a trade association that includes all the major commercial publishers such as Elsevier, Springer Nature, Sage, and Wiley,⁵ Open Access has been a dominant topic in the academic publishing industry for a number of years and “will continue to be one of the defining features of the next stage of STM publishing” (Ware & Mabe, 2015, p. 157). Along with such shifting perceptions, the public statements of this interest group have also markedly changed from being “once sceptical opponents of the [Open Access] concept” to stressing their value-adding role and the importance of collaboration (Annemark, 2017, n.p.). In the end, in light of the rising number of so-called “transformative agreements” with these very same publishing giants, as well as some other questionable developments, the latest BOAI declaration was noticeably imbued with mixed

5 See <https://www.stm-assoc.org/membership/our-members/> [last checked on 02/10/2022].

feelings and calls to reassess recent gains and losses against further ends that Open Access was initially supposed to achieve (BOAI, 2022; see also chapter 12. *Discussion and conclusions*).

It is against the backdrop of these events and often heated debates that I have chosen to examine the negotiations between the delegates of Dutch research universities and a major scientific publishing and analytics company, Elsevier, as an empirical case study in this thesis. As we shall learn in more detail later on (see especially chapter 6. *Introducing the Dutch Open Access odyssey*), the negotiations between VSNU and Elsevier were marked by several phases of “an impasse” (November 2014) and “a deadlock” (June 2015). After attempts to reconcile seemingly incompatible positions, the negotiations reportedly took “a constructive turn” (November 2015). Somewhat surprisingly then, an “agreement in principle” was announced shortly afterwards (December 2015), followed by the finalisation of terms and conditions of the first “Pilot Gold Open Access” agreement for 2016–2018 some months later (March 2016). Before continuing with outlining the overall structure of the thesis, on the next pages I will present some reflections on my motivation to analyse this particular empirical case.

1.2 VSNU-Elsevier negotiations as an exemplary empirical case

As its title suggests, the present dissertation is about cherishing hopes, attributing roles, and battling for a better (academic publishing) world. In this vein, one is likely to encounter a plethora of diverging and at times conflicting visions and convictions, emotional disputes, and personal struggles, as well as instances of ignorance and resistance. To better comprehend this rich empirical field and the interplay of forces involved in science and research, especially in light of established logics and incentive systems, I will draw on some intellectual resources provided by the broad and interdisciplinary field of Science and Technology Studies (STS).

In a report on science-society relations and their governance, Ulrike Felt and her STS colleagues of an Expert Group mandated by the European Commission developed a helpful notion of “master narratives” (Felt et al., 2007). As the authors put it, “master narratives serve simultaneously as prior framing, starting-point, justification, and mode of sense-making for the policy domain” (2007, p. 76). Most importantly, such narratives were said to fulfil normative and performative functions. According to Felt and colleagues (ibid., p. 74), “each narrative offers its own heroes, villains and victims, and its own lasting moral prescriptions for confronting other crises”. In other words, master narratives do not just describe a situation in purportedly objective terms, but they also normatively perform it by asserting how it is to be interpreted.

In this respect, Elsevier was a perfect *villain* to pick from. With roots in a small-sized Dutch publishing house that was established by Rotterdam bookseller Jacobus George Robbers in 1880, it has grown from just some ten employees in the 1930s and transformed itself into an international multi-billion-euro scientific information and analytics business that operates in more than 180 countries and employs 8,700 people (Van Leeuwen, 1980; Vinken, 1980; Fredriksson 2001; Andriessse, 2008; Daling, 2011; Regazzi 2015).⁶ It is routinely denounced for its staggering profit

6 The modern-day Elsevier is part of the RELX Group that is owned by RELX PLC as its sole parent

margins that can reach as high as 40%⁷, aggressive expansion strategies, and controversial business practices (see, e.g., Guédon, 2001; Knottnerus, 2009; Monbiot, 2011; Aspesi & Luong, 2014; Larivière et al., 2015; Fyfe et al., 2017; Herb, 2018; Posada & Chen, 2018; Aspesi et al., 2019; Chen & Chan, 2021). Because of the annual price increases of about 5% and intensive lobbying activities to defend its interests, Elsevier has developed an “adversarial relationship” with academic librarians and some researchers (Aspesi et al., 2019, p. 11). For the same reasons, it was long considered “an investor’s darling” (Buranyi, 2017). Through a variety of means including “a number of spectacular mergers or acquisitions”, Elsevier has heavily contributed to an accelerating concentration in scientific journal publishing market and “has acquired the dimensions of a behemoth” (Guédon, 2001, p. 24).

Such comparisons hardly appear exaggerated when consulting Elsevier’s own accounts. According to the annual report of Elsevier’s parent company (RELX Group, 2022, p. 20), it published over 600,000 articles in 2021, 89% more than a decade ago, and processed some 2.5 million article submissions in just one year. With regard to Open Access publications, the numbers were likewise impressive. As the business report continued: “Elsevier published over 119,000 open access articles in 2021, a year on year growth rate of over 46%. In 2021, Elsevier launched 105 new journals of which 95% were Gold open access, growing the Elsevier portfolio to over 600 Gold open access journals”, among over 2,700 journals in total (ibid.). That is, as already noted in some academic studies, Elsevier managed to become one of the largest Open Access publishers by volume (Morrison, 2017; Piwowar et al., 2018), with Open Access publishing and operating models arguably becoming a regular part of big publishing business (Annemark, 2017).⁸

Over the past couple of years, the publishing giant was furthermore observed to acquire and consolidate ever bigger and more comprehensive parts of “critical infrastructure” in scholarly communication and evaluation, which could potentially soon cover the entire research workflow (Aspesi et al., 2019; see also Herb, 2018; Posada & Chen, 2018; Chen & Chan, 2021). Its major products and solutions entail, among others, ScienceDirect (a discovery platform of peer-reviewed literature published by Elsevier), SciVal (a web-based analytics tool for visualising and benchmarking institutional research performance or identifying emerging research trends) and Scopus (a curated abstract and citation database with publications data from more than 5,000 publishers).⁹ Numerous services currently provided by Elsevier were initially purchased from (or with) other smaller companies and subsequently integrated into its business portfolio. These

company, with shares being primarily traded on the London Stock Exchange (RELX Group, 2022). See also: About Elsevier <https://www.elsevier.com/about> [last checked on 27/06/2022].

7 According to the latest annual report and financial statements, the Scientific, Technical & Medical segment which entails scholarly journal publishing was responsible for 2,649 million GBP in revenue and generated 1,001 million GBP or ca. 37.8% as adjusted operating profit in 2021 (RELX Group, 2022, p. 7).

8 I would like to thank Enrique Corredera for our recurring discussions on this topic and his help with interpreting the Swedish-language thesis by Magnus Annemark (2017).

9 See <https://www.elsevier.com/solutions> [last checked on 27/06/2022].

include, for instance, Pure (a current research information system (CRIS) for reporting and evaluating research activities that is now being used by more than 300 institutions in some 50 countries), acquired in 2012; Mendeley, a reference management, research data sharing, and scholarly collaboration platform acquired in 2013; the Social Science Research Network (SSRN), an online repository for sharing preprints (author manuscripts) from economics and related fields, acquired in 2016; as well as bepress, a scholarly communications platform that used to provide repository software to academic libraries for showcasing their institutional publications, acquired in 2017.¹⁰ Because all of these services were founded by academic researchers and previously favoured among Open Access advocates, their “cooptation” by Elsevier has stirred up particularly heated debates.¹¹

What is more, Elsevier’s pronouncedly self-assertive appearance and restrictive publishing policies have at times provoked dedicated boycotts from researchers and administrators at academic institutions. Among much-noticed examples, some might recall the “Cost of Knowledge” campaign that was triggered by mathematician and Fields Medal winner Timothy Gowers in early 2012, which has gathered more than 20,000 signatures since from researchers who have publicly declined to publish, referee, and/or do editorial work in journals published by Elsevier.¹² Quite tellingly, in their “Statement of Purpose”, the initiators of the protest regarded Elsevier’s business practices as “an exemplar of everything that is wrong with the current system of commercial publication of mathematics journals” (The Cost of Knowledge, 2012, p. 4). In light of a series of political uprisings in the Middle East and North Africa against authoritarian regimes that took place at that time and were collectively referred to as the “Arab Spring”, the Cost of Knowledge campaign was even compared to “the Academic Spring” following this namesake (Anderson, 2012; Brienza, 2012; The Economist, 2012; see also Larivière et al., 2015; Heyman et al., 2016).

In connection with such protests, the researchers were occasionally joined by university libraries which threatened to terminate ongoing negotiations or indeed cancelled their subscription agreements (Larivière et al., 2015). But there were also a number of stand-offs and cancellations in light of stalled negotiations over incorporating Open Access publishing options into regular subscription contracts in particular (Projekt DEAL, 2017; Khoo, 2019; Olsson et al., 2020a; Olsson et al., 2020b). In addition, entire editorial boards sometimes resigned from academic journals

10 See press releases from Elsevier announcing these acquisitions at <https://www.relx.com/media/press-releases/archive/15-08-2012>, <https://www.elsevier.com/about/press-releases/archive/corporate/elsevier-acquires-mendeley,-an-innovative,-cloud-based-research-management-and-social-collaboration-platform>, <https://www.elsevier.com/about/press-releases/corporate/elsevier-acquires-the-social-science-research-network-ssrn,-the-leading-social-science-and-humanities-repository-and-online-community> and <https://www.elsevier.com/about/press-releases/corporate/elsevier-acquires-bepress,-a-leading-service-provider-used-by-academic-institutions-to-showcase-their-research> [last checked on 27/06/2022].

11 For an overview of related discussions, see posts at The Scholarly Kitchen, an official blog of the Society for Scholarly Publishing: <https://scholarlykitchen.sspnet.org/2013/04/08/a-matter-of-perspective-elsevier-acquires-mendeley-or-mendeley-sells-itself-to-elsevier/>, <https://scholarlykitchen.sspnet.org/2016/05/17/elsevier-acquires-ssrn/> and <https://scholarlykitchen.sspnet.org/2017/08/02/elsevier-acquires-bepress/> [last checked on 27/06/2022].

12 See <http://thecostofknowledge.com/> [last checked on 27/06/2022].

published on their behalf by Elsevier over disagreements about their ownership rights and future development trajectories, as well as after failed attempts to revise contractual terms towards more favourable conditions.¹³ What catches one's eye, moreover, is that Elsevier's own lawyers and other representatives were often eager to file lawsuits against competing endeavours themselves, such as the popular academic social network ResearchGate or the shadow library Sci-Hub, and to influence related legislation (see also chapter 5. *Framing the story*).

With regard to legal arguments, a formal complaint to the European Ombudsman was submitted in 2018 following an announcement that Elsevier was subcontracted to develop the Open Science Monitor for the European Commission as part of its public procurement procedures (Tennant, 2018). At the core of the concerns raised by the complainants was an inherent conflict of interests: that "Elsevier are now in a position where they will be monitoring and evaluating the very same science communication (e.g., products, licenses, database access) that they, and their competitors, sell as their primary products" (ibid., n.p.). By awarding this tender to a consortium of the Lisbon Council for Economic Competitiveness and Social Renewal, the ESADE Business & Law School, and the Centre for Science and Technology Studies (CWTS) at Leiden University as well as Elsevier as their sole subcontractor, signatories of the complaint identified major issues. These comprised "a detrimental impact on the future of Open Science and innovation in Europe, the livelihoods of European citizens, and the legitimacy of the European Commission (EC) as an institute" (ibid.).

The authors of the complaint were further concerned about the massive presence of lobbyists within EC from Elsevier's parent company RELX and the STM association of the scientific publishing industry, with a number of persons who are accredited for direct access to the European Parliament premises (ibid.).¹⁴ It is indeed notable that copyright framework, the Directive on Copyright in the Digital Single Market, Open Science, and research data are named at the top of the list of main EU legislative proposals or policies targeted by RELX.¹⁵ Hence, as several authors have summed up, "by carefully mapping the transition from print to online, by offering [an] outstanding product, and by exploiting aggressive pricing, Elsevier has become the *bête noire* of the academic world" that has substantially contributed to the marginalisation of smaller publishers and the scientific knowledge disseminated by them (Pannekoek et al., 2007, p. 1; emphasis in original).

13 See an overview of resignations of scholarly journal editors "in order to launch a comparable journal with a friendlier publisher or less-restrictive access policies", including a dozen journals that moved from Elsevier as listed at http://oad.simmons.edu/oadwiki/Journal_declarations_of_independence [last checked on 27/06/2022].

14 More details are available via public entries in the Transparency Register, a tool used by the European Parliament, the Council of the European Union, and the European Commission "to allow European citizens to see what interests are being represented at the Union level and on whose behalf, as well as the financial and human resources dedicated to these activities" at <https://ec.europa.eu/transparencyregister/public/homePage.do> [last checked on 02/07/2022].

15 See <https://ec.europa.eu/transparencyregister/public/consultation/displaylobbyist.do?id=338398611148-62> [last checked on 02/07/2022].

Large-scale Open Access negotiations between Elsevier and universities' representatives in the Netherlands thus appeared as a particularly intriguing case to examine in more detail in this thesis. Not only did the Dutch capital Amsterdam serve as a home base for the company's headquarters, and so benefited from the taxes paid by Elsevier to its public purse, but local universities and other research institutions themselves also seemed to be faithful customers of the publishing giant. To illustrate their close business relationships, it is telling enough to note that fully 12 out of 14 research universities in the Netherlands rely on the Pure system sold by Elsevier to record and showcase publications and other contributions by their affiliated researchers.¹⁶

Returning to the typical functionalities of master narratives (Felt et al., 2007), there was also an apparent *hero* in the Dutch Open Access story – an ingenious politician with an ambitious plan to finally bring about an Open Access transition as well as huge personal aspirations. While domestic university libraries have been actively supporting Open Access aims with various projects and initiatives since at least 2002, the catalyst for more decisive negotiations with major commercial publishers was the letter “Open access to publications” (VSNU, 2016b; Heijne & Van Wezenbeek, 2018). Sent from the Ministry for Education, Culture and Science (*Ministerie van Onderwijs, Cultuur en Wetenschap* (OCW), in Dutch) to the Lower House of the Dutch parliament in November 2013, this letter was signed by the Secretary of State at the time, Sander Dekker (OCW, 2014). In it, he set a goal for the Netherlands “to have switched entirely to the golden road to open access within ten years, in other words by 2024” (ibid., n.p.).¹⁷

However, the objective to build up “a regulated system of open access” was not limited to the Dutch jurisdiction alone (OCW, 2014, n. p.). As explained in the letter, by creating “a new business case based on open access publishing”, the Netherlands was expected to play “a pioneering role”, that would make it “an interesting test case for other countries” to follow suit (ibid). In order to establish this new business case, it had to be addressed as “a cross-border matter”, for which Sander Dekker's counterparts in other countries were invited “to join me [Dekker] in considering how best to put an international system of open access into place” (ibid). For this purpose, he prompted all “stakeholders” to intensify their cooperation and promised to scale up Dutch efforts from the national to a broad international, or at least European, level. Importantly, Dekker further declared that shortening the Open Access transition period was his personal matter: “I will dedicate myself to speeding up the open access process internationally as well, in cooperation with a number of prominent and like-minded countries” (ibid). Consulting with several ostensibly “like-minded” countries, mostly located in Western and Northern Europe, thus has been indicated as one of the main measures for achieving the set goal.

To implement an Open Access transition as envisioned in Dekker's letter, the VSNU has taken up the mandate of the Dutch government and focused on negotiating tailored agreements with eight major scientific publishers (VSNU, 2016b; see also chapter 6. *Overview of key events*). While a “deal”

16 See list of Pure clients by region at <https://www.elsevier.com/solutions/pure/pure-in-action> [last checked on 15/10/2022].

17 All quotes used here derive from the English translation of the letter published in January 2014.

with the publishing company Springer was reached in just a few months and greeted “enthusiastically” by State Secretary Dekker as “an important step in the right direction” (VSNU, 2014d, n.p.), it took more than one and a half years longer with several breaks and considerations of “boycotting one of the world’s largest scientific publishers” until a partial agreement between the Dutch universities and Elsevier was signed in late 2015 (VSNU, 2016b, p. 10–11).

The controversy between the two parties continued to attract international attention for its potential to reconfigure “the relationship between the research community and the world’s largest academic publisher” and was even expected to become “a significant game changer” in the academic publishing world (Kingsley, 2015, n.p.). In light of some previous attempts to reach more favourable concessions from Elsevier, representatives of VSNU claimed to be more successful by preserving their principled stance as one of the key elements of what they dubbed “the Dutch approach” (VSNU, 2016b, p. 12–13). By their own account, “where Research Libraries UK came no further than a compromise during similar negotiations with Elsevier in 2011, the VSNU negotiators got what they set out to achieve as a result of their steadfastness” (VSNU, 2016b, p. 13).

Whether it could be measured as a success or not, the agreement that was reached between VSNU and Elsevier for the years 2016 to 2018 was widely seen at the time as creating a precedent case for incorporating Open Access publishing options into subscription bundles with major scientific publishers. Most notably, changes in negotiation principles, as first tested by the VSNU at this scale, were increasingly applied in negotiations by library consortia elsewhere, too. For instance, the “Springer Compact” contract that was signed between Springer and the Austrian Academic Library Consortium (KEMÖ) in September 2015, and the combined “reading and open access publishing in one annual fee” (Springer, 2015, n.p.), was even compared to “a replica” of an earlier agreement in the Netherlands.¹⁸ Moreover, with growing interest and experience in this field, negotiating teams from numerous European universities and academic libraries reportedly came to “share tactics” and “struck similar deals” with major academic publishers, spreading an “Open-access drive” in Europe (Else, 2018a, p. 479). Additionally, the resolutions passed during the Dutch Presidency of the EU Council were explicitly referenced in other national Open Access strategies, showing the strong influence of initiatives originating from the Netherlands on science policy-making in numerous locations elsewhere.¹⁹

Last, next to the (self-)proclaimed heroes and villains, master narratives used in policy domains often comprise the group of alleged *victims* (Felt et al., 2007). As can be observed in the Dutch Open Access negotiations, various actors were discursively framed to be at a massive disadvantage due to the imperfections of the prevailing journal subscription system. Both in Dekker’s letter and VSNU’s materials, academic libraries were said to repeatedly face untenable

18 See <https://www.openaccess.nl/en/events/follow-up-for-dutch-springer-deal-in-austria> [last checked on 12/10/2022].

19 See, for example, the Swiss National Strategy on Open Access that was adopted in January 2017 and bears numerous similarities with the principles listed under “the Dutch approach” (VSNU, 2016). Available online at: https://www.swissuniversities.ch/fileadmin/swissuniversities/Dokumente/Hochschulpolitik/Open_Access/Open_Access_strategy_final_e.pdf [last checked on 12/10/2022].

pricing crises, researchers to suffer from limited access to the latest scholarly literature, and broader society was viewed as being deprived of the fruits of research that they had paid for with their taxes (OCW, 2014; VSNU, 2016b, 2017, 2018a). Yet as I will argue throughout this thesis, resorting to such a typical attribution of roles and to knee-jerk associations would be a grave oversimplification of the complex state of affairs when sorting out individual actors and their objectives. This shall not be interpreted as an attempt to repair, say, Elsevier's ill fame or polish its image. But an uncritical mobilisation of such explanatory frameworks in Open Access battles would prevent one from delving deeper into various interests and more systemic issues, and from analytically exploring their multi-faceted entanglements.

While I will return to the issue of *complicities* in the final discussion chapter, in the next sub-chapter I will outline the dissertation's introductory, theoretical, methodological, and empirical parts. This preview shall help with situating individual chapters and understanding my rationale for this ordering. As I will explain in more detail later on, Grounded Theory approaches have been instrumental in this respect. I have therefore interposed a dedicated chapter on working with Grounded Theory between more conventional chapters that present core elements of my research approach and theoretical framing. Such interlocked thinking and writing will noticeably permeate the whole thesis, whenever I synthesise theoretical insights and empirical details, or constantly move "back and forth" between them (Charmaz, 2006). To conclude the thesis, I will return to the metaphors used in the title and link my research findings with the lessons learned from infrastructure studies and some broader developments in the academic publishing realm as distilled from the pre-history of Open Access negotiations.

1.3 Outline of the thesis

After explaining my motivation for choosing the topic of Open Access publishing as well as examining a particular dispute in the Netherlands as an empirical case study, here I will provide a brief outline of the following chapters. In Chapter 2, I present my *Research approach*, which includes the main *Research questions* along with the *Materials and methods* that I rely on in order to answer them. Since I have come to blend various types of knowledge and experience from Library and Information Science (LIS) and STS, one of the sub-chapters is dedicated to a commentary on *Combining backgrounds* from these two different fields. Given that the issues that I address are highly relevant to LIS practitioners and regular scholars alike, yet have received only very limited attention from researchers in STS, I then elaborate on why this cross-disciplinary combination has been most fruitful in my own case as a researcher-practitioner at the junction of both areas.

Following this, in Chapter 3 I elucidate my take on *Working with Grounded Theory as a "theory/methods package" and its methodological-epistemological implications*. This includes sub-chapters with reflections on *Grounded Theory and Situational Analysis* in general as well as on *Conceptualising a case study, or "constructing the field"* more specifically. Because adopting these approaches implies a self-reflexive standpoint and sensitivity towards one's own active role when doing research, I deemed it necessary and helpful at the same time to explicitly articulate the challenges that I have faced and how I have dealt with them. This has contributed greatly to my

own heightened awareness of what it means to conduct an attentive situational analysis and to immerse oneself in its open-ended and often surprising nature.

Afterwards, in Chapter 4, I offer more details on the *Theoretical framing* of the thesis. Here, I first present my way of *Thinking with, about, and against infrastructures*. Starting from the common list of salient features that typically characterise infrastructures (Star & Ruhleder, 1996), I then move to a discussion of particularities in information and knowledge infrastructures. This task is largely illuminated by more recent insights from related ethnographic studies (Karasti & Blomberg, 2018) and especially the notion of “re-infrastructuring” as a specific occasion of infrastructuring activities (Grisot & Vassilakopoulou, 2017). Subsequently, *Seeing through the (re-)infrastructuring lens* is devoted to applying these tenets to the analysis of my empirical materials and providing a working definition for studying the academic publishing system as a socio-technical infrastructure.

Following such theoretical considerations, in Chapter 5 I sketch out a couple of important turning points in the pre-history of Open Access publishing, ahead of more recent negotiations in the Netherlands. This chapter serves the purpose of *Framing the story* and situating my own research results in a broader historical (academic publishing) landscape. Here, I begin with taking a closer look at the *Shifting plates in academic (publishing) landscapes* that prepared the ground for Open Access. Then, I look back at how the concept of “Open Access” was brought into being, or how a new (metaphorical) baby was born and given a name, when *Defining Open Access and its many (sub-)species*. In light of such bifurcations or even partially conflicting trajectories from early on, I conclude this section with a short commentary on what I have termed *The Open Access Multiple*.

Starting from Chapter 6, the empirical case study takes centre stage. In this chapter, I focus on *Introducing the Dutch Open Access odyssey* and present an overview of key events. It includes detailing main messages entailed in Dekker’s letter, tactic adjustments on the universities’ side when setting up the negotiation stage, as well as their deliberations “to pull the plug” or to risk a no-deal situation. Then, I summarise *key features of the resulting VSNU-Elsevier agreement* that was described by some organisations as a “modest Open Access Christmas deal” (LERU, 2015b). This brief synopsis is largely built on public statements and press releases from involved parties and thus reflects the front-stage version of the negotiations between them. Including this summary of main episodes in the story at hand, where the letter signed by the secretary of state marks the chronological starting point for the empirical case study in this thesis, will facilitate the move to a more comprehensive, conceptually guided analysis in the next step.

In Chapter 7, in turn, I proceed with examining the instrumental role of this letter in *Building up momentum for the Dutch Open Access transition* and zoom in on the micro-dynamics that it triggered shortly before and soon after it was published. In contrast to the initial reading of Dekker’s letter as presented in the previous chapter, here I delve deeper into studying its contents with the help of a theoretical backdrop and explore the processes of the making of the letter. For this purpose, I incorporate personal testimonials from an interviewee who was involved in writing the letter for state secretary Dekker. In the sub-chapters that follow, I take the readers on a brief literary excursion to St. Brieuc Bay in northwestern France. During this *intermezzo*, we will learn

about the attempts of three marine biologists to develop a conservation strategy for a domestic species of scallops. The scallop story shall illustrate the basic principles of the “sociology of translation” (Callon, 1986), after which I show how this analytical lens can be applied to my own empirical case. Discerned by Callon as *problematization*, *interessement*, *enrolment*, and *mobilisation* (ibid.), the four moments of translation in the Dutch Open Access transition plan are elaborated. After adopting and adapting the lessons learned from the sociology of translation, this chapter concludes with a short interim discussion on *What is not being problematised* in the letter by Sander Dekker and its interpretations.

Following an experimental juxtaposition between the fate of scallops in St. Brieuc Bay and the attempts to intensify the multiplication and valorisation of scientific knowledge through Open Access, as pursued by Dekker’s letter, I continue with the next episode of the Dutch Open Access odyssey. Here, I explore the steps taken by members of both negotiation teams when *Crafting the VSNU-Elsevier deal for 2016–2018*. Drawing on the notion of “re-infrastructuring” as proposed by Miria Grisot and Polyxeni Vassilakopoulou (2017), in Chapter 8 I analyse how the negotiators of the resulting agreement engaged in *re-infrastructuring “openness”*. This step includes moving from translation mechanisms by which Dutch science policy-makers attempted to implement their own objectives and mobilise action, along with the provisions made in Dekker’s letter, towards specific design concerns that had to be solved at the negotiation table. Here, I specifically focus on the gaming tactics employed on both sides as well as shed light on the emotional dimension and personal involvements of each negotiation team member. This chapter is rounded out with *Describing the VSNU-Elsevier deal* from an additional conceptual angle by taking up the notion of “scripts” and “technical objects” as developed by Madeleine Akrich (1992). Finally, I conclude with an interim discussion on the spread and alleged success of so-called “transformative agreements” and some of their (un-)intended consequences under the title *Lost in translation, stuck in transition?*.

Then, Chapter 9 deals with *Infrastructural anomalies and moments of breakdown*. While in the previous empirical chapters I mostly analyse the tactics and perspectives of science policy-makers and negotiation team members, or – collectively – *designers* of the VSNU-Elsevier agreement, here I turn to the perceptions of researchers in the Netherlands as actual *users* (or non-users) thereof. Methodologically, here I identify four key tension areas that have repeatedly come to the surface in my interviews with the latter group. These include: 1) *Urgency to act vs. no need for government intervention*; 2) *Usefulness vs. uselessness of Open Access*; 3) *Advancement of science vs. individual careers*; and 4) *Ideals of openness vs. drawing boundaries*. As I shall demonstrate in this chapter, determining perceived dilemmas with the aid of such opposite poles is a helpful initial step and a way to structure emergent observations. Yet staying within the logic of binary either-or choices would fall short of capturing all the more important issues that are kept unspoken or taken for granted. To enhance such considerations, I have prepended a conceptual-methodological note for my proposition to triangulate not only methods but also viewpoints. I close this chapter with another interim discussion titled *What if, what else, what for?*, where I address some further remaining blind spots and “discursive silences” (Clarke, 2005). Here, I borrow from Sally Wyatt’s (2003) examination of the discursive construction of the (non-)usage of technologies as well as Jutta

Haider's (2008) notion of "information poverty". In line with the principal aims of Grounded Theory (Charmaz, 2006), in this chapter I also present a number of my own analytical categories and conceptual innovations.

Further on, after approaching the relatively low uptake level of the VSNU-Elsevier agreement for 2016–2018 as a moment of breakdown, and investigating the tensions and dilemmas behind this outcome, I examine the invisible work of librarians as inconspicuous maintainers of the academic publishing infrastructure. For this purpose, Chapter 10 on *Inverting infrastructural relations* is built up in the following manner. First, I explain the idea of an "infrastructural inversion" (Bowker, 1994; Star & Bowker, 2006) and its analytical power to generate additional insights on the workings of a given infrastructure. In line with the arguments for triangulating viewpoints, I claim that the role and position of librarians is crucial for understanding the struggles in the quest for Open Access and examining several otherwise overlooked issues. To address the pressures that professionals in this area are facing, I showcase how the tasks of this particular actor group have started to shift *from infrastructuring Big Deals to re-infrastructuring Open Access publishing quotas*. I corroborate this observation by applying the social worlds theory and drawing a corresponding situational map (Clarke, 2005; Clarke & Star, 2008) as well as taking up additional twists from a related body of literature on maintenance and repair studies. To conclude this final empirical chapter, I then briefly discuss some *Paradoxes of (re-)infrastructuring in academic publishing* and ask *When is breakdown?*.

Following this, I complement the empirical case study by providing an *Epilogue* on the aftermath of the initial VSNU-Elsevier negotiations in Chapter 11. I deem it necessary to insert such an update or a postscript because of the considerably long time span between my conducting interviews with negotiation team members and researchers in the Netherlands in late 2016 and spring 2017, as well as gathering further empirical materials over a couple of the following years, and completing the thesis manuscript throughout 2021–2022. At the same time, it would be impossible to cover all such interesting subsequent developments. Therefore, in this chapter I focus on some selected events only that happened after the original case study period. I have chosen to highlight them either because I considered certain news reports as particularly relevant to my case study or because of their direct connection to the preceding agreement between VSNU and Elsevier. These include a series of resignations from the negotiation teams, numerous prolongations of the initial agreement, as well as the latest and highly controversial "Open Science Platform Products and Services Agreement" that Dutch research organisations entered into with Elsevier starting in January 2020, and which is valid until the end of 2024. Furthermore, here I sketch out another controversy around the so-called "Plan S" that was announced in September 2018. As I argue in this chapter, comparing markedly different reactions from the ranks of researchers to Sander Dekker's letter on the one hand, and to this later political intervention in academic publishing affairs on the other, is particularly telling for analysing the ensuing debates.

Last, in Chapter 12 I come to *Discussion and conclusions* where I summarise the major research findings from my extensive analyses. Here, I provide answers to my research questions and consider the lessons learned when answering them. For this purpose, I once again rely on the

insights gained from infrastructure studies as the main theoretical framework and conceptual scaffolding in this thesis. In particular, with regard to the (re-)infrastructuring lens, I discuss issues of inertia and betrayals in the proposed shift to full Open Access as well as some typical paradoxes that can be observed in attempts “to turn” the academic publishing infrastructure. In this concluding chapter, I further make an effort to interweave various analytical threads, and so to contribute to building explanatory theories as is ideally sought when choosing to work with Grounded Theory and Situational Analysis approaches. I close with some final remarks and suggestions for future work.

2. Research approach

In this chapter, I describe the main research questions that guide this thesis as well as the methods and empirical materials that I used to answer them. This is followed by a commentary on combining various disciplinary backgrounds and how this approach helped me to enrich my analyses and cross-fertilise different perspectives. I then introduce Grounded Theory and offer reflections on the performativity of the methods and my own positionality when doing this work.

2.1 Research questions

The birth and rise of Open Access from its first public declaration (BOAI, 2002) to a mainstream science policy topic over the last two decades allows for a number of intriguing research avenues and hypotheses. In this light, my ultimate interest with this thesis was to analyse how Open Access visions and implementation models have to fit into existing orders in science and the academic publishing system – or to develop new ones. Considering my research focus on the projected transition to full Open Access and its expected benefits, I seek to answer the following research questions:²⁰

How is the shift towards full Open Access re-ordering the academic publishing system?

This includes three associated sub-questions:

- What expectations towards science and academic publishing system are expressed through the shift to Open Access?
- How is Open Access imagined by different actors?
- How does the shift to Open Access affect actual publication practices?

The purpose of the first sub-question is to explore what kinds of deficiencies in the current mode of functioning in academic publishing – and science more generally – advocates of Open Access aim to address. It deals with identifying and examining frequently named features and (better) qualities that a full-scale shift to Open Access is supposed to achieve (such as to save costs to research institutions, academic libraries and funders, to enhance visibility and reusability of scientific publications, to democratise access to scientific knowledge for practitioners and

²⁰ My doctoral research proposal and initial research questions are available online (see Šimukovič, 2016a).

interested societal groups, to increase participation in knowledge production processes, and to help other scholars and students in less affluent parts of the world with granting them cost-free access to high-quality scholarly literature). Furthermore, I will look at how problems and solutions are defined and embedded into broader narratives on the place of science and scientific knowledge in contemporary societies. These range from a moral imperative to provide taxpayers with access to research results that they have paid for through tax contributions, to the ethos of science that relies on an open and diligent communication of research findings and an ultimate goal to serve the public good, to an economic imperative to increase return on investment and to benefit local research and development (R&D) industries.

The second sub-question explores how the notion of Open Access is understood, used, and negotiated by different actors. Although often referred to as a blanket term and a unified movement, the concepts and practices that are labelled Open Access are neither coherent nor homogeneous. Rather, their history and interpretations are marked by competing understandings that reflect a variety of issues at stake and personal convictions on how to best translate this idea(l) into practice. Therefore, a more fine-grained examination of the different meanings of openness and accessibility in academic publishing will include potential tensions or (dis)agreements between these various visions. Moreover, taking a closer look at the arguments used in favour or against a particular implementation model, especially with regard to the so-called Green or Golden routes to Open Access, reveals a specific set of values and elements of the status quo that their proponents and opponents either aim to preserve or reform. Which alternatives are envisaged and which ones closed down – and by whom – thus open the door to studying the positionality, vested interests, and power imbalances between scientific publishers, research institutions, and individual scholars.

Last, the third sub-question deals with reactions of researchers as the main users and producers of scientific knowledge to the proposed shift to Open Access. More specifically, I will scrutinise who and under which circumstances appears to embrace, ignore, or resist (particular forms of) Open Access publishing as well as potential effects thereof for their own publication practices. This includes characterising different career stages, institutional affiliations, disciplinary research fields, and personal situations among interviewed researchers. How does the objective to transition to a new APC-based Open Access publishing regime fit with their scholarly practices, epistemic cultures, and personal attitudes? What factors play a role? Who benefits, who is disadvantaged, and who remains agnostic and under which conditions? And what implications might it have in different locations and research domains? Although a large-scale transition from the predominant journal subscription system might still appear as a hypothetical scenario to many, indications of possible (un-)intended consequences already abound. The adaptation strategies that researchers might develop with regard to the envisioned new fully Open Access publishing regime will be further investigated in this part.

Taken together, answers to these three sub-questions enable me to address the overarching main research question and contribute the individual facets and nuances that are necessary for this task. While the rationale behind many large-scale (inter-)national Open Access publishing initiatives

induced by recent science policy interventions is to tear down subscription-based paywalls for access to scientific knowledge, they risk erecting novel barriers with potentially (even more) detrimental effects to various actors in scholarly communication. Who is to benefit from the projected shift from a “pay-to-read” to “pay-to-say” principle in academic publishing – and which actors are likely to be neglected or marginalised by such a move – will be at the heart of such explorations. Here, I will focus more particularly on the various inclusions and exclusions resulting from this projected new (academic publishing) world order as well as on the re-distribution of roles, responsibilities, and privileges that could ultimately result from an attempt to transition towards a fully Open Access publishing system. In the end, by highlighting various contingencies and particularities, my overall objective is to contribute to a better understanding of the politics of these processes.

2.2 Materials and methods

In order to answer the research questions described above, I have chosen to conduct an in-depth case study of novel high-level Open Access publishing negotiations in the Netherlands. The empirical case that I have focused on was a lengthy dispute between the Dutch university association VSNU and the scientific publishing and analytics company Elsevier in their attempts to reach an Open Access publishing agreement for Dutch researchers. Triggered by the ambitious targets of state secretary Dekker to induce a transition in academic publishing from the established journal subscription model to Open Access in just ten years (OCW, 2013, 2014), the negotiation teams held meetings (and broke up the negotiations in between) for nearly two years.

The period of time that I cover in the empirical case study comprises the negotiations between VSNU and Elsevier (mid-2014 to spring 2016), public statistics on the uptake of their first pilot Open Access agreement (throughout 2016–2018), as well as Dutch researchers’ perceptions of the implications of such negotiations for their own publishing practices (as of spring 2017). In addition, I take into account some noteworthy events and developments in the post-2018 period and provide an update on the aftermath of the initial VSNU-Elsevier negotiations in the epilogue to the empirical case study.

As the VSNU-led negotiations on extending bulk journal subscription packages (so-called “Big Deals”) with Open Access publishing components and the first years of the resulting agreements with major scientific publishers roughly coincided with my active research period for this thesis, I was able to closely follow the controversies between negotiating parties and to collect a broad range of empirical materials. These include:

- The letter “Open Access to publications” (“Open Access van publicaties”, in Dutch), that was sent on 15 November 2013 to the House of Representatives of the Dutch parliament by then-secretary of state for education, culture and science, Sander Dekker;²¹

21 The original version of this letter is available online under agenda item 5, document 31288-354 “Toezegging over verdere ontwikkelingen open acces van wetenschappelijke publicaties” at https://www.tweedekamer.nl/debat_en_vergadering/commissievergaderingen/details?id=2013A05188 [last checked on 18/01/2023].

- Various documents published by involved organisations such as official statements, press releases, and newsletters detailing the state of Open Access negotiations and providing additional information on previous or planned steps (mostly from VSNU and Elsevier);
- A scanned original copy of the Elsevier subscription agreement for 2016–2018 (including the “Pilot Gold Open Access”), signed on 17 March 2016, and its later amendments;
- Monitoring statistics on the number of Open Access publications and the details of VSNU-led agreements with major scientific publishers, as provided on the national Open Access website <https://www.openaccess.nl/>;
- Presentations and talks at (inter-)national academic publishing conferences and workshops given by representatives from involved organisations (in the Netherlands and elsewhere);
- Written communications in discussion forums, national and international media coverage, as well as an echo of Dutch negotiations on Open Access related mailing lists, social media channels, and blog posts;
- Semi-structured individual interviews with members of the negotiation teams at VSNU (5 interviews) and at Elsevier (2 interviews);
- One semi-structured individual interview with a science policy specialist who was temporarily seconded from a Dutch research institute to the OCW ministry to help write the above-mentioned letter for Sander Dekker;
- Semi-structured individual interviews with researchers in the Netherlands at various research institutions and career stages and in various research fields (23 interviews);
- Additional ethnographic observations such as attending a general parliamentary consultation (*algemeen overleg (AO)*, in Dutch) on science policy at the Dutch parliament in The Hague; conversations with academic librarians and Dutch-based small and medium-sized scholarly journals and book publishers; as well as public discussions and other events at Dutch universities attended during multiple fieldwork and research periods in the Netherlands (late 2016 – late 2019).

Collecting these materials and especially the primary empirical data such as interviews was facilitated by my research stays in the Netherlands as a visiting researcher at the CWTS and at the Rathenau Instituut, an institute associated with the Royal Netherlands Academy of Sciences (KNAW). These research stays were funded by short-term grants for research visits from the University of Vienna and the Marietta Blau Grant from Austria’s Agency for Education and Internationalisation (OeAD). Most of the interviews were conducted by meeting the interviewees in person in autumn 2016 and spring 2017, with some interviews taking place remotely by phone or video call (when preferred by the interviewee).

With regard to data gathering and processing steps, all interviews were audio-recorded by using a digital voice recorder (Olympus LS-P1), transcribed in verbatim with Express Scribe transcription software, and subsequently coded and analysed further with the help of Atlas.ti software for qualitative data analysis. Prior to the interview, each interviewee was sent a short project summary, a preliminary questionnaire, and an informed consent form to be signed by both parties (see *Appendixes*). During and shortly after each interview, I took additional notes and chronicled brief memory minutes to capture my initial impressions. Writing short memos when working with

one's data is also a firm feature integrated into Atlas.ti software that I used periodically to help with developing analytical categories and preliminary explanations as they emerged at later stages of my research.

In preparation for the interviews, I produced two different questionnaires: one for the *designers* of the VSNU-Elsevier agreement (i.e. members of both negotiation teams at VSNU and Elsevier; with the letter-writer included in this group) and another one for the (potential) *users* of the same agreement (i.e. researchers in the Netherlands). In the informed consent form, I specified the conditions for participating in the interview, such as anonymising the quotations if used in the thesis and/or related publications. Interestingly, one interviewed researcher explicitly requested to publicly share his interview, and another researcher also agreed to do so. These two interviews are available online in full length (see Šimukovič, 2017).

When recruiting the interviewees, my strategies differed depending on the respective group of actors. Since the negotiation teams at VSNU and Elsevier contained a relatively small number of members, I approached them directly and invited them to participate in an interview. In the process of establishing personal contacts, I was substantially supported by the VSNU programme manager for Open Access. As a result, I was able to conduct interviews with the following members of the negotiation teams:

- 1 x programme manager for Open Access at VSNU,
- 1 x board member at VSNU (president of the executive board at a Dutch university),
- 2 x representatives from university libraries (library directors),
- 1 x advisor at a research support organisation in the Netherlands,
- 2 x representatives from a negotiation team at Elsevier.

One of the Elsevier representatives was mainly responsible for academic relations, and the other for sales. Both interviewees were in a relatively high hierarchical position within the company and happened to be involved in the negotiations with VSNU throughout the whole period of almost two years. At the time of the interview, one interviewee planned to continue participating in the next round of negotiations after the ongoing contract would expire. The other interviewee had decided to withdraw from the negotiation team at Elsevier, referring to very time-consuming negotiations and different priorities.

Furthermore, I utilised three main sources to approach researchers in the Netherlands as potential interviewees:

- 1) Advanced search in Elsevier's full-text publication platform *ScienceDirect* in order to identify corresponding authors of journal articles that were published in Open Access under the VSNU-Elsevier agreement in 2016–2017 (resulting in 7 interviews);
- 2) *Booklet* "Opening the book on open access: What researchers think" by the KNAW (2016) that presented interviews with researchers at its associated institutes on their views on Open Access (5 interviews);
- 3) *Cross-references* provided by other interviewees or members of the VSNU-Elsevier negotiation team and personal contacts (11 interviews).

Since the *ScienceDirect* platform is a product of Elsevier that contains bibliographic metadata and the full text of articles published in its approximately 2,700 journals,²² it appeared as a good starting point to identify the authors of Open Access articles under the pilot VSNU-Elsevier agreement. For this purpose, I used the advanced search functionality to export the list of articles in journals (periodicals) that met the following criteria: publication year 2016 or 2017 and the author affiliation in the Netherlands. The list with article-level metadata was exported on 13 February 2017 (i.e. with publications up until that date) as an MS Excel spreadsheet and processed further in this format.

The exported list of publications initially contained 1,000 records. In the next step, I manually checked the affiliations and other details of some 450 publications and identified 118 cases in which a journal article was published under the “Pilot Gold Open Access” agreement between VSNU and Elsevier. As a rule, such publications were signified with the following statement in the funding acknowledgement section: “Open Access funded by VSNU”. Given that in 2016, 358 journal articles were published in Open Access under this agreement,²³ this shortlist represented roughly one third of relevant publications in its first year. Then, after deducting several authors with multiple publications, I sent an email invitation to participate in an interview to the remaining 110 corresponding authors. Due to a relatively low response rate, rejected requests, and partially outdated contact information, I was eventually able to conduct only 7 interviews from this sample.

Thus, since my aim was to have at least 10–12 interviews with researchers in the Netherlands (Šimukovič, 2016a), the need for complementary recruiting strategies became clear quite quickly. At the same time, focusing solely on corresponding authors at Dutch research institutions who did make use of the VSNU-Elsevier agreement, and so benefited from it directly, entailed a risk of eventually portraying a one-sided picture. Therefore, in order to overcome such potential biases and to deliberately represent a broad range of views, I searched for and came across another important source for identifying further interviewees.

According to a press release that accompanied the publication of the KNAW (2016) booklet, it was presented on the occasion of the Open Science Conference in Amsterdam in April 2016 as part of the Dutch presidency of the Council of the European Union.²⁴ The first copies thereof were also given to state secretary Dekker and Carlos Moedas, the European Commissioner for Research, Innovation and Science at that time (ibid.). However, compared to another document that was released during this conference, the “Amsterdam Call for Action on Open Science” (The Netherlands EU Presidency, 2016), and which was publicly endorsed by numerous organisations (see, e.g., a joint statement from the library associations EBLIDA, IFLA and LIBER, 2016, as well as EUA, 2016b), the KNAW booklet seemed to generate little resonance.

22 See <https://www.elsevier.com/solutions/sciencedirect> [last checked on 20/01/2023].

23 See <https://www.openaccess.nl/en/in-the-netherlands/monitor> [last checked on 20/01/2023].

24 See <https://www.knaw.nl/en/news/news/academy-presents-opening-the-book-on-open-access-2013-what-researchers-think> [last checked on 20/01/2023].

Somewhat ironically, then, an apparently limited interest in the standpoint of researchers themselves was said to reflect the general state of affairs in Open Access debates and was given as the rationale behind preparing such a booklet in first place. In its preface, José van Dijck, the then-president of KNAW, explained the academy's own considerations:

“For the past couple of years, the open access debate has been dominated by university administrators, librarians, government, funding organisations and publishers. Voices of researchers are seldom heard in this debate. That is why the Royal Netherlands Academy of Arts and Sciences wants to shift the focus a bit by initiating this booklet. It contains an illustrative number of interviews with outstanding researchers in a variety of disciplines. As it turns out, their opinions vary quite a bit, making the interviews a very interesting read indeed” (KNAW, 2016, p. 5).

For a publication that called attention to “the oddities of the open access debate”, with hardly any questioning whether “the destination [is] in fact so straightforward, and ... the path leading to it well lit” (ibid.), the KNAW booklet turned out to be a valuable source for covering a broader spectrum of Dutch researchers' perspectives and a further tool to recruit additional interviewees. Probably because of their personal encounters with and a stronger interest in the topic and related issues, it also resulted in a much higher response rate to my own invitation to participate in an interview for my PhD research. In this way, after contacting all 21 researchers represented in this booklet, I was able to conduct 5 more interviews.

Last, a certain snowballing effect set in (Parker et al., 2019) during the course of this interviewing and fieldwork phase. Given my awareness of potential biases, and a highly heterogeneous landscape of views and positions that had started to emerge, I aimed to capture important variations in experiences and opinions as well as their determining factors. Therefore, I started to actively search for interviewees who were not primarily targeted within the VSNU-Elsevier pilot agreement on Open Access publishing. In particular, this concerned researchers with non-article-based publication cultures (e.g., where books, policy reports, or other publication types play a huge role) as well as those who stand on the edges of the imagined Dutch academia (e.g., based at universities of applied sciences, other non-university research institutes, or those who are only loosely affiliated with some institution). Driven by an interest to learn more about experiences from these hitherto underrepresented groups, I occasionally asked for personal references when meeting interviewees from previous sources (for more reflections on this sampling strategy, see also sub-chapter 3.2 *Conceptualising a case study, or “constructing the field”*). Sometimes, I was also offered further recommendations and contacts of colleagues on the initiative of the interviewees themselves. As a result, this approach yielded another 11 interviews.

In the end, I conducted a total of 23 interviews with researchers in the Netherlands. The interviewees reflected a broad variety of scientific disciplines and research fields such as social theory, computational linguistics, migration studies, religious studies, medical and organisational psychology, statistics, electrical engineering, cardiology, oral & maxillofacial surgery, etc. Their career stages spanned all levels between PhD students, recently graduated and experienced post-doctoral researchers, and lecturers, as well as assistant, associate, and full professors. At the time of

the interview, most interviewees were affiliated with one of the 14 research universities in the Netherlands, while other arrangements were also given (such as multiple affiliations, other jobs at academic medical centres, universities of applied sciences, or KNAW institutes, and currently unemployed). Their involvement in Open Access publishing and/or related debates varied from early encounters to being outspoken proponents or critical observers. With regard to socio-demographic characteristics, the interview sample contained a mix of Dutch and non-Dutch nationalities as well as male and female participants (with a ratio of roughly 3:1, in each category).

Accordingly, the overall volume of interview materials for this case study was quite considerable. Since each interview usually lasted between 1 and 1.5 hours, every verbatim transcript amounted to 12–15 pages of text on average, adding up to more than 250 pages of written transcripts for the interviews with researchers alone. Considering further interviews with negotiators at VSNU and Elsevier, as well as one with the letter-writer, another 10 hours of audio-recordings or more than 120 pages of interview transcriptions were to be added. To process this vast collection of interview data and to facilitate further analysis steps, I coded the interview transcripts line-by-line or segment-by-segment with corresponding labels in Atlas.ti software. The extensive features offered therein for relating and comparing individual codes and quotations also proved very useful. But even with the aid of such sophisticated computer-assisted qualitative data analysis tools, creating, analysing, and aggregating some 4,700 initial codes required a huge amount of time and effort.²⁵

To guide my research and empirical analysis, I relied on the Grounded Theory (Charmaz, 2006) approach and, particularly, on its Situational Analysis offshoot developed by Adele E. Clarke (2005). The latter also allows for the use of mapping techniques as visual resources to help capture various positions, implicated/silenced actors and discourses, as well as contradictions in the situation under study. Finding emerging analytical categories in one's data, relating them to each other, and finally building a theory *from the empirical ground* is at the core of this approach. In the next chapter, I will explain in more detail some fundamental features that it entails and how I proceeded with Grounded Theory in my own work. But before moving forward, I would like to add some reflections on combining professional and educational backgrounds and knowledges from two different fields.

2.3 Combining backgrounds and knowledges from LIS and STS

In a recent book that investigates the theory-practice relationship in Open Access and a perceived gap between these two realms, Stephen Pinfield together with other information science researchers and lecturers in the UK and Australia have noted that using theory to understand this domain and inform related activities has received little attention to date (Pinfield et al., 2020). Broadly defined as different research approaches that apply and/or generate “‘theory’, ‘models’ and ‘frameworks’ as ways of analysing and explaining reality, as well as predicting developments or prescribing actions” (ibid., p. 43), the concept and evolution of Open Access publishing were

25 The idea of assigning “codes” when analysing empirical data derives from Grounded Theory, which will be introduced hereafter. There, “coding means naming segments of data with a label that simultaneously categorizes, summarizes, and accounts for each piece of data” (Charmaz, 2006, p. 43).

seen as heavily under-theorised. Since championing the Open Access agenda and establishing of supporting policies, technologies, and processes at academic institutions was usually taken over by librarians, themselves mostly educated in Library and Information Science (LIS), Pinfield and colleagues have looked into theory-informed literature on Open Access in LIS and the wider field of Social Sciences and Humanities (SSH).

What they found out, after closely examining more than 100 publications on the topic of Open Access (consisting of journal articles, book chapters, and conference proceedings), was that “LIS makes regrettably little use of theory” (Pinfield et al., 2020, p. 48; see also Hobohm, 2023). Indeed, even in the seminal works that are widely referred to for understanding Open Access (Willinsky, 2006; Suber, 2012), an attempt to find the application of theories appears fruitless. The same applies to common LIS journals that typically do not require a theory section and/or that a theoretical framework be outlined (Finlay et al., 2013; Pinfield et al., 2020). These findings are in line with some previous efforts to analyse and stimulate theory use in LIS studies. For example, Kim and Jeong (2006, p. 548) were worried about “the declining share of theory development articles in recent [LIS] journal issues and the overall low level of theory incidents” in which the authors would contribute to the development or the use of theory in their own publications. Even more incisively, Lor (2014, p. 25) remarked:

“Much of the literature of comparative LIS is atheoretical and based on assumptions that reflect naive empiricism. Most comparativists in LIS fail to link their work to that of colleagues, so that no body of theory is built up. Insufficient use is made of theory from other social science disciplines. There is [little] evidence of awareness of metatheoretical assumptions in the sociological, teleological, ontological, epistemological and ethical dimensions”.

In instances where theoretical approaches were detected by Pinfield and co-authors (2020), theories were said to have been “*imported* extensively from other areas”, even when these were located in the LIS discourse (p. 216, emphasis added). Among theories utilised by Open Access researchers, these originated from a wide range of fields such as “sociology, psychology, LIS, mathematics, education, economics, and business” (ibid., p. 92). In addition, broadly oriented contributions to theory development and critical reflection in information science and librarianship can be found (e.g., Leckie et al., 2010; Finlay et al., 2013; Kim, 2015; Leung & López-McKnight, 2021; Sonnenwald, 2021), as well as preliminary steps for applying or developing theories related to Open Access and scholarly communication in particular (Kennan & Cecez-Kecmanovic, 2007; Haider, 2008; Kennan, 2008; Herb, 2010; Xia, 2011, 2012; Kember, 2014; Kulczycki, 2014; Kulczycki, 2016; Sugimoto, 2016; Herb & Schöpfel, 2018; Šimukovič, 2018; Sugimoto et al., 2019; Eve & Gray, 2020; Schmidt, 2020; Okune et al., 2021). One of the main proposals for future directions in theory-practice integration in LIS that Pinfield and co-authors (2020) have drawn from their analysis concerned building theory through “the creation of models *de novo* using a Grounded Theory-like approach, and the bringing-in of pre-packaged theories from other disciplines” (pp. 205–206; emphasis in original). Since Grounded Theory and Situational Analysis (Charmaz, 2006; Clarke, 2005) have been central in my own research, I will introduce these approaches and how I worked

with them in the chapter hereafter (see chapter 3. *Working with Grounded Theory as a “theory/methods package”*).

At the other end of the spectrum, there stands an interdisciplinary and innovative intellectual field of STS that “explores the transformative power of science and technology to arrange and rearrange contemporary societies” (Felt et al., 2017, p. 1). Its topics of interest include, among others, investigations into “the explanatory power of scientific models, the quantification of metrics of individual and organizational performance, and the globalization of information, communications, energy, transportation, and other technological infrastructures” (ibid.). Through numerous detailed case studies as its method of choice, STS has developed a set of its own distinct theories (Law, 2017). These case studies, in turn, are used to “evoke, illustrate, disrupt, instruct, and help STS to craft and recraft its theory” (Heuts & Mol, 2012; Yates-Doerr & Labuski, 2015, cited in Law, 2017, p. 32).

Paradoxically then, visions of a different scholarly publishing system, although firmly positioned at the top of the science policy-making agenda for at least a decade (see chapter 1. *Introduction*), have received scant attention from STS scholars. This is all the more surprising as controversies over a large-scale transformation of how scholarly literature shall be published, financed, owned, and accessed appear to squarely broach the issues that STS is otherwise very interested in. What is more, political interventions in this realm, as these are ongoing in many European countries and beyond, would – or actually already *do* – affect researchers in STS themselves in their roles as authors, readers, peer reviewers, and editors of journals and other publishing venues (see also Šimukovič, 2020a). Hence, one might wonder whether – especially in today’s proclaimed risk, information, or knowledge societies “where the acquisition of knowledge is viewed as an epoch-defining aspect of the current era” (Gross & McGoey, 2015, p. 1) – the lack of in-depth case studies on Open Access or Open Science movements in STS would constitute another example of a particular type of ignorance, that of “undone science” (Hess, 2015; Hess et al., 2017).

Nevertheless, there are several notable contributions to the topic by scholars from STS and adjacent fields. These include, for instance, critique from science historian Michael Hagner on the implications of Open Access publishing models for the future of academic books and their relation to data capitalism (Hagner, 2015, 2018); similar views from Philip Mirowski (2014, 2018) who argued that “the open science movement is an artifact of the current neoliberal regime of science, one that reconfigures both the institutions and the nature of knowledge so as to better conform to market imperatives” (Mirowski, 2018, p. 172); attempts to theorise Open Access “as the moral economy of digital knowledge production” by social theorist Jana Bacevic and political economist Chris Muellerleile (2018, p. 179); and allegedly demystifying Open Access as “panacea” through the lens of “the new economy of academic knowledge production” (Muellerleile, 2017, p. 132). However, despite their merits, these publications contain considerable shortcomings. Most crucially, from my perspective as a researcher and practitioner of Open Access with an educational and professional background in both STS *and* LIS, it is precisely such utterly critical accounts that tend to overlook the multiplicity of Open Access models and their complexities. As a result, they often misinterpret commercial variations of Open Access – which are, admittedly, now heavily

promoted – as representative of the issues in the whole spectrum of its operating and publishing models (see also sub-chapter 5.3 *The Open Access Multiple*).

At the same time, a noteworthy line of work has emerged at the interface of STS, LIS, sociology, digital humanities, philosophy, and media and culture studies, that appears to be genuinely interested in providing constructive (self-)criticism and utilising Open Access' potential to improve scholarly communication. The authors, often with practical experience in running (Open Access) publishing venues, include Martin Paul Eve, who has worked extensively on Open Access in the humanities (Eve, 2014), and, more recently, co-edited a book on the histories, infrastructures, and global politics of Open Access (Eve & Gray, 2020).²⁶ They also include Janneke Adema (2014, 2015) and Samuel A. Moore (2017, 2019a, 2019b; Adema & Moore, 2018, 2021), researchers and organisers behind the Radical Open Access Collective (ROAC) – a community of more than 70 scholar-led, not-for-profit Open Access presses and other projects that have committed to “provide an alternative to the legacy model of commercial publishing”²⁷. As part of its philosophy, the ROAC produces “critiques of the status quo” and adheres to the “ethics of care”, benefiting its members “by sharing resources, advice, and (where possible) time”²⁸. Or one could think of Leslie Chan at the University of Toronto Scarborough (Chan et al., 2011; Chan et al., 2019), who has been director of the Open Access publishing platform Bioline International and signatory of the original BOAI (2002) declaration, and currently serves as advisor to numerous Open Access initiatives.²⁹ Under his leadership as principal investigator of the Open and Collaborative Science in Development Network (OCSDNet) as well as director of the Knowledge Equity Lab, an STS-dyed Open Science Manifesto including principles that recognise “cognitive justice” and “situated openness” have been developed.³⁰

Moreover, it bears mentioning that the ROAC has produced a number of pamphlets on topics such as *The Geopolitics of Open, Competition and Cooperation*, *Humane Metrics/Metrics Noir*, *Guerrilla Open Access*, *The Poetics of Scholarship*, *Predatory Publishing*, and *Care for the Commons* – with a number of STS scholars on board.³¹ Editors of some STS journals, as well, have shared their thoughts on the topic. For instance, Salla Sariola from “*Science & Technology Studies*” journal, itself “fully open access since 2017 ... not only by the definition that it is openly available, but it is also free to publish in”, reflected on the value of openness “beyond technical concerns” (Sariola, 2021, p. 2). And Niki Vermeulen, Sarah M. Schönbauer, and Vincenzo Pavone (2020, n.p.), as a new editorial team of the “*EASST review*” at the European Association for the Study of

26 See also information on the Open Library of Humanities (OLH) that was launched by Martin Paul Eve and which currently publishes more than 20 journals with no author-facing publishing charges at <https://www.openlibhums.org/site/about/> and <https://eve.gd/OA/> [last checked on 20/01/2023].

27 See <https://radicaloa.disruptivemedia.org.uk/about/> [last checked on 20/01/2023].

28 See <https://radicaloa.disruptivemedia.org.uk/philosophy/> [last checked on 20/01/2023].

29 See <https://www.uts.utoronto.ca/dgds/leslie-chan> [last checked on 20/01/2023].

30 See <https://ocsdnet.org/manifesto/open-science-manifesto/> [last checked on 20/01/2023].

31 See <https://radicaloa.disruptivemedia.org.uk/pamphlets/> [last checked on 20/01/2023].

Science and Technology (EASST), have indicated their interest in exploring “the meaning of open science in STS” (see also Khandekar et al., 2021). Furthermore, the “Mattering Press” is a small Open Access book publisher founded in 2012 and a member of ROAC, with two distinct advisory boards for STS and for Open Access.³² As Julien McHardy and Joe Deville (2022, p. 2) write:

“The initial editorial board established the [Mattering] press in part as they were keen to continue the collaborative relationships of practice, research, and critical thinking that they had established during their PhDs, in which much of [the] discussion had focused on the need to thinking critically about publishing infrastructures. They also observed that Open Access had largely not been extended to [the] landscape of book publishing, and certainly not to the field of Science and Technology Studies. The press provided an opportunity to work, in a directly hands-on way, with the practicalities and politics of publishing”.

The editors on board the Mattering Press can be considered what Pinfield and colleagues (2020, pp. 166–167) have called “translators or boundary spanners”, i.e. “individuals with the capacity and inclination to act as intermediaries between theory and practice”.³³ While in the case of Open Access, such “actors with a foot in both camps” were said to typically be “practitioners who have engaged in research activities” (ibid., p. 176), other ways to bridge the perceived research–practice gap were suggested. Such activities of “scholar practitioners” or those pursuing “engaged scholarship” might further include publishing results from academic research in practice-oriented journals (ibid., p. 71). However, even the links between academic research done at library schools and the daily work of librarians themselves were reported as “weak or non-existent” (Pinfield et al., 2020, p. 166). Interestingly enough, another glowing example of a *boundary spanner* – herself known for coining the term “boundary objects” (Star & Griesemer, 1989; Star, 2010) – has been Susan Leigh Star. Although she extensively researched information infrastructures throughout her lifetime, and published in LIS journals on library topics (Bowker et al., 2015), her work was overlooked by Pinfield and co-authors (2020).

To conclude, especially in light of heavily value-laden and sometimes also very emotional Open Access debates, the capacity of STS scholarship to attend to “the *situatedness* of knowledge claims and technological developments” (Haraway, 1988, cited in Felt et al., 2017, p. 1; emphasis in original) as well as to ask “*cui bono?*”, or who benefits from specific configurations thereof (ibid., p. 2; Bowker et al., 2015), appeared to me as a suitable antidote for limited reflexivity and theoretical foundations on the side of LIS researchers and practitioners. In other words, STS gave me a toolbox and a vocabulary to deal with the many intellectual intricacies when researching Open Access initiatives. It also helped me when envisioning a different, more radical version of an Open Access publishing system “as an ongoing critical project, embracing its own inconsistencies

32 See <https://www.matteringpress.org/about/mattering-people> [last checked on 20/01/2023].

33 Similar ideas can be found in writings on feminist standpoint theory with an emphasis on the epistemic advantages of scholars on the margins of academic structures as “outsiders within”. See especially contributions by Sandra Harding, Donna Haraway, Patricia Hill Collins, Dick Pels, and Alyson Wylie in Harding (2004).

and battling with its own conceptions of openness” (Adema, 2014, n.p.). At the same time, my other foot in LIS kept me aware of potential challenges when attempting to translate new insights into practice and gave me fresh impulses from my daily work over the past couple of years.

In the end, while librarians and other academic publishing professionals have reportedly “almost universally characterised themselves as time-poor, and therefore focused on the demanding operational requirements of their roles rather than more abstract aspects of the debate” (Pinfield et al., 2020, p. 163), deliberate efforts to connect both communities of researchers and practitioners have been welcomed on both sides. Therefore, putting knowledges and experiences from LIS and STS into conversation appeared to be a well-balanced combination to allow for an empirically grounded yet theoretically informed study in this thesis. In what follows, I will further describe how I was helped not only by my own advantageous position as a researcher-practitioner in these fields, but also by choosing a research approach that is particularly sensitive to overwhelmingly blurred rather than clear-cut boundaries between supposedly disconnected realms of theories and their practical applications.

3. Working with Grounded Theory as a “theory/methods package”

Grounded Theory was initially put forward by sociologists Barney G. Glaser and Anselm L. Strauss in the late 1960s, most notably in their book “The Discovery of Grounded Theory” (1967) (Clarke, 2005; Goulding, 2005; Charmaz, 2006; Starks & Brown Trinidad, 2007; Timmermans & Tavory, 2012; Clarke et al., 2015). While it was developed further in different directions since, I will primarily draw on more recent interpretations and adaptations of Grounded Theory by Kathy Charmaz (2006) and Adele E. Clarke (2005). As highly engaging and accessible contributions to the conceptual and methodological advancement of this approach, their deliberations provided the necessary historical contextualisation and practical guidance and have been most instrumental for my own research work. After presenting some of the main tenets of Grounded Theory and Situational Analysis, I will explain how I have conceptualised the case study in this light.

3.1 Grounded Theory and Situational Analysis

Referring to Susan Leigh Star (1989), Clarke (2005; Clarke et al., 2015) has pointedly described Grounded Theory as a “theory/methods package”. By suggesting such a designation, she emphasised the close entanglement of both elements, where ontological and epistemological questions of what and how something can be known are inseparable from one another. Because the assumptions and practices that go along with them “are joined at the hip” (Clarke, 2005, p. xxxiii), as she stressed, it is more appropriate to conceive research methods as integral and co-constitutive of the knowledge and insights generated through them. In the words of Jenks (1995, p. 12, cited in Clarke, 2005, p. 5), “method, then, is not the servant of theory: method actually grounds theory”.

As such, Grounded Theory is better understood not as a theory itself, but rather as an overarching

method or “an empirical approach to the study of social life through qualitative research and analysis” (Clarke, 2005, p. xxxi). According to Atkinson and colleagues (2003, p. 150, cited in Clarke, 2005, p. xxxi), “it represents a general way of generating theory (or, even more generically, a way of having ideas on the basis of empirical research)”. In practical terms, working with basic Grounded Theory can be summarised in the following way (Clarke, 2005, p. xxxi):

“In this method, the analyst initially codes the data (open coding) – word by word, segment by segment – and gives temporary labels (codes) to particular phenomena. The analyst determines whether codes generated through one data source also appear elsewhere, and elaborates their properties. Related codes that have endured are then densified into more enduring and analytically ambitious ‘categories,’ and these are ultimately integrated into a theoretical analysis of the substantive area”.

The essential feature of Grounded Theory is its data-driven theory generation – or, in other words, the aim to bridge empirical data and explanatory theories by inductively constructing novel theoretical ideas based on empirical data (Starks & Brown Trinidad, 2007; Timmermans & Tavory, 2012). Deriving from Glaser and Strauss’ writings, Charmaz (2006, p. 5–6; emphasis in original) provides a list of defining components for practising this approach:

- Simultaneous involvement in data collection and analysis,
- Constructing analytic codes and categories from data, not from preconceived logically deduced hypotheses,
- Using the constant comparative method, which involves making comparisons during each stage of the analysis,
- Advancing theory development during each step of data collection and analysis,
- Memo-writing to elaborate categories, specify their properties, define relationships between categories, and identify gaps,
- Sampling aimed toward theory construction, not for population representativeness,
- Conducting the literature review *after* developing an independent analysis.

What has been unique to Grounded Theory, when compared to other qualitative research and data analysis approaches, was its requirement that “analysis begin as soon as there are data. Coding begins immediately, and theorizing based on that coding does as well, however provisionally” (Glaser, 1978, cited in Clarke, 2005, p. xxxi). Constantly moving “back and forth” between data collection and data analysis throughout one’s research helps develop and refine emerging analytical categories and conceptualisations, through further data collection as well as to identify remaining knowledge gaps (Charmaz, 2006). Such an incremental theory-building process is closely related to the idea of “theoretical sampling”: a data collection strategy that “is driven not necessarily (or not only) by attempts to be ‘representative’ of some social body or population or its heterogeneities but especially and explicitly by *theoretical* concerns that have emerged in the provisional analysis to date” (Clarke, 2005, p. xxxi; emphasis in original).

The last point on the list above – delaying the literature review – concerns a feature of Grounded

Theory that has been frequently disputed and/or misunderstood (Charmaz, 2006). As Charmaz (ibid., p. 165) explains, the intended purpose of this step was to avoid “forcing” the data into pre-existing categories or imposing preconceived lenses on one’s work. Instead, novice and seasoned grounded theorists alike were encouraged to articulate their *own* ideas and build fresh theories. Yet such a proposition by Glaser and Strauss “to free new scholars from the shackles of old ideas” and to “keep themselves uncontaminated by extant ideas” received considerable criticism for naively viewing “the researcher as a *tabula rasa*” (Bulmer, 1979; Dey, 1999; Layder, 1998, cited in Charmaz, 2006, p. 165, emphasis in original). To account for both concerns – i.e. to be open to unexpected impulses and theoretical innovations, and yet not to ignore the foreknowledge and affinities that one possesses prior to entering the field – some scholars have suggested further associated concepts. For instance, Henwood and Pidgeon’s (2003, p. 138, cited in Charmaz, 2006, p. 165) term “theoretical agnosticism” stands for “a critical stance toward earlier theories” that is congruent with Glaser’s (1978) request for extant concepts “to earn their way” into one’s narrative, instead of being adopted in a textbook-fashion. In the end, as Charmaz (2005, p. 23–24) argued, Grounded Theory is about prompting the analyst to take “a fresh look” and create novel analytical categories and concepts: “that is the strength and the core of the method”.

To stimulate emerging original insights when gathering and, subsequently, “wallowing in the data” (Clarke, 2005, p. 84), Grounded Theory offers a number of aids. First, it incites an analyst to concentrate on actions or processes. As explained by Charmaz (2006, p. 109, emphasis in original): “you focus on certain actions, experiences, events, or issues, *not on individuals per se*, to understand how, when, and why your theoretical categories vary”. A practical hint for this purpose has been to use the gerund form when coding data (e.g. *describing* a certain event vs *description* of it). While it can appear trivial to some, according to Charmaz (ibid.), this small adjustment might turn out to play a pivotal role: “adopting gerunds fosters theoretical sensitivity because these words nudge us out of static topics and into enacted processes”.

Second, and related to this, Clarke (2005, pp. 6) reminds us to keep the partiality or “situatedness” of actors, artefacts, and perspectives in mind. This means “assuming the situatedness of all knowledges and their producers” (ibid., p. xxxviii), including the researchers or analysts themselves. To account for any historical, geographical, temporal, or other circumstances, and to facilitate gathering rich and theoretically saturated empirical data, Charmaz (2006, p. 18–20) suggests purposefully asking oneself some thought-provoking questions. For instance: *What’s happening here? Do the data reveal what lies beneath the surface? Are the data sufficient to reveal changes over time? Have I gained multiple views of the participants’ range of actions? From whose point of view is a given process fundamental? From whose view is it marginal? What meanings do different participants attribute to the process? How do they talk about it? What do they emphasize? What do they leave out? How and when do their meanings and actions concerning the process change?* (ibid.).

Admittedly, engaging in such (self-)critical reflections when analysing and/or gathering further data is likely to start with only vague ideas about observed processes and their potential meanings in one’s empirical research. At this point, Charmaz (2005) suggests following and testing one’s own initial *hunches* that can, in turn, spark new previously unconsidered ideas, provide evidence

for them, and illuminate emergent guiding threads. As she (ibid., p. 3, emphasis in original) explains:

“Grounded theorists start with data. We construct these data through our observations, interactions, and materials that we gather about the topic or setting. We study empirical events and experiences and pursue our hunches and potential analytic ideas about them. Most qualitative methods allow researchers to follow up on interesting data in whatever way they devise. Grounded theory methods have the additional advantage of containing explicit guidelines that show us *how* we may proceed.”

The Situational Analysis extension of Grounded Theory developed by Clarke (2003, 2005) has become one of most distinguished methodological advancements in this realm (Clarke et al., 2015). In her attempt to regenerate traditional Grounded Theory, Clarke devised three types of cartographic maps to be used by interested researchers:

- 1) *situational maps* – that lay out the major (non-)human actors and elements in the situation of inquiry and provoke early analysis of relations among them;
- 2) *social worlds / arenas maps* – as meso-level interpretations of the situation, which lay out the collective actors, key elements, and the arenas of commitment or discourse within which they are engaged;
- 3) *positional maps* – that are usually drawn at a later stage of research for laying out the major positions that are (not) taken by actors in the situation of inquiry vis-à-vis particular issues or axes of difference (Clarke, 2005, pp. xxii–xxiii).

As Clarke herself explains, these maps are intended as analytical exercises that supplement basic Grounded Theory approaches (ibid.). Yet at the same time, Situational Analysis takes up some perceived shortcomings or “recalcitrancies” of traditional Grounded Theory, such as a lack of reflexivity, the search for a singular basic social process, and a tendency for oversimplifications, and “pushes” it around the postmodern turn (Clarke, 2003, 2005; Clarke et al., 2015). Therefore, instead of focusing exclusively on the framing of action, Situational Analysis maps are used to help examine partial perspectives, differences, and complexities as analytically central and to elucidate the structures, materialities, conditions, and discourses that characterise a certain situation of inquiry (Clarke, 2005, p. xxii, 294). Or, as Clarke (ibid., emphasis in original) puts it, the “*situation per se becomes the ultimate unit of analysis*, and understanding its elements and their relations is the primary goal”.

With regard to creating visual images or diagrams that represent emerging analytical categories and relationships between them, these are treated as an intrinsic part of Grounded Theory by many of its practitioners (Charmaz, 2006). The advantage of employing complementary visual techniques such as maps, charts, and figures, according to Charmaz (ibid., p. 117), is that these help the analysts “to tease out relationships while constructing their analyses and to demonstrate these relationships in their completed works”. The virtue of Clarke’s situational maps in particular was to “preserve empirical realities and complexities without resorting to reductionist analyses or wholly relying on the basic social process model” (ibid., p. 118). In this light, Charmaz has critically acclaimed Adele Clarke’s major contribution to Grounded Theory: “The structural

elements that shape and condition the situation being studied can be plotted on the map. Her strategy allows us to move from micro to organizational levels of analysis and to render invisible structural relationships and processes visible" (ibid.).

What is more, when juxtaposing traditional vs. constructionist Grounded Theory and Situational Analysis, Clarke (2005) points out some further considerable differentiations. Most notably, while many fundamental principles remain effective, Situational Analysis puts emphasis on exploring partial perspectives and situated knowledges as well as multiple possible social processes and subprocesses, instead of seeking "universal truths and generalizations" (Clarke, 2005, p. xxii, 294). A thorough literature review, then, shall deliberately become part of a research project and accompany it on an ongoing basis, not just after initial analysis as originally suggested by Glaser and Strauss. Furthermore, authors or analysts themselves are seen not as authoritative experts any more, as in traditional Grounded Theory, but as accountable and reflexive participants who empirically construct the situation of inquiry through collecting and mapping the data (ibid.).

In the end, as Clarke (2005, p. 293) notes, a "good interpretive analysis of the situation of inquiry ideally produces new working sensitizing concepts or elaborates and refines old ones, integrates theoretical advances with grounded empirical work, and is explicitly located, situated, and historicized". As a step in this direction, in the following sub-chapter I will provide more details on how I proceeded with these suggestions and delineated the situation of inquiry in this empirical case study.

3.2 Conceptualising a case study, or "constructing the field"

The guiding principles of Grounded Theory and Situational Analysis have profoundly influenced my work in numerous ways. These range from devising open-ended, non-judgemental questions when preparing my interview questionnaires in order to "encourage unanticipated statements and stories to emerge" (Charmaz, 2006, p. 26), to drawing several iterations of situational maps³⁴ that helped provoke my analytical thinking and pointed at surprising blind spots and novel vantage points from which to approach the issues under study. They have also influenced my becoming (even more) sensitised to critical voices and diverging experiences that called for attention in the shadow of more powerful mainstream narratives.

In the course of this process, I have learned that making implicit and explicit design choices is an inherently political task. Because, to cite Charmaz (2005, p. 15; emphasis in original): "although methods are merely tools, they do have consequences. ... *How* you collect data affects *which* phenomena you will see, *how*, *where*, and *when* you will view them, and *what* sense you will make of them". Or, in the words of John Law (2004, cited in Karasti & Blomberg, 2018, p. 250), "methods not only produce presences but also absences". It was thus clear that numerous decisions made when conceptualising this empirical case study would have immediate effects on the nature and tenor of the story that would be told – or not – with this thesis.

For one, working with Situational Analysis methods has substantially enhanced my capacity "to

34 Early examples of my draft situational maps are available online (see Šimukovič, 2016b).

do incisive studies of differences of perspective, of highly complex situations of action and positionality, of the heterogeneous discourses in which we are all constantly awash, and of the situated knowledges of life itself thereby produced" (Clarke, 2005, p. xxiii). Having such a treasure of analytical and conceptual tools at hand prompted me to produce not just "thick descriptions" (Geertz, 1973) of individual events, but to strive for discerning "thick analyses" (Fosket, 2002) that systematically take into account "the full array of elements in the situation and explicate their interrelations" (Clarke, 2005, p. xxiii; both cited in Clarke, *ibid.*). These deliberations would inevitably fuel my interest to look behind the scenes and track down varying viewpoints beyond the official version of the Dutch success story, to be found in glossy Open Access brochures and duly repeated by its main protagonists.

In this respect, a core advantage of Situational Analysis and its mapping techniques has been a practical tool kit for dealing with multiple inconsistent or "comfortably contradictory" (Clarke, 2005, p. 177) discourses and positions in my empirical materials. This allowed me to not get trapped in binary categorisations of pro and contra arguments vis-à-vis a certain statement or issue and to dig deeper in search of structural factors for discrepancies and ambivalences that I discovered throughout my research (see especially the idea of adding a third perspective or triangulating not only methods but also viewpoints, as presented in *Chapter 9*). In this way, the "situatedness" (Clarke, 2005) of respective claims could be brought to light quite clearly or, at times, even specified in more precise and fine-grained terms.

Furthermore, the analytical capacities taken from Grounded Theory and Situational Analysis made a good match with S. L. Star's relentless pursuit of asking "Cui bono?", or "to whose benefit?" (Bowker et al., 2015), when studying academic publishing as an infrastructure – another major source of inspiration for this thesis. Since Situational Analysis "intentionally seeks to represent *all* the social worlds and discourses in an arena, amplifying the silent and silenced, specifying implicated actors and actants, and seeking out their (usually quite marginalized) discourses" (Clarke, 2005, p. 178, *emphasis in original*), I was compelled to chart a comprehensive picture of the situation of inquiry – the controversy about Open Access – and the complexities that constitute it. This concern corresponded directly with the heuristic principle of theoretical sampling, where data collection is driven by emerging theoretical ideas and analytical objectives, such as to identify variations in a given process or to delineate and saturate the properties of a certain analytical category (Charmaz, 2006, p. 104).

For example, after conducting interviews with members of the VSNU negotiation team, and especially the librarians among them, I noted a strong perception on their side that researchers or "these academics", in one interviewee's words, were not aware of the complex underlying mechanics of academic publishing in general and of its costs in particular. While keeping this system of Big Deals subscription packages, institutional negotiations, consortial acquisition procedures, and many other specific elements up and running constituted a day-to-day business for many in the former group, most researchers at Dutch universities would probably hardly ever know which scientific journals their institutions were actually subscribing to. This assumption seemed to hold ground during the first round of interviews with university-based researchers,

who often appeared convinced that any interested reader could easily access their publications, if only they wished to do so. Therefore, I had initially devised an analytical category for living in “academic bubbles” to address the widespread ignorance of access restrictions imposed on most academic journals under the prevalent subscription-based model.

It was not until I conducted another round of interviews with respondents at non-university research institutions that I was able to learn about their extensive first-hand experiences with journal subscription paywalls. Compared to their counterparts at VSNU-associated universities, these interviewees were rarely spoiled by all-encompassing coverage of subscriptions packages and other benefits. Instead, they had to find (sometimes improvised) means to circumvent such limitations and essentially to carve out a way to keep up their research activities along with their relatively privileged peers. That is, although these types of researchers could also be considered part of Dutch academia, if less visible or perceptible by others, they were systematically excluded and so disadvantaged in Big Deals and novel Open Access pilot agreements. As a result, after pursuing additional interviews according to this theoretical sampling strategy, I came to refine my analytical category from “academic bubbles” to “access bubbles”.

With that said, the beauty of and an invaluable hint derived from Situational Analysis has been to put differences and variations at the analytic core, instead of labelling them as “outliers” or “negative cases” (Clarke, 2005, p. 16). Similar to “abductive analysis” proposed by Stefan Timmermans and Iddo Tavory (2012, p. 169), itself established on “a grounded theory foundation to foster theoretical innovation”, zooming in on such instances presented some of the most promising and fruitful sources of insight. As the authors explain, “this approach rests on the cultivation of anomalous and surprising empirical findings against a background of multiple existing sociological theories and through systematic methodological analysis” (ibid.). Coupled with the notion of “infrastructural anomalies” (Bowker & Star, 2000), it led me to compose a wholly new chapter in this empirical case study (see *Chapter 9. Infrastructural “anomalies” and moments of “breakdown” – Zooming in on key areas of tension*).

This creative process of “producing new hypotheses and theories based on surprising research evidence” (Timmermans & Tavory, 2012, p. 167) was stimulated further by taking up Charmaz’s (2006) advice to follow up on own hunches. More particularly, there have been several *weird moments* that kept me puzzling over a number of occasions. These include pondering over mixed feelings about the outcome of negotiations with Elsevier among members of the VSNU team, followed by highly ambivalent attitudes among interviewed researchers with regard to the proposition “to open up” the peer review system, and an impression that I had grossly missed out on the lived experiences of several self-organised and “tech-savvy” researchers whose working and publishing practices seemed to have already arrived at the future of full Open Access a long time ago. While still having only vague ideas about the potential meanings of such discoveries, I attempted to document my observations well and to keep track of possible reasons behind them in the later stages of my fieldwork. Probing further in these directions when collecting and examining my empirical materials has helped me to add new analytic perspectives, which will be dealt with in more detail throughout subsequent thesis chapters.

However, along with the many advantages of working with Grounded Theory and Situational Analysis, this “theory/methods package” (Clarke, 2005) has also presented some challenges. As Charmaz (2006, p. 118) noted, “Clarke’s situational maps take Glaser’s (1998) dictum ‘All is data’ seriously because she builds structural properties right into her maps and positions them in social worlds and arenas”. Or, in Clarke’s own words: “*The conditions of the situation are in the situation. There is no such thing as ‘context’*” (Clarke, 2005, p. 71; emphasis in original). Yet an immediate difficulty that is inherent in this attitude is deciding where (and when) to stop gathering data or how to delimit *the situation* in one’s empirical inquiry.

At this point, methodological considerations on how to approach complex phenomena such as (information) infrastructures through ethnographic studies lend further aid. Building on “the anthropological premise that the pursuit of a phenomenon of interest within an ‘empirical landscape’ is not fixed”, Helena Karasti and Jeanette Blomberg (2018, p. 241) suggested that “the phenomenon [itself] emerges by following connections and discovering discontinuities”. From this perspective, “the ethnographer by constructing the field during fieldwork simultaneously engages in delineating the object of inquiry”, instead of “viewing the field as a naturally occurring entity” (ibid.). That is, the researcher herself is granted “agency in reflexively making choices regarding what to include or exclude from view” (ibid.; see also Hahn et al., 2018).

In this regard, the empirical case study in this thesis can be also viewed as a multi-sited ethnography with multiple sites or locations to be consulted. Referring to anthropologist George E. Marcus (1995), Karasti and Blomberg explain:

“Multi-sited ethnography recognizes that there are variety of possibly transient and changing places, spaces, situations and encounters that can form the focus of a study. The ethnographer constructs the field through their engagement with it over the course of the study. Multi-sited ethnography broadens and diversifies the empirical field and the object of inquiry in order to address research problems that cannot be accounted for ‘by remaining focused on a single site of intensive investigation’ (Marcus, 1995, p. 96, cited in Karasti & Blomberg, 2018, p. 247).

In contrast to simply multiplying the number of sites to be investigated, “a multi-sited approach suggests that there are a myriad of alternative ways of formulating the object of ethnographic study with no assumption about the totality or unity of the object” (Karasti & Blomberg, 2018, p. 247). The advantages of Situational Analysis to pursue such research projects have been also underscored by Clarke (2005). In her words, while many, if not most, ethnographic studies have been multi-sited already, nowadays “the researcher, at design and later research stages, explicitly designates an array of possible sites the study of which would contribute to both a broad and deeply *empirically* grounded understanding of the phenomenon of interest” (Clarke, 2005, p. 165; emphasis in original). Given the variety of data and locations as well as multiple angles from which I have collected empirical materials, a multi-sited ethnography appears to describe my approach to conceptualising this case study well.

As Karasti and Blomberg (2018, p. 242) note further on, researchers engage in forming the object of

inquiry that is “informed by their interests and motivations and enabled by specific resources, situations and opportunities”. The object of (ethnographic) inquiry is, thus, “relationally constructed” and “comes into being as a consequence of interactions in the field and from the engagement of the ethnographer with the phenomena” (ibid.). In view of such contemplations, I have necessarily come to consider my own positionality when making numerous conceptual and methodological design choices. Admitting that one cannot be neutral or objective, but can only to attempt to articulate and reflect upon one’s own position explicitly, I have identified at least two central aspects that have influenced my work. First, as an aspiring PhD candidate myself, I was surely more empathetic for the concerns expressed by those interviewees in similar situations. Especially when being inscribed in a doctoral study programme with no employment agreement to do my research (sometimes also called an “external” PhD student), I was fully aware of the downsides and structural disadvantages faced by other loosely affiliated and/or unemployed researchers. This circumstance has certainly sharpened my mind and willingness to highlight often overlooked, novel forms of exclusions inscribed in Open Access publishing arrangements (see, e.g., my analytical category on “home-made exclusions” in *sub-chapter 9.4.3*).

Second, as already introduced before, my own extensive professional and educational experience in LIS was a source of knowledge and inquisitive questions about practical issues related to Open Access debates. My affinity with the (social) world of academic libraries has prompted me to pay more attention to the activities of and challenges faced by this particular actor group. Because of this special concern, I have dedicated a whole chapter to considering the controversies under study from the perspective of academic librarians, along with their shifting roles and responsibilities in light of ongoing ruptures in scholarly publishing (see chapter 10. *Inverting infrastructural relations*). My personal migration history as well – whether wittingly or unwittingly – has likely played a part in this regard. Most importantly, it allowed me to compare various national (Open Access) visions from a greater critical distance, instead of easily accepting Dutch (or any other nation’s) ambitious claims and self-proclaimed global leadership when measuring scientific publishing records and other indicators. I will add more reflections on my own standpoint in the Open Access debates in the final discussion chapter.

Finally, as a collateral – and perhaps even welcome – implication of immersing myself in the Grounded Theory approaches and their underlying philosophies, I have come to substantially rearrange the setup of the thesis. My initial intention was to elaborate on findings from the interviews and other empirical materials in keeping with the seemingly distinct categories of “designers” and “users” of the VSNU-Elsevier pilot agreement on Open Access publishing in the Netherlands. Accordingly, I classified the interviewees into two respective groups along with separate questionnaires devised for each of them. The index of the thesis and early draft chapters also reflected this overall logic. However, as the interview stage progressed, several common themes and threads began to emerge between the two groups, as well as a wide spectrum of opinions or even opposing views within them. The smouldering sense of mismatch and discrepancy between the findings in my fieldwork and the initial guiding principle culminated in a loud call for a different overarching framework. By this time, the need to restructure the whole

empirical case study was obvious. Yet how should a different scaffolding look – one which would let the many tensions, controversies, and ambivalences unfold in a more illuminating way, but still allow me to tell a “coherent analytic story” (Clarke, 2005, p. 15)?

The arduous phase of renewed theoretical explorations and experimentations that followed ultimately led me to re-discover the writings of Susan Leigh Star and others on studying infrastructures and the “infrastructuring” work. Here again, I found great inspiration (and relief) in methodological considerations by Karasti and Blomberg (2018) as well as a theoretically innovative conceptualisation of re-infrastructuring offered by Miria Grisot and Polyxeni Vassilakopoulou (2017; to be introduced hereafter). In essence, and in line with Grounded Theory approaches, my answer to this unexpected research problem has become to re-focus on various processes that I have observed throughout my fieldwork, instead of centring on individuals or actor groups. Subsequently, I was also able to gradually move my empirical analysis from a descriptive and still very superficial level towards a conceptually and theoretically more sophisticated one.

At times, constantly moving back and forth (Charmaz, 2006) between empirical materials and theoretical concepts, checking leads and testing them against a myriad of possible conceptual lenses appeared endless. Yet with the benefit of hindsight, embarking on such extended reflections was a necessary intermediate step in order “to address head-on the inconsistencies, irregularities, and downright messiness of the empirical world” (Clarke, 2005, p. 15). In the end, it helped me to produce an interwoven synthesis of empirical and theoretical elements and to supplement them with some of my own original analytical propositions. In what follows, I will present the theories and concepts that have been instrumental in this regard.

4. Theoretical framing

After having presented the underlying research questions and methods that informed my work for this thesis, I will now introduce the most important theories and sensitising concepts that played an equally central role in elaborating my research findings. Similar to the argument that one needs to assemble one’s own “comparator” when practising comparison (Deville et al., 2016), I had to build an overarching conceptual *scaffolding* that would guide my analysis. At its heart lies the basic idea of conceptualising the academic publishing system as a socio-technical infrastructure. In this chapter, I first provide major findings from infrastructure studies literature, such as the salient features that typically characterise infrastructures and the challenges inherent in infrastructure building and/or maintenance activities. I then introduce some additional aspects from earlier studies of information and knowledge infrastructures and apply these tenets to the academic publishing system. Finally, I develop this line of thinking further by indicating how I intend to frame the empirical case study of Open Access negotiations in the Netherlands as an example of *re-infrastructuring* (Grisot & Vassilakopoulou, 2017).

4.1 Thinking with, about, and against infrastructures³⁵

It has become customary to refer to an almost “classic” definition of infrastructure and its dimensions as initially proposed by Susan Leigh Star and Karen Ruhleder (1996), and further elaborated by Star (1999) some years later (see, e.g., Bowker et al., 2010; Larkin, 2013; Bowker et al., 2015; Grisot & Vassilakopoulou, 2017; Slota & Bowker, 2017; Anand et al., 2018; Karasti & Blomberg, 2018). Based on their study of a large-scale collaborative software development effort that was intended to support a geographically dispersed community of biologists named the Worm Community System (WCS), Star and Ruhleder (1996) reported on a number of difficulties that they encountered in their fieldwork. Despite adhering to the principles of participatory design – such as conducting a detailed ethnography of work practices, gathering user feedback, and extensive testing and prototyping activities – the authors observed that only a “few biologists ended up using the system” (Star, 1999, p. 380). The hurdles, it seemed, related not to the interface of WCS itself, but rather stemmed from incompatibilities with existing platforms, computing centres, and “bottlenecked resources” (ibid.). As a result, Star recalled, they “were forced to develop a more relational definition of infrastructure, and at the same time, challenge received views of good use of ethnography in systems development” (ibid.).

What emerged from Star and Ruhleder’s involvement in these struggles has become an illustrative summary of salient features or main dimensions of infrastructures which played a vital role in subsequent infrastructure studies (Star, 1999; Star & Bowker, 2006; Bowker et al., 2015). The list of an infrastructure’s defining features that crystallised out of their initial deliberations contained the following (Star & Ruhleder, 1996, p. 113):

- *Embeddedness* – meaning that an infrastructure is typically “sunk into” and inside of other structures, social arrangements, and technologies;
- *Transparency* – in the sense that it does not have to be reinvented each time or assembled for each task, but invisibly supports those tasks and so is “transparent to use”;
- *Reach or scope* – where an infrastructure reaches beyond a single event or one-site practice, both in spatial and/or temporal terms;
- *Learned as part of membership* – where acquiring a naturalised familiarity with infrastructural artefacts and organisational arrangements is a *sine qua non* for participation in a community of practice. While new (and old) members take it for granted, “strangers and outsiders encounter infrastructure as a target object to be learned about”;
- *Links with conventions of practice* – where an infrastructure “both shapes and is shaped by” the conventions of a community of practice, such as day-night work cycles that are reflected in electrical power consumption rates or the legacy of early typewriters in the design of today’s (computer) keyboards and office furniture, respectively;
- *Embodiment of standards* – where an infrastructure plugs into other infrastructures and tools in a standardised and transparent fashion, often modified by scope or by conflicting conventions;

35 This heading was inspired by an internal workshop organised by the STS department at the University of Vienna in June 2019.

- *Built on an installed base* – which puts emphasis on the inertia of “the installed base” that a given infrastructure “wrestles with” when inheriting strengths and limitations from that base. New developments, thus, need to be designed for “backward compatibility”, instead of allowing an infrastructure to grow *de novo*;
- *Becomes visible upon breakdown* – which addresses “the normally invisible quality of working infrastructure”. Here, the politics of and organisational changes related to infrastructure development become most visible when it *breaks*;
- *Is fixed in modular increments, not all at once or globally* – the layered and complex nature of infrastructure implicates that it has different meanings in different local settings and is “never changed from above”. Instead, changing it necessitates negotiation and adjustments with other aspects and elements of involved systems, so that eventually “nobody is really in charge of infrastructure”.³⁶

When defining infrastructure, Star has further conveyed a metaphoric image of a “substrate”. As can be explained by reference to the examples hereinafter:

“People commonly envision infrastructure as a system of substrates – railroad lines, pipes and plumbing, electrical power plants, and wires. It is by definition invisible, part of the background for other kinds of work. It is ready-to-hand. This image holds up well enough for many purposes – turn on the faucet for a drink of water and you use a vast infrastructure of plumbing and water regulation without usually thinking much of it” (Star, 1999, p. 380).

That is, a well-working infrastructure would typically operate silently in the background of routinised events and become taken for granted in a given set of activities or a community of practice. The workflows that take place behind the scenes normally demand only slight (if any) attention unless something doesn’t function as smoothly as it is supposed to. It doesn’t stand in the spotlight, but is rather there as the *substrate* to support other, more important, primary activities, or to enable the *substance* to happen. In this respect, Star’s suggestions for conducting the ethnography of infrastructure can be interpreted – at first sight – as “a call to study boring things” (Star, 1999, p. 377). Yet the expected “ecological effect” of such undertakings was to facilitate a view of infrastructure as part of human organisation, along with its problematic aspects (ibid., p. 379). As she remarked herself: “Study an information system and neglect its standards, wires, and settings, and you miss equally essential aspects of aesthetics, justice, and change. Perhaps if we stopped thinking of computers as information highways and began to think of them more modestly as symbolic sewers, this realm would open up a bit” (Star, 1999, p. 379).

Since such methodological and conceptual questions were posed by Star and others, the conventional understandings of infrastructure as “tubes and wires” (Bowker et al., 2010, p. 98) have been extended to incorporate the technologies and organisations which enable underlying (knowledge) work. Furthermore, adapted definitions of specific types of infrastructure ensued. In view of scholarly communication and academic publishing realms, their closest relatives include “information infrastructure” (Bowker et al., 2010; Monteiro et al., 2014), “cyberinfrastructure” (NSF

36 This last dimension was added by Star later on (Star 1999, p. 382; see also Karasti & Blomberg, p. 259).

CI Council, 2006, cited in Bowker et al., 2010) and “knowledge infrastructures” (Edwards et al., 2013). When the terms “information” and “infrastructure” are put together, according to Geoffrey C. Bowker and colleagues, this compound “refers loosely to digital facilities and services usually associated with the internet: computational services, help desks, and data repositories to name a few” (Bowker et al., 2010, p. 98). On a related note, when formulating a vision toward information infrastructure studies, the authors argued for “adopting a long term rather than immediate timeframe and thinking about infrastructure not only in terms of human versus technological components but in terms of a set of interrelated social, organizational, and technical components or systems (whether the data will be shared, systems interoperable, standards proprietary, or maintenance and redesign factored in)” (ibid., p. 99). Such a broad and long-term perspective, in turn, necessitated “a major shift in thinking”, if “the long now of information infrastructure”, organisational and community issues, as well as social and political values were to be properly considered (ibid., pp. 103–112).

Similarly, the importance of attending to social and technical dimensions equally was highlighted in the case of scientific “cyberinfrastructure”:

“Cyberinfrastructure integrates hardware for computing, data and networks, digitally enabled sensors, observatories and experimental facilities, and an interoperable suite of software and middleware services and tools. Investments in interdisciplinary teams and cyberinfrastructure professionals with expertise in algorithm development, system operations, and applications development are also essential to exploit the full power of cyberinfrastructure to create, disseminate, and preserve scientific data, information, and knowledge” (NSF CI Council, 2006, p. 6, cited in Bowker et al., 2010, p. 100).

While this definition “somewhat sidelines” the social and organisational aspects of infrastructure development, according to Bowker et al. (2010, p. 100), scholars in this field arguably “cannot do the history of software without doing the history of their surrounding organizations” (ibid., p. 102). Therefore, the authors provide an alternative working definition of cyberinfrastructure as “the set of organizational practices, technical infrastructure, and social norms that collectively provide for the smooth operation of scientific work at a distance” (ibid.). To inform future infrastructure studies, they further referred to a report to the National Science Foundation (NSF) in the USA that advocated for researching the history and theory of infrastructure “as one approach to understanding the dynamics, tension, and the design” of new scientific cyberinfrastructures (Edwards et al., 2007, cited in Bowker et al., 2010, p. 100).

A further valuable source in this realm is a yet another report of a workshop sponsored by the NSF and the Sloan Foundation during which an interdisciplinary research group convened to discuss the intellectual frameworks and research challenges related to changing knowledge infrastructures. In this regard, the workshop participants claimed to lay the “groundwork for a new approach to understanding the massive transformations currently underway in how people create, share, and dispute knowledge” (Edwards et al., 2013, p. 1). Also here, acknowledging the “modular, multilayered, rough-cut character” of infrastructure was seen as key to advancing this agenda (ibid., p. 5). As the authors write:

“Infrastructures are not systems, in the sense of fully coherent, deliberately engineered, end-to-end processes. Rather, infrastructures are ecologies or complex adaptive systems; they consist of numerous systems, each with unique origins and goals, which are made to interoperate by means of standards, socket layers, social practices, norms, and individual behaviors that smooth out the connections among them. This adaptive process is continuous, as individual elements change and new ones are introduced — and it is not necessarily always successful” (Edwards et al., 2013, p. 5).

With regard to knowledge infrastructures in particular, Edwards (2010, cited in Edwards et al., 2013, p. 5) defined these as “robust networks of people, artifacts, and institutions that generate, share, and maintain specific knowledge about the human and natural worlds”. Among the (still pressing) issues that Edwards and colleagues identified at that time was a transition from “printed journal articles, books, textbooks, and other fixed products — to a world where *knowledge is perpetually in motion. Today, what we call ‘knowledge’ is constantly being questioned, challenged, rethought, and rewritten*” (Edwards et al., 2013, pp. 5–6; emphasis in original). As a result, the authors argued, “the divide between knowledge producers and knowledge consumers is increasingly and radically blurred”, with “new forms of collective discovery and knowledge production ... springing up within and across many academic disciplines”, including “crowdsourced encyclopedias, wikis of all sorts, shared scientific workflows, and citizen science” (Edwards et al., 2013, p. 6).

As these efforts to define knowledge and information infrastructures indicate, the emergence and proliferation of novel internet-based technologies and collaborative practices over the last few decades have contributed to broadening the range of actors and processes as well as temporal and spatial horizons that were taken into account, and, at times, to revising received wisdom (Star, 1999; Bowker et al., 2010). However, considering the dynamic and multifaceted nature of infrastructures from an ever broader perspective contains inherent challenges, especially when applying ethnographic research methods to the study of large-scale systems and infrastructure (Star & Ruhleder, 1996; Edwards et al., 2013). As already noted in sub-chapter 3.2 *Conceptualising a case study, or “constructing the field”*, methodological considerations on how to empirically study (information) infrastructures have been of huge help in this respect (see especially Karasti & Blomberg, 2018). Yet incorporating insights from more recent ethnographic studies of infrastructures has also created a fresh impetus for exploring several important theoretical innovations.

Many such theoretical innovations were derived from the field of Computer Supported Cooperative Work (CSCW) – a topic area that Star studied herself with a special focus on invisible work and workers (together with her mentor Anselm Strauss), and where she was a founding co-editor of its major academic journal (Star & Strauss, 2016 [1999]; Ribes & Lee, 2010). In what follows, I will briefly outline two notable contributions that have played an instrumental role for laying out the theoretical framing in this thesis: a conceptual and methodological overview for studying (information) infrastructures ethnographically by Karasti and Blomberg (2018), and the notion of “re-infrastructuring” as proposed by Grisot and Vassilakopoulou (2017).

Taking the early writings by Star and Ruhleder as their starting point, Karasti and Blomberg (2018, p. 235) have expanded on the well-known features of infrastructures and extended the initial conceptual groundwork to facilitate “exploration of the challenges faced by those wanting to study infrastructures ethnographically and to aid in developing possible methodological and theoretical ways forward”. For this purpose, the authors synthesised characteristics of information infrastructures from a literature review and enhanced these with findings from their own research. The resulting set of five dimensions of information infrastructures, grouped and updated to stimulate further ethnographic studies thereof (Karasti & Blomberg, 2018, p. 236; emphasis in original), is as follows:

- (1) the profoundly *relational* quality of infrastructures,
- (2) the intrinsic (at least partial) *invisibility* of infrastructures,
- (3) the *connectedness* of infrastructures, sometimes described as “scaling”,
- (4) the *emerging and accreting* quality of infrastructures,
- (5) the role of *intentionality and intervention* in delineating infrastructures.

According to Karasti and Blomberg (2018), the *relational*, *invisible*, and *connected* dimensions (1,2,3) already figured centrally in Star and colleagues’ original characterisation of infrastructures. For instance, in their initial contribution, Star and Ruhleder (1996, p. 113) argued that “analytically, infrastructure appears only as a relational property, not as a thing stripped of use”. The *emerging and accreting* quality of infrastructures (4), on the other hand, has become more prominent in light of contemporary research on information infrastructures (Karasti & Blomberg, 2018, p. 236). The last dimension, *intentionality and intervention* (5), was added by the authors themselves in order to address the role of design in various “infrastructuring” activities (ibid.).

Distinguishing between the noun “infrastructure” and the verb “infrastructuring”, as Karasti and Blomberg (2018) note, is important for analytic reasons. While speaking of *infrastructure* mostly relates to describing characteristics of a certain phenomenon, *infrastructuring* is used “to direct attention to the more ‘processual’ qualities through which the phenomenon emerges” (Star & Bowker 2002; Karasti & Baker 2004; Karasti & Syrjänen 2004; Pipek & Wulf 2009, cited in Karasti & Blomberg, 2018, p. 235). Correspondingly, the studies of infrastructuring, of particular interest in the field of STS (Bowker et al., 2010), are concerned with “the ongoing and continual processes of creating and enacting information infrastructures” (Karasti & Blomberg, 2018, p. 234).

That is, drawing on the concept of infrastructure as the backbone of the theoretical framework in this thesis brings with it a set of tools and a vocabulary for describing main dimensions that are commonly found in various infrastructures. But even more crucially, it allows us to gradually move from a descriptive towards a processual perspective that helps in examining the activities involved in building and/or maintaining a given infrastructure. Such a switch has significant effects on resulting analyses. As Matthias Korn and colleagues explicate: “By shifting the focus to *infrastructuring*, infrastructures are viewed as practical achievements of various actors. Infrastructures are not simply in existence, but they are built, installed, maintained, repaired, used, worked around/against, appropriated and so on” (Korn et al, 2019, p. 17; emphasis in original).

Furthermore, focusing not on infrastructure but on “*infrastructuring*” chimes well with the proposition to adopt the gerund language when coding and analysing data in Grounded Theory approaches (see sub-chapter 3.1 *Grounded Theory and Situational Analysis*). As commented by Karasti and Blomberg (2018, p. 240): “adding [to] the role of regulations, standards setting, funding and policy formation, the ‘ing’ terminology, including adapting, tailoring, appropriating, tuning, modifying, tweaking, making, fixing, monitoring, maintaining, repairing, hacking, vandalizing and instrumenting, points to a rich set of intentionalities that incrementally shape infrastructures”. Hence, as the authors continue, the variety of such process-oriented terminologies also “highlights the many ways in which humans and non-humans engage in various translation activities” (ibid.), either through intentional acts or when infrastructures expand into different contexts and arenas. Therefore, as Miria Grisot and Polyxeni Vassilakopoulou (2017, p. 11, emphasis in original) note themselves, “infrastructure is best studied not as interlinked pieces of hardware or information processing capabilities, but rather as a process of *infrastructuring*, where sociotechnical relations are formed and maintained”.

On a similar note, recognising “how technology is intimately intertwined with organizational structures and work practices” has been brought up as another fundamental insight from CSCW studies (Grisot & Vassilakopoulou, 2017, p. 12). For instance, scholars in this field have illustrated how patient record systems have historically co-evolved over the last century together with the development of hospital organisation and of medical and other health professions (Berg & Winthereik, 2003, cited in Grisot & Vassilakopoulou, 2017). Such observations closely resemble the idea of “infrastructural inversion” (Bowker, 1994) – an approach that focuses “on the activities that result to the functioning of the infrastructure ... rather than those supported by the infrastructure” (Grisot & Vassilakopoulou, 2017, p. 13). In other words, “infrastructural inversion encourages attentiveness to information infrastructure via an analytical entry-point of focus on materiality, mundane operational processes, and invisible, unnoticed work” (Karasti & Blomberg, 2018, p. 251). I will return to this notion and showcase its applicability in more detail when looking into the role of academic libraries and librarians in *Chapter 10* of this thesis.

The most instructive insight that I have gained from this body of literature derives from Grisot and Vassilakopoulou’s (2017) own study on the development of public eHealth services in Norway. By analysing the work of a project team that was tasked with designing novel patient-oriented capabilities for web-based communication with healthcare practitioners, they came to define such activities in terms of “re-infrastructuring”. By suggesting this notion, the authors aimed “to signify a particular occasion of infrastructuring that entails facilitating a new logic within established social and technological networks” (Grisot & Vassilakopoulou, 2017, p. 7). Characteristic for such processes was considering embeddedness both as a resource to leverage novelty and as a root cause for a set of specific challenges when attempting to adjust a mature infrastructure (ibid., p. 24). According to Grisot and Vassilakopoulou (2017, p. 7), such “design concerns” include, most notably: “bringing novelty without being trapped in the existing arrangements or harming what is in place”, and “bringing changes that are within a specific direction although they happen through distributed decision taking”.

This genuine intellectual contribution by Grisot and Vassilakopoulou (2017) has played a pivotal role in my search for a suitable framing to illuminate the negotiations between VSNU and Elsevier and the challenges faced by members of both negotiation teams. Most importantly, this analytical approach is responsive to the fact that and the ways in which “intervening in an existing infrastructure requires specific design practices which should take into account the maturity of the infrastructure at hand” (ibid., p. 8). Therefore, by carefully attending to attempted “turns” in infrastructure development, the variable dynamics and evolutionary trajectories of infrastructuring processes can be captured more precisely, enriching the processual perspective on infrastructure building activities in all its facets (ibid., pp. 23–25).

I will apply the insights from this area of infrastructure studies in *Chapter 8. Re-infrastructuring “openness”: Crafting the VSNU-Elsevier agreement for 2016–2018*. Before moving forward, in the next sub-chapter I provide my own working definition of how the academic publishing system can be viewed as a socio-technical infrastructure. What does this conceptual lens help to make (more) visible and study-able that would otherwise not be possible? And, conversely, what important aspects might be neglected or overlooked in this way? By answering such questions, I will think not only *with* and *about* infrastructures, but also go into some valid criticisms *against* using (certain features of) infrastructure studies and (re-)infrastructuring perspectives. These include, for instance, the objections raised by anthropologist Brian Larkin (2013) with regard to the potentially overstated invisibility of infrastructures or allegedly clear distinctions between their substrate and substance relations. In order to take more recent discussions into account, I will draw on research on practical, methodological, and theoretical issues when studying (information) infrastructures, and particularly the customised infrastructural dimensions list as compiled by Karasti and Blomberg (2018; see also Lee, & Schmidt, 2018; Silvast, & Virtanen, 2019). Where suitable, I will also enhance these categorisations and deliberations with specific examples pertaining to academic libraries, scholarly communication, and publishing functions and processes.

4.2 Seeing through the (re-)infrastructuring lens – On studying the academic publishing system as a socio-technical infrastructure

When consulting literature on (scientific) information and knowledge infrastructures, several guiding themes come forth. First, from around the turn of the millennium, transformations from paper-based or analogue modes of communication and collaboration to digital and web-based tools and practices were extensively discussed (e.g., Star & Ruhleder, 1996; Star & Bowker, 2006; Bowker et al., 2010; Edwards et al., 2013; Grisot & Vassilakopoulou, 2017; Parmiggiani, 2017). Related to this, secondly, emphasis has been placed on the shifting roles of various actors in light of such digital transformations as well as on an emergence of a novel type of knowledge workers. As Bowker and colleagues note: “one aspect of infrastructure studies inquiry is consideration of new types of roles evolving with the process of building information infrastructure – roles such as digital librarians, information managers, and network specialists. These represent new strategies – and new attitudes – that are organizationally situated to support an internet generation of participants” (Bowker et al., 2010, p. 106).

Third, such considerations give rise to questions and concerns about broader organisational issues and systemic dynamics that ongoing, potentially tectonic shifts (might still) unleash. For instance, when exploring major social and institutional changes in knowledge infrastructure linked to the rise of internet as a new medium, Edwards and his co-authors (2013, p. 2) include, among others, the “changing structures, services, and physical spaces” of libraries as well as a number of challenges faced by the publishing industry, such as “e-books vs. paper; prohibitive pricing of scientific journals; the collapse of university presses”. As the report authors remarked, these, in turn, have resulted in “massive shifts in publishing practices”:

“Historically, knowledge institutions depended on costly, hierarchically organized forms of credentialing, certification, and publishing. These set severe limits not only on outputs (in the form of published articles, books, etc.), but also on who could count as a valid participant in knowledge assessment practices such as peer review. Today, these mechanisms are challenged on all fronts” (Edwards et al., 2013, p. 7).

As a result, much less costly modes of publication began to emerge that “permit[ted] the early release and broad dissemination of virtually all data and models used in science” as well as allowed research results “to be readily reproduced, at least in the computational sciences” (ibid.). Although the authors did not refer to a related strand of debates, this assertion closely mirrors the expectations associated with an internet-enabled world-wide availability of electronic scholarly publications and other research products under the headings of Open Access and Open Science (BOAI, 2002; The Royal Society, 2012). Indeed, the role of so-called preprints that were published on subject-specific repositories such as bioRxiv – also known as the Green road to Open Access (Guédon, 2008a) – and that made it possible for epidemiologists, virologists, and other scientists to rapidly share their research results on the worrying development of a novel coronavirus as of late 2019 has been actively discussed in light of the COVID-19 pandemic (Heimstädt, 2020; Watson, 2022).

The immediate sharing of one’s preprints and working papers can be also considered an ideal-typical manifestation of one of the fundamental principles of doing science that had already been described in the first half of the 20th century. In his writings on the normative structure of science, Robert K. Merton (1973 [1942], p. 270) formulated a set of “institutional imperatives – universalism, communism, disinterestedness, organized skepticism” that were said “to comprise the ethos of modern science”. Most notably, the “communism” imperative, “in the nontechnical and extended sense of common ownership of goods”, postulated that “substantive findings of science are a product of social collaboration and are assigned to the community” (ibid., p. 273). With regard to the scholarly communication and dissemination of research results, this norm also holds some further implications:

“The institutional conception of science as part of the public domain is linked with the imperative for communication of findings. Secrecy is the antithesis of this norm; full and open communication its enactment” (Merton, 1973 [1942], p. 274).

The normative claims as laid out by Merton in the ethos of science were also taken up by

Roosendaal and Geurts (1997, 1999) when examining a transition “from a paper-based system to communication in an electronic environment”.³⁷ The authors proposed a classification of the forces and functions in scientific communication and analysed their interplay (ibid.). A better understanding of an ongoing structural transformation of scientific communication, according to Roosendaal and Geurts (1997, n.p.), was said to help with assessing “the market place” and potential future developments. In a nutshell, the four main functions of scientific communication comprised the following:

- *registration* – as “the act of registering the research results of an author”, this was deemed “the first step in the formal communication process”. Its purpose is to notify the scientific community of novel research results and to claim priority over reported discoveries or ideas (along with an expectation of receiving acknowledgement via citations);
- *archiving* – as a distributed network of physical and/or digital facilities or a (metaphoric) world-wide archive that is designed to satisfy the information needs of present-day and future readers. It supplies interested readers with publications when required and takes care of the long-term preservation of scholarly records. Whereas the archiving function used to be closely tied with the tasks of libraries, “nowadays both publishers and libraries are developing and creating their own electronic archives”;
- *certification* – as a gate-keeping process in scientific communication and information. Its purpose is to validate scientific knowledge that is presented in a scholarly publication and to grant authority and legitimacy for its author(s) (usually through the peer review procedure). In an electronic environment, the creation and interlinking of multiple versions of a publication as well as the possibility of sharing referees’ comments was expected to create “some interesting issues” and to call “for new ways for the sharing of credit and accountability”;
- *awareness (dissemination)* – as “the core function in the research and communication process” that should facilitate reaching broad reader audiences and serve the reception of the scientific claims. This function is “associated with search processes, linking, keywords, indexing, thesauri, metadata and other tools of retrieval”. Also here, the shift to an electronic environment was considered to promise “yet untapped possibilities” with regard to a better distinction of modular information containers in scientific articles (such as searching at the level of chemical structures or diagrams) and promoting their discoverability and reuse (Roosendaal & Geurts, 1999, pp. 513–516; emphases in original).

Last, although the use of quantitative indicators on the basis of research publications was not singled out by Roosendaal and Geurts (1999) as a separate function in scientific communication, its growing role especially in research policy-making has been repeatedly emphasised in the literature. As the authors noted on the potentially significant consequences of observed transformations for this field:

37 As a side note, the first author was affiliated with Elsevier himself, whereas the proposed categorisation of functions derived from “conclusions based on in-depth interviews held with individual researchers, research institutions and companies” as part of an Elsevier Science (1997) “Report of the third round of the Editorial strategy project” (Roosendaal & Geurts, 1999, p. 507).

“Scientific papers are the natural resources for scientometrics and bibliometrics and therefore developments in the nature of scientific papers will affect the way these studies can be conducted. Similarly, scientometrics and bibliometrics may well provide substantial contributions to these developments and will provide some of the measurement tools to observe the consequences for research and research policies” (Roosendaal & Geurts, 1999, p. 507).

What is more, in light of “the transformation of the familiar, linear scientific information chain into an interactive scientific communication network in response to concomitant changes in scientific research and education” (Roosendaal & Geurts, 1997, n.p.), the authors concluded that in “an electronic dissemination regime” the division of tasks and responsibilities among current major actors or “stakeholders” might be substantially reorganised. In particular, they asked: “How will these functions develop? Do we need in the market a new division of functional tasks or a new functional division?” (ibid.).

Such considerations were taken up, among others, in a report of an expert group on the future of scholarly publishing and scholarly communication that was mandated by the European Commission (2019).³⁸ While the report authors reaffirmed the validity and fundamental importance of the four key functions of scholarly communication, these were said to be complemented by research assessment and evaluation. Of particular note was the observation that scholarly publication records are increasingly being used for decision-making regarding rewards and promotions at individual and institutional levels. In their own words:

“In recent decades, the *evaluation* of research has emerged as an additional function of scholarly communication because research institutions, funders, publishers, and researchers themselves have looked for mechanisms that can underpin judgements about scholarly merits or significance, as well as their wider impact. As will be seen later, however, the evaluation function is one of the most contentious aspects of scholarly publishing” (European Commission, 2019, p. 24; emphasis in original).

Similarly to Roosendaal and Geurts’ (1997) deliberations, the report accentuated the multi-layered transformations in the current landscape of scholarly communication and academic publishing (European Commission, 2019). In particular, it challenged the traditional roles of publishers and stressed that key scholarly communication functions might be disaggregated from the actors that had been hitherto mainly responsible for providing them. In an online digital environment, the expert group stressed, “the ease and immediacy with which information can be produced and transmitted across the world implies that these key functions can be fulfilled by other means and distributed differently among the various actors involved in scholarly communication” (ibid., p. 24). Eventually, to guide future developments, it argued for treating “knowledge and understanding created by researchers” as public goods, instead of exploiting them to serve the economic interests of major scientific publishers, and for putting researchers and their needs “at the heart of [the] scholarly communication of the future” (ibid., p. 24).

38 I was member of the group myself and one of the co-authors of this report.

The latter maxim leads me to providing a working definition of the academic publishing system as a socio-technical infrastructure as considered from a researcher-centric point of view. While the functional view described above lays the focus on *the scholarly record*, i.e. the stages that an individual scholarly publication such as a journal article has to go through, from being registered to certified to finally fed into various research evaluation exercises, another possible approach would be to focus on the individual or institutional *actors*. Indeed, there are plenty of candidates to choose from. Ensuring a smooth operation of academic publishing workflows depends on a complex network of authors, editorial boards, higher education and research institutions, their libraries, research funders, learned societies, and commercial and non-profit publishers of all types, as well as various intermediaries such as subscription agents, software, and service providers (Roosendaal & Geurts, 1997; European Commission, 2019; Gray, 2020; Pinfield et al., 2021). Each of these actors contributes to the functioning of this ecosystem by investing their time, knowledge, and labour as well as financial, technical, and organisational resources. Nevertheless, they still pursue their own aims and objectives, which may partially overlap but also come into tension with each other.

At the same time, there is one particular actor group that is central to all processes named above: that of researchers as authors of scholarly publications. As Roosendaal and Geurts (1999, p. 508) note, “the author not only writes, but also cites, is being cited, is being evaluated and appraised by the system. The author is therefore the most intensive and, probably, most important user of the scientific communication system”. Adding to this list, I shall extend that academic authors arguably are the main readers and critics of research publications – for it is impossible to claim new or original findings without situating them in the broader historical and cultural landscape in one’s research field and giving credit to previous works, as outlined in the ethos of science (Merton, 1973 [1942]). Furthermore, since the peer review and editorial tasks are also typically performed by active researchers themselves, they simultaneously wear many hats as authors, reviewers, and readers of scholarly and other publications, among their other duties (Guédon, 2001; Kingsley, 2007; Fyfe et al., 2017; Csiszar, 2018).

What is even more important when adopting a researcher-centric view is that attending to the many roles played by researchers in academic publishing workflows allows one to bring the processual perspective back into focus, an essential feature of Grounded Theory approaches (Clarke, 2005; Charmaz, 2006). Taken together, then, I propose to define academic publishing as *a socio-technical infrastructure that enables not only the communication of research findings, but that is also an integral part of evaluation procedures for establishing individual reputational profiles necessary for academic career progression*. While I am aware that other, alternative definitions would be possible when looking at academic publishing practices from a different actor’s perspective, here, in line with previous deliberations, I put the modern-day researchers at the centre of attention. Furthermore, when referring to *infrastructure*, I reiterate the arguments presented by Star and other scholars that this notion “is not absolute, but relative to working conditions. It never stands apart from the people who design, maintain and use it” (Star & Bowker, 2006, p. 230). Thus, the social and technical elements thereof have to be thought of as mutually dependent and inseparable from

each other.

Returning to the (re-)infrastructuring lens, and the five dimensions of information infrastructures as suggested by Karasti and Blomberg (2018), the profoundly relational quality of academic publishing as infrastructure and its embeddedness in academic life-worlds becomes obvious. Seen as emerging “in situ”, in relation to organised practices and particular activities (Star & Ruhleder, 1996), a well-established and functioning academic publishing infrastructure is a prerequisite for the continuous advancement of scholarly research fields. First, as stressed by Roosendaal and Geurts (1999), it serves the need to announce and circulate the newly obtained research findings, exposing them to the attention of and validation by (academic) peers, and facilitating their reception by scientific communities and broader societal groups. Only when one’s research findings have been published, and are not merely carried around with oneself, can they be incorporated into the body of existing (scientific) knowledge.

Second, the publishing activity is central to scholarly working practices and forms part of a researcher’s identity. The publication record, in turn, helps build one’s reputational profile and feeds into a formalised evaluation scheme in which one’s research contributions are assessed and decisions on funding, promotion, and career progression made. Because such research assessment rituals are inherent in establishing academic career trajectories (Wilsdon et al., 2015; European Commission, 2017; Biagioli & Lippman, 2020; Strinzl et al., 2021), interfering in the conventions of this community of practice and existing socio-technical arrangements might create frictions and become a major source of resistance and inertia, impeding even well-intended projects (Star, 1999). The embeddedness within and inter-dependencies between academic publishing activities and scholarly work practices, thus, help explain the difficulties that might occur when trying to achieve some kind of change in a mature academic publishing infrastructure (Grisot & Vassilakopoulou, 2017).

Further on, the intrinsic (partial) invisibility of the academic publishing infrastructure vis-à-vis academic researchers as its main users relates to the transparency dimension and substrate-substance relations in infrastructures (Star, 1999). When applied to the Open Access negotiations that are analysed in the empirical case study of this thesis, the “substrate” can be traced back to arranging and participating in the negotiation processes, devising implementation workflows (e.g., checking the eligibility of authors and applicable journals, ongoing monitoring and statistical analyses), as well as other efforts and tasks such as advocacy and explanatory work. The “substance” to be facilitated thereby, in turn, is the communication of scientific findings and enabling of the scientific work itself. However, building seamless workflows for the convenience of the authors requires a lot of invisible work, too. That is why I have dedicated a thesis chapter to addressing this topic (see chapter 10. *Inverting infrastructural relations: Zooming in on the invisible work of librarians as maintainers of the academic publishing infrastructure*).

The connectedness of academic publishing infrastructure and particularly of its Open Access publishing subset, then, is also clearly recognisable. As we shall see in more detail in the following empirical case study, a “scaling” mechanism was an inherent element of the Open Access

negotiations and the resulting agreement between VSNU and Elsevier. Not only was the number of applicable journals and the maximum amount of journal articles published in Open Access designed to increase during the initial “pilot” phase of three years, but it was also deemed necessary to expand Sander Dekker’s political ambitions beyond national borders in order to build up the momentum. That is, the strategy pursued by Dutch science policy-makers and negotiators was geared towards extending the reach and scope of the measures for an envisioned Open Access transition right from the beginning, both temporally and spatially.

Next, the intrinsically emerging and accreting quality of infrastructures can be characterised by fundamental uncertainties and complexities associated with infrastructure development and maintenance. Trying to align and bind together various old and new components simultaneously often results in incremental tinkering, preserving many elements of continuity and stability rather than yielding a radically different innovation (Grisot & Vassilakopoulou, 2017). What is more, the functioning of infrastructures is intimately linked to various kinds of temporalities. An infrastructure is often supposed to operate over a long-term period, thus encompassing potentially broader time scales than those of its individual socio-technical components. In the case of a stark misalignment between the temporal rhythms and dynamics of its constituent elements, this is likely to become another source of tensions and frictions (Bowker et al., 2010; Edwards et al., 2013).

When applied to academic publishing infrastructure, such tensions can be seen in an asynchronous constellation between, on the one hand, the relatively short-term horizons of political mandates and the urgency imposed when setting ambitious targets, and on the other, the longevity and conservative pace of academic institutions, libraries, and scholarly societies (Edwards et al., 2013) as well as the “projectified” character of modern academic research and work modes (Felt, 2021). Adding to these complexities, change processes in an infrastructure’s evolution usually take place “along multiple temporal scales where both change interventions and support to the daily running of the infrastructure have to be performed” (Karasti et al. 2010, cited in Grisot & Vassilakopoulou, 2017, p. 10). This makes infrastructure development “a visionary and political process with a moving target. It deals with an extended time span, as infrastructures are designed today to address future and unpredictable needs of users” (Ribes & Finholt, 2009, cited in Grisot & Vassilakopoulou, 2017, p. 10).

On a related note, Bowker and colleagues (2010) pointed to the notion of “heterochrony” as “variations in the parameters of temporal change associated with different parts of a system” (Lemke, 2000, cited in Bowker et al., 2010, p. 107). According to the authors, operating individual infrastructural components that rely upon different timescales bears both advantages and disadvantages. For instance, “given the extremely rapid developments in information technology, parts of a technological system are frequently outdated before the whole system can be assembled, thus requiring [the] development of ad hoc, last minute arrangements” (Bowker et al., 2010, p. 108). At the same time, in ecological systems, “these differences are why they can absorb shocks and survive” (ibid.). Therefore, “aligning what is naturally misaligned (funding cycles, scientists career trajectories, ecosystem cycles)” is fundamentally seen as “an issue of distribution between technologies, communities, organizations, institutions, and participating individuals” (Bowker et

al., 2010, p. 107; see also Karasti et al., 2010).

Finally, in addition to the issues inherent in infrastructure building, another layer of complexity concerns the role of intentionality and intervention by various actors (Karasti & Blomberg, 2018). Here, many authors have emphasised the fundamental tension between planned changes to infrastructures versus their emerging and unexpected adaptations. The conflict is foreseeable when looking at the projected usage scenarios and the unpredictability arising from multi-faceted relations and interactions in large socio-technical systems (e.g., Edwards et al., 2007, cited in Karasti & Blomberg, 2018). Similarly, imagining a global switch to a full Open Access system in one go, as envisioned in the Dutch Open Access transition plans and some more recent large-scale initiatives, the impossibility of a consensual collective action becomes apparent.

Ironically, then, while “the world brain” by H. G. Wells was cited in a report on future scholarly publishing as “a useful metaphor to sketch the shape of the desired outcome” (European Commission, 2019, p. 5), the same image served as an example for Star and Bowker (2006) to illustrate persistent failures when developing information infrastructures. In their own words: “there are utopian visions that when we get all the standards in place, there will be seamless access to the world’s store of information from any place on the planet” (Star & Bowker, 2006, p. 236). However, the authors argued that successful infrastructural development and maintenance has to face several basic challenges: it requires tedious work, where “someone has to sit there and do the necessary [tasks]”, a relatively stable technology with long lifespans (not as microfiches, compact discs, or punch cards once used to store information), and paying close attention to issues of communication (ibid., pp. 237–238).

At this point, the lessons learned from earlier infrastructure studies offer helpful hints for approaching digital and other kinds of transformations in scholarly publishing as discussed in this thesis. Would a shift from printing periodical issues of academic journals and distributing them to (mostly institutional) subscribers towards an instant dissemination of new articles over the internet be spared from the difficulties experienced elsewhere? And how should academic publishing infrastructure be studied through this lens when the move to an electronic environment is carried out along with a changeover of business and operational models from subscriptions to immediate Open Access? As Bowker and colleagues (2010, pp. 110–111) noted with regard to the complex state of affairs in this realm:

“We are dealing with a massively entrenched set of institutions, built around the last information age and fighting for its life. The rationale for publishing journals shifts ... when single papers can be issued to a mass audience at the push of a button. This then leads to questioning the reasons to work with the publishing industry, since the work of peer review is done on a volunteer basis by the scientific community, with the journals contributing only to the expense and hence unavailability of the final product. However, one does not just click one’s heels together and make a multi-billion dollar enterprise go away And yet the very nature of publishing is changing and will potentially change more”.

However, as the authors commented further on, “there is remarkable historical continuity among

major corporations” (Chandler & Hikino, 1994, cited in Bowker et al., 2010, p. 111), as well as “a wide range of cultural and organizational changes [that] need to be made if the new infrastructure is going to bear fruit” (ibid., p. 110). The social, cultural, organisational, and political dimensions of infrastructures, thus, seem to elucidate frequent cases of resistance and inertia well in various infrastructure building efforts (Star & Bowker, 2006; Bowker et al., 2010; Kaltenbrunner, 2015). In other words, “it is not enough to put out a new technical infrastructure – it needs to be woven into the daily practices of knowledge workers” (Bowker et al., 2010, p. 110).

In similar fashion, Karasti et al. (2018, p. 280) observed that “the goal of an infrastructuring effort is usually to achieve some kind of change to an existing practice through changing the infrastructure the practice relies on”. That is, through changing the apparent *technicalities* of the publishing mode from the subscription-based distribution of academic journals to free online access to their content, professional researchers were expected to change their social practices of how they presented and communicated their scholarly work. Related to this point, examining how the intended shift to Open Access affects actual publication practices is one of the main research questions that will be addressed throughout this thesis.

In addition, a number of incisive questions were also raised by Larkin (2013) when surveying findings from infrastructure studies from the standpoint of anthropological analysis. For instance, with a special attention to the social relations to which infrastructures and their partial breakdowns give rise, he argued for revising some popular statements among infrastructure scholars. In particular, with regard to the assertion that infrastructures are by definition invisible and typically become visible only on breaking down (Star & Ruhleder, 1996; Star, 1999), Larkin (2013) argued that this claim would barely hold. Building on several examples from anthropological literature, Larkin (2013, p. 336) concluded that “invisibility is certainly one aspect of infrastructure, but it is only one and at the extreme edge of a range of visibilities that move from unseen to grand spectacles and everything in between”.

What is more, by drawing attention to less regarded dimensions of infrastructures via sensitivity to their politics and aesthetics, Larkin’s objections deliver further important lessons for studying and understanding the multiple meanings of infrastructures. As he notes, particularly in the case of many ambitious infrastructural projects, infrastructures “emerge out of and store within them forms of desire and fantasy and can take on fetish-like aspects that sometimes can be wholly autonomous from their technical function” (Larkin, 2013, p. 329; see also Appel et al., 2018). Or, to put it in other words: “roads and railways are not just technical objects then but also operate on the level of fantasy and desire. They encode the dreams of individuals and societies and are the vehicles whereby those fantasies are transmitted and made emotionally real” (Larkin, 2013, p. 333).

It is important to note that many criticisms raised by Larkin (2013) have been addressed in subsequent infrastructure studies (see, e.g., Harvey et al., 2017; Karasti & Blomberg, 2018; Karasti et al., 2018). In the proper sense of scholarly debates, such arguments have contributed to advancing this field and its body of knowledge. In addition, applying the lens of re-infrastructuring (Grisot & Vassilakopoulou, 2017), especially in view of its more sophisticated

conceptualisation of infrastructuring processes, has been instrumental to understanding and structuring my observations when studying Open Access controversies in general and those present in the empirical case study in particular. Drawing on this theoretical tradition, as I came to learn, not only helps in describing the characteristic and salient – if not always clearly visible – features of, in this case, the academic publishing infrastructure, but discovering the patterns of typically occurring and thus not-so-surprising frictions and common paradoxes (Star, 1999) also puts an invaluable resource at one's disposal in light of a myriad of possible theoretical explanations and the sometimes overwhelming richness of the issues that can be explored.

At the same time, as with any carefully selected and hand-crafted approach, this lens is also subject to limitations. Therefore, whenever I discovered shortcomings in the analytical toolbox of infrastructure studies and sensed a need to supplement this main theoretical framing, I drew on additional conceptual lenses. These include, most notably, the sociology of translation (Callon, 1986) as borrowed from the Actor-Network Theory (ANT), the notions of a technical object and design scripts as proposed by Madeleine Akrich (1992), as well as studying interactions between a technology's designers and users and exploring how users and non-users matter in these processes (e.g., Oudshoorn & Pinch, 2003; Wyatt, 2003). In line with Grounded Theory approaches and particularly the incitement to move back and forth between empirical materials and theoretical interpretations (Charmaz, 2006), I will weave these supplementary conceptual lenses directly into the sub-chapters in the ensuing empirical case study.

On a final note, I would like to reassert my choice to rely on studies of information and knowledge infrastructures for illuminating my analysis of academic publishing as a socio-technical infrastructure. To cite Bowker and colleagues:

“Thus rather than the rhetoric of revolutionary fervor that permeates cyberinfrastructure circles, infrastructure studies take as its object change at a much more mundane scale: as forms of practice, routine, or distributed cognition associated with knowledge work. Is this position against a possibility of ‘revolution?’ Not at all. It is, rather, a research sensibility which seeks to make transformations of infrastructure visible relative to the everyday work of scientists, information technologists, or information managers” (Bowker et al., 2010, p. 112).

Given my particular attention to implications of the projected transition to full Open Access and the main research question on how this shift is re-ordering the academic publishing system, a theoretical framing that allows me to examine such mundane effects appears most suitable.

5. Framing the story – Situating my own research in a broader historical landscape

As demonstrated in the previous chapter, there is a growing interest from numerous scholars in exploring the issues related to the digitisation of information and knowledge infrastructures. Yet to understand the current tensions and controversies in the academic publishing landscape more

fully, one needs to take several steps back and consider the entanglement of multiple interests and forces within the longer history of scientific journals and their (changing) publishers. In what follows, I will therefore first discuss how the process of publishing research findings in scholarly journals has undergone major organisational and economic transformations. Next, I will take a closer look at how these developments prepared the ground for the emergence of Open Access as a concept and practice in academic publishing in general and its latest manifestations in particular.

5.1 Shifting plates in academic publishing landscapes – preparing the ground for Open Access

In 2015, the Royal Society in UK celebrated the 350th anniversary of its flagship periodical.³⁹ Founded in 1665 by the society's first secretary, Henry Oldenburg, the *Philosophical Transactions of the Royal Society of London* is widely regarded as the world's first and longest-running scientific journal (Bazerman, 1988; Guédon, 2001; Hall, 2002; Larivière et al., 2015; The Royal Society, 2015; Fyfe et al., 2017; Csiszar, 2018). In view of the upcoming anniversary, a research project was initiated, which, by studying original materials from the archives of *Philosophical Transactions* was able "to defamiliarise the scientific journal" and examine "how many of the things we now take for granted (for example, peer review, refereeing and the profitability of scientific journal publishing) came about" (Fyfe, 2018, pp. 33–34).

While the digital transformation from analogue to electronic modes of communication served as the starting point for many studies of infrastructures, including those concerned with scholarly publishing activities (e.g., Star & Ruhleder, 1996; Bowker et al., 2010; Edwards et al., 2013), Aileen Fyfe and her team argued that contemporary debates "have been too focused on the opportunities and financial challenges of the most recent changes in digital communications technologies" (Fyfe et al., 2017, p. 2). Instead of looking at shifts in organisational settings and work practices chiefly as consequences or implications of technological changes, the authors made a case for a broader historical perspective to inform related research and reform proposals on Open Access and the future of academic publishing more thoroughly (ibid.).

More particularly, the insights gained from these historical studies are most useful for enriching a critical analysis of the expansion and commercialisation of the academic publishing sector during the late 20th century (Fyfe, 2020, 2021). As Fyfe (2020, p. 148) notes, discussions on Open Access are frequently based on an incorrect assumption that scholarly publishing has been "a lucrative commercial undertaking for over three centuries". Yet the suggestion that a comprehensive shift from the currently dominant model of journal subscriptions to one based on the complimentary (online) distribution of scholarly articles would be "an unprecedented transformation of a well-established business model", as she continues, is actually "utterly mistaken" (ibid.). Building on the examination of internal meeting minutes, financial reports, and other documents, historians of science have demonstrated that, for most of the time during its existence, publishing *Philosophical*

39 An overview of celebratory events and related materials is available online at: <https://royalsociety.org/journals/publishing-activities/publishing350/> [last checked on 30/05/2022].

Transactions and its sister journals functioned as a philanthropic loss-making enterprise that required financial support from private endowments, government grants, and other subsidies (Fyfe, 2020, 2021). It is only since the 1950s that the newly established publishing division at the Royal Society was able to generate increasingly large surpluses (ibid.).

The graph in *Figure 1* illustrates an impressive metamorphosis of the journal's finances.

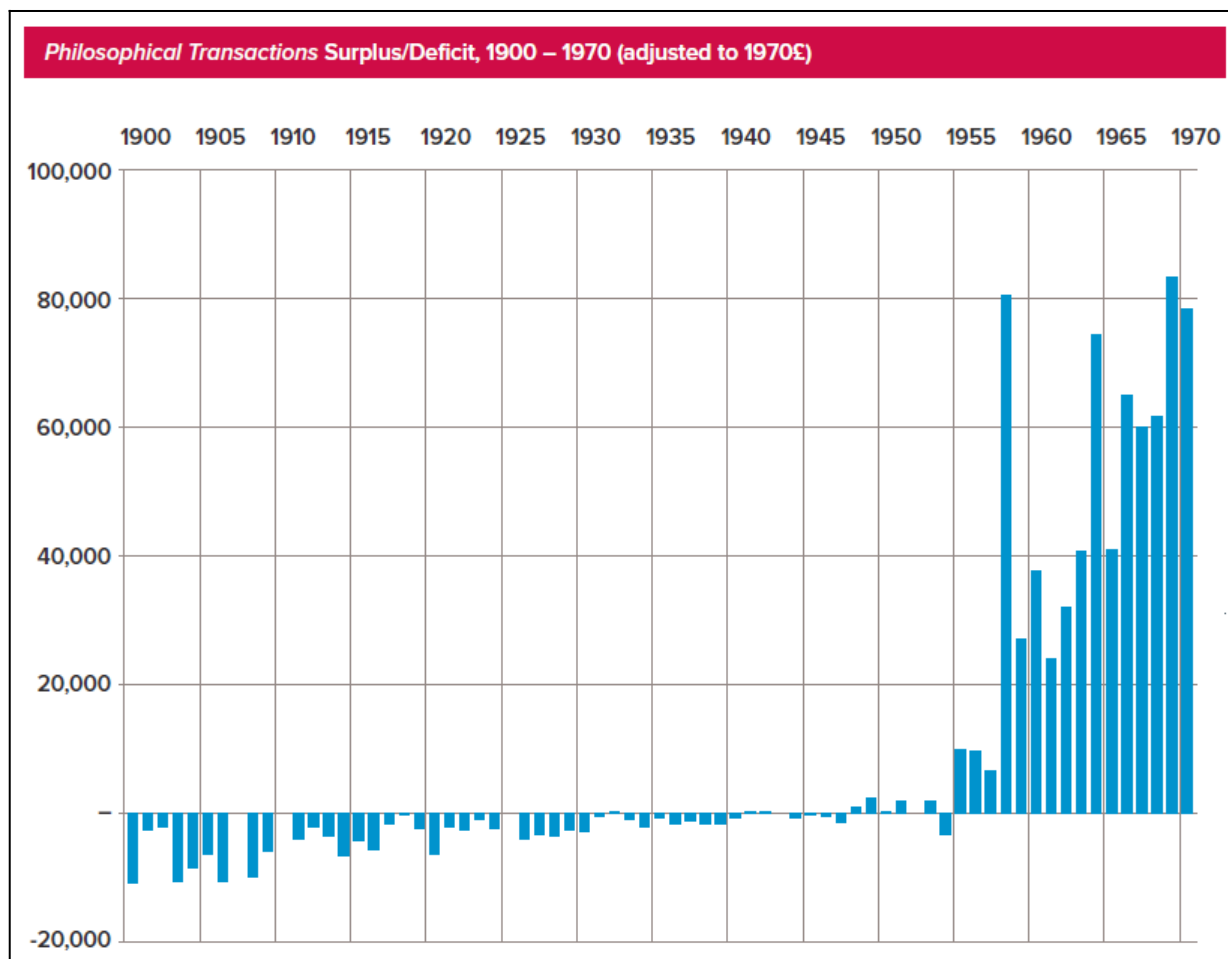


Figure 1: Profit and loss for *Philosophical Transactions*, 1900–1970 (*The Royal Society*, 2015, p. 23).

What were the reasons for such a dramatic turn? As Fyfe and colleagues (2017) explain, publishing scholarly journals has been traditionally organised by learned societies for the sake of disseminating new knowledge and, as such, was rarely financially profitable. For more than two hundred years, copies of *Philosophical Transactions* were to a large extent distributed for free as membership perks for the society's fellows, offprints for its authors, or as a gift to a network of individuals and institutions in Europe and overseas (Fyfe, 2020). Yet in the wake of the Great Depression, during the difficult economic situation of the 1930s, the Royal Society was forced to radically cut its generosity and substantially increase the amount of copies sold (ibid.). At the same time, after 1945 commercial firms became increasingly involved in this field, posing an existential threat to the long-established and well-respected roles of learned societies as publishers of influential research journals (Fyfe, 2021). Additionally, the attitudes towards the economics of

journal publishing began to change among politicians who had to implement austerity measures and officials at learned societies alike (ibid.). In the case of the Royal Society, this culminated in a 1963 report titled “Self-Help for Learned Journals” which ultimately urged editors of journals at associated scientific societies to become self-supporting and, thus, to focus on intensifying their sales and marketing efforts (ibid.). For that purpose, the “scientific advisory committee”, funded by the Nuffield Foundation, also provided dedicated advice and financial assistance for developing promotional leaflets and targeted publicity campaigns (ibid., pp. 9–16).

Furthermore, learning to adjust to the new economic realities of the postwar world was closely intertwined with other social and cultural developments of the 20th century, such as the increasing scale and internationalisation of scientific research endeavours, collaborations, and conferences, as well as the rapid emergence of new research disciplines and specialisations (Fyfe et al., 2017; Fyfe, 2021). Particularly in the early decades of the Cold War, rising government funding along with the creation of new vocational polytechnics in the UK (and similar steps elsewhere) also meant that the overall number of students, lecturers, researchers, and – accordingly – scientific publications was rapidly growing (Fyfe et al., 2017; see also Guédon, 2001; Bornmann & Mutz, 2015). In light of such circumstances, especially British and Dutch commercial publishing firms were said to quickly recognise promising business opportunities (ibid.). As a result, new (and some old) players such as Pergamon Press, North Holland Publishing, and Elsevier – all of which are now part of Elsevier’s parent company –launched dozens of scholarly journals and recruited eminent scientists to their editorial boards to serve the communication needs of expanding research fields and their communities (Meadows, 1980; Fredriksson, 2001; Guédon, 2001; Andriessse, 2008; Fyfe, 2021).

For a while, this supposedly mutually beneficial relationship between the growing higher education and research sector and the expansionist strategies of commercial publishers seemed to work well (Fyfe et al., 2017). However, “a new publishers’ Eldorado” (Guédon, 2001, p. 23) or the “golden period” (Fyfe et al., 2017, p. 14) appeared to draw to an end in the 1980s. By then, public funding was already struggling to keep pace with the growth rates of student and researcher populations, and university libraries – now the main institutional purchasers of scholarly journals, after another skilful adaptation of pricing models by publishers – found themselves faced with stagnating or reduced budgets (Guédon, 2001; Fyfe et al., 2017; Fyfe, 2021). This situation gave rise to a collateral phenomenon that academic librarians have dubbed the “serial pricing crisis” (Guédon, 2001) or, in short, the “serials crisis” (see, e.g., Okerson, 1986; and Houbeck, 1987, cited in ARL, 1989; Nentwich, 2001; Haider, 2008; Herb, 2010; Taubert, 2010; Morrison, 2012; Pinfield, 2013; Adema, 2014; Fyfe et al., 2017; Shu et al., 2018; European Commission, 2019; Cronk, 2020). It is to these discussions in the late 1980s that I now turn.

In February 1989, Marcia Tuttle, the chair of the newly established Subcommittee on Serials Pricing Issues created by the Resources and Technical Services Division (RTSD) of the American Library

Association (ALA), launched “the ALA/RTSD Newsletter on Serials Pricing Issues”.⁴⁰ In its first issue, Tuttle introduced the need for this newsletter by referring to the press release from the ALA Public Information Office that addressed “the rising costs of journals to libraries” as “perhaps the greatest concern among academic libraries today”.⁴¹ The creation of the subcommittee and, hence, the purpose of the newsletter was described as an effort towards “combatting the impact on their collections of unprecedented increases in the price of serials” (ibid.).

In the same inaugural edition, Tuttle further mentioned “a fascinating, detailed report” about a study commissioned by the Association of Research Libraries (ARL) on the cost of journals for the previous fifteen years (ibid.). As readers of its “Overview and Summary” section were informed:

“The serials prices problem is not new – it has recurred throughout the twentieth century. During the last five years, however, it has spiralled out of control. One critical factor is that the publication of certain key STM [scientific, technical and medical] serials is concentrated increasingly in the hands of a small group of publishers. More of the money spent on academic library subscriptions is going to fewer publishers and the cost of these serials is soaring” (ARL, 1989, p. 5).

One of the contractor reports, thus, concentrated on four large publishers of such serials (i.e. periodical publications or simply journals): “Elsevier (Netherlands), Pergamon (U.K.), Plenum (U.S.), and Springer-Verlag (West Germany)” (ARL, 1989, p. 6). The findings from this report suggested that “from 1973–87, publishers’ profits increased between 40% and 137%” (ibid.). In light of such alarming developments and forecasts, the second report recommended “a set of urgent actions to demonstrate the serious and immediate impact of the serials crisis” and encouraged long-term efforts to be undertaken by ARL and its members (Okerson, 1989, cited in ARL, 1989, p. 8). The list of immediate actions included, inter alia, distributing both associated reports as widely as possible, assisting libraries “in making educated decisions regarding selection and deselection of serial titles”, as well as identifying “problem publishers” and coordinating “protest actions by the library community” (ibid.). As one could learn from Tuttle’s newsletter, a special subgroup was later appointed to address these *problem publishers*.⁴² However, as can be taken from later reports on annual subscription prices for academic journals and other periodicals in the US (and elsewhere), the upward trend of prices continued ceaselessly (Albee & Dingley, 2000; Edwards & Shulenburger, 2013).

According to the ARL study, the behaviour of commercial publishers that had by then “assumed a commanding position in the academic serials arena” (ARL, 1989, p. 7) was first on the list of predominant causes that had contributed to the serials crisis. While comparative studies indicated considerably lower prices for similar journals published by not-for-profit societies, the annual rates of price increases for commercial publishers exceeded well beyond estimated costs. These were

40 See <http://webdoc.sub.gwdg.de/edoc/aw/nspi/> [last checked on 31/05/2022]. Some comments on ensuing discussions on this newsletter are also available in Guédon, 2001.

41 See <http://webdoc.sub.gwdg.de/edoc/aw/nspi/1989/PRIC1.HTML> [last checked on 31/05/2022].

42 See <http://webdoc.sub.gwdg.de/edoc/aw/nspi/1989/PRIC1.HTML> [last checked on 31/05/2022].

said to be only partially attributable to the initiation of new journals in response to increased levels of research and specialisation. Most importantly, “perceived market opportunities” seemed to play a major role: as the study authors noted, “publishers count on scholars and researchers demanding that libraries maintain subscriptions to prestigious journals regardless of price” (ibid.).

What was deemed most problematic about such an uncomfortable situation, at least from the libraries’ perspective, was that even the largest libraries could “no longer afford to maintain comprehensive research collections” (ARL, 1989, p. 5). Furthermore, spending ever larger portions of purchasing budgets to acquire costly STM journals “led to a serious degradation in libraries’ ability to maintain their collections in the humanities and social sciences”, while also limiting their ability to purchase books and other materials (ibid.). For these reasons, some authors argued that the wave of cancellations induced by “the serials crisis” subsequently amounted to “a book crisis” (Nentwich, 2001) or “the monograph crisis”, predominantly hitting scholars in the humanities research fields (Suber, 2012; Adema, 2014; see also Fuchs & Sandoval, 2013; Salo, 2020).

As Jean-Claude Guédon (2001) described in detail by taking the example of the Canadian National Site Licensing Project (CNSLP), academic libraries in various countries attempted to strengthen their bargaining power in the next stage of the serial pricing crisis. In his own words: “taken by surprise by this unexpected onslaught on their traditional positions and roles, librarians bent, groaned and finally managed to regroup. The result has been the formation of consortia” (Guédon, 2001, p. 42). And while “consortia have gradually learned how to fight better” and pressure their vendors, the effectiveness of such an approach appeared dubious, leading to “complex and somewhat contradictory results” (ibid.). In this light, Guédon was particularly sceptical about negotiating with major publishers like Elsevier. For example, he argued that even if consortial agreements could result in significant savings, these would be “hard to repeat: once a deal has been struck with a publisher, it will be difficult not to renew it, thus reducing the possibility to negotiate a second time from a position of relative strength” (Guédon, 2001, p. 43). What is more, for the next round of negotiations, libraries’ counterparts were expected to prepare well themselves – because “publishers can certainly draw the necessary conclusions from this unexpectedly difficult skirmish, and they too know how to regroup” (ibid., p. 44).

The response from the publishers didn’t take long. Seemingly in line with Guédon’s worries, Elsevier was “showing the way again” by putting forward what has later become known as the “Big Deal” (ibid.). According to John J. Regazzi, former Chief Executive Officer at Elsevier, the Big Deal was first introduced in 1996 by the publishing house Academic Press and shortly thereafter by Elsevier as a reaction to the “serials crisis prompted by the cycle of rising prices” (Regazzi, 2015, p. 167). As Regazzi recalls, “the cycle of subscription price increases followed by journal cancellations followed by more price increases could not continue indefinitely” (ibid.). Therefore, after learning about plans at the Higher Education Funding Council for England (HEFCE) to make changes in library budgets, two senior executives at Academic Press developed a new multi-year approach for licensing journal subscription bundles (ibid.).

This novel model promised advantages for both sides: guaranteed revenues and streamlined

administration for publishers, and bulk access to a large number of journals along with a relief to some budgetary pressures for single libraries and library consortia (Regazzi, 2015). Yet, such deals also had drawbacks. Once negotiated, Regazzi (2015, p. 168) notes, “the consortia were locked into subscriptions to journals for the term of the agreement”. Moreover, such lump deals that frequently gave access to a complete journal portfolio of a publisher – whether desired or not – also severely impinged on collection development and acquisition policies at academic libraries and curtailed their autonomy to make strategic decisions (Guédon, 2001; Regazzi, 2015). I will discuss the implications and pitfalls of this bundling practice of “Big Deals” in more detail in Chapter 10.

Moreover, by bundling both print and electronic formats, “libraries became licensers instead of owners of the material” (Regazzi, 2015, p. 168; see also Edlin & Rubinfeld, 2004). That is, instead of possessing a physical copy of a journal issue (almost) *ad infinitum* and offering it to their patrons on their own terms, libraries were increasingly paying for a temporary (and strictly delimited) online access to digital versions thereof. This raised a number of novel questions. For instance, how to ensure the long-term preservation of electronic journals if a commercial publisher were to go bankrupt? How could a library continue accessing previously licensed materials, if it decided to terminate the subscription? As Regazzi (*ibid.*) summarises, publishing companies “responded to this market demand” by offering another product – charging reduced rates for accessing “legacy materials” or downloading them exclusively at the libraries.

Yet there was another important development taking place at around the same time as the increasing commercialisation, commodification, and digitalisation of scholarly publishing (Guédon, 2001; Nentwich, 2001; Fyfe et al., 2017; European Commission, 2019). By proposing the Science Citation Index (SCI) in the early 1960s, Eugene Garfield introduced a bibliometric index for tracing and quantifying citations in scientific journals (Guédon, 2001; Wouters, 2017; Aksnes et al., 2019). In light of a growing number of journals, publishers, and publications in the academic publishing landscape, it was initially supposed to help with identifying the most important or “core” journals in the field (*ibid.*). As such, its purpose was to assist researchers with retrieving relevant articles as well as to help librarians when deciding upon which periodicals to subscribe to. As explained by Guédon (2001, pp. 20–21), “Garfield’s basic intentions were essentially bibliographic”. However, after the citation-based “journal impact factor” (JIF) began to be reported for the titles included in SCI, a method for ranking these journals – and subsequently their authors – was effectively created (*ibid.*). In this way, “SCI was ready to drift into a whole new business area, that of career management tool” (*ibid.*, p. 21).⁴³

This parallel evolution is notable for several reasons. On the one hand, selling Big Deals to libraries incentivised the use of journals included in these bundles, which, in turn, would drive up their

43 According to Paul Wouters, professor of scientometrics and former director of the CWTS, Garfield has grown uncomfortable himself with the misuse of citation-based metrics and particularly the JIF as performance indicators to evaluate funding programmes, research groups, individuals, and nations (Wouters, 2017). See also Garfield’s own comments in “The Agony and the Ecstasy – The History and Meaning of the Journal Impact Factor” (Garfield, 2005).

download and citation rates (Guédon, 2001). In this way, skilful publishers like Elsevier have contributed “to creating a scholarly landscape that is distorted compared to the normalized scholarly landscape of the ‘core journals’” – one of the “more subtle and indirect consequences to the ‘Big Deal’ tactic” (ibid., p. 45). Because with growing visibility a particular journal was likely to attract more readers and authors, the quality of future submissions as well as its corresponding JIF would begin to go up (ibid.). The results of this seemingly innocuous situation, in fact, might be quite startling:

“In effect, a kind of quality pump has been successfully primed and it begins to propel the journal up the pecking order ladder among the core journals. In all probability, the same tactic can also help a new journal reach core level and thus graduate to the charmed circle of the SCI list” (Guédon, 2001, p. 46).

While not a detrimental outcome per se, a publisher promoting such an inflationary spiral was seen as capable of gradually outcompeting other publishers. Therefore, on the other hand, Guédon (2001, p. 47) further cautioned against the intensifying dominance of a few large publishers where the “oligopoly presently controlling the core journals could easily turn into a very strong monopoly”. Indeed, a landmark study by Vincent Larivière, Stefanie Haustein, and Philippe Mongeon (2015) addressed precisely this question and examined the extent to which the scientific publishing industry has been consolidated over the last few decades. Based on an analysis of 45 million documents indexed in the Web of Science database over the period of 1973–2013, they found that the major publishing companies “Reed-Elsevier, Wiley-Blackwell, Springer, and Taylor & Francis increased their share of the published output, especially since the advent of the digital era (mid-1990s)” (Larivière et al., 2015, p. 1). Whereas by the mid-1990s “commercial publishers accounted for 40% of the journal output, while scientific/professional societies accounted for 25% and university presses and educational publishers for 16%” (Tenopir & King, 1997, cited in Larivière et al., 2015, p. 1), the level of concentration in the hands of only the five most prolific publishers would reach as high as 70% in the social sciences disciplines in 2013 (Larivière et al., 2015.).

Quite remarkably, the period starting in the late 1990s was also characterised by the migration of journals from small to big publishing houses (ibid). As *Figure 2* illustrates, the change of ownership took place both in natural and medical sciences as well as social sciences and humanities.

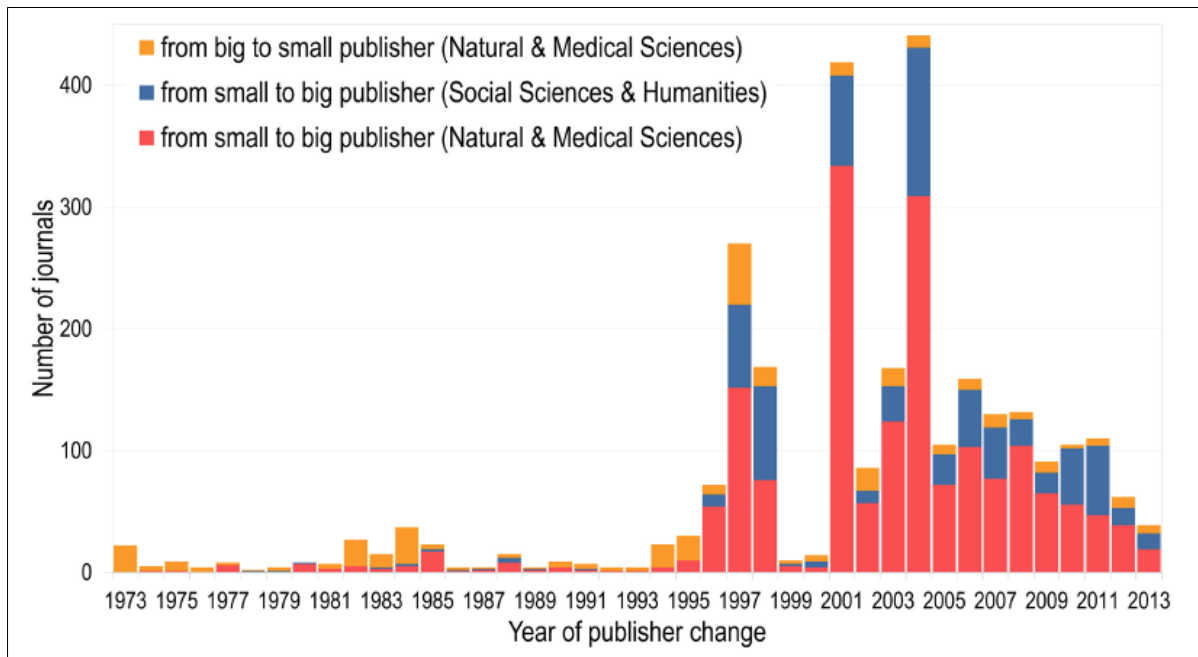


Figure 2: Number of journals changing between small and big publishers per year of change (Larivière et al., 2015, p. 5).

As Larivière and colleagues (2015) explain, the first large wave of journal acquisitions occurred in 1997–1998, when Taylor & Francis acquired several journals and Reed Elsevier acquired a few small publishers. This was followed by peaks in 2001 and 2004, when Reed Elsevier continued a series of acquisitions and Kluwer Academic Publishers was acquired by Springer (*ibid.*). Another big publishing company, Wiley-Blackwell, contributed to this trend by acquiring 39 journals on average per year during the 2001–2004 period (*ibid.*). It is important to note, however, that research disciplines with strong scientific societies such as the American Chemical Society (ACS) in chemistry or the American Physical Society (APS) in physics appeared to be less affected by the growing influence of multinational publishing giants (*ibid.*). At the same time, arts and humanities remained relatively independent, with most publications “still largely dispersed amongst many smaller publishers”, while the top five commercial publishers only accounted for 10% and 20% of publications in these fields in 2013, respectively (Larivière et al., 2015, p. 7). On balance, as the authors (*ibid.*, p. 11) note, while some observers expected the transition to electronic publishing to become a potential solution to the serials’ crisis, the scientific journal publishing market was now increasingly facing “oligopolistic conditions”.

Finally, the formation of the new field of bibliometrics and scientometrics and the keen interest of major publishers and research funders in applying quantitative indicators to scholarly publications (Guédon, 2001; Larivière et al., 2015; Wouters, 2017; European Commission, 2019) is closely connected with another key phenomenon. As Fyfe and colleagues (2017, p. 2) remark, along with the expansion, internationalisation, and professionalisation of academia, published works have grown in importance “as career-defining tokens of prestige for academics”. Since the 1980s, policy-makers have started to incentivise productivity in science and to demand greater accountability

from academic staff (Van Dalen & Henkens, 2012; Fyfe et al., 2017). As a result, “an explicit and formal reward system” was established, “in which individual and measurable performance is rewarded” (Van Dalen & Henkens, 2012, p. 1282).

One of the consequences thereof has been the perceived (and institutionally enacted) publication pressure and the emergence of a “publish or perish” culture, where only researchers with extensive publication lists could hope to have a respectable academic career (ibid.).⁴⁴ Importantly, the JIF has come to play a central role by providing “the metric tool needed to structure a competitive market among journals”, where “a journal without a JIF increasingly faced difficulties in establishing its very legitimacy” (European Commission, 2019, p. 15). Along with the adoption of editorial peer review procedures, “a way to identify publications that counted in this prestige economy” was put in place (Fyfe et al., 2017, p. 3). In other words, “research evaluation increasingly relied on *where* research results were published”, with journal titles becoming “a short-hand for research quality” – itself strongly associated with the notion of “excellence” and subsequently feeding into university rankings and fuelling their spread in institution-level assessment and management decisions (European Commission, 2019, p. 15, emphasis added; see also Sørensen & Traweek, 2022).

In summary, there are several reasons for why touching upon major developments in the centuries-old history of academic publishing is important for situating my own research on Open Access and the negotiations between VSNU and Elsevier analysed in this thesis. Admittedly, it would be possible to examine the shifts in academic publishing and evaluation practices over the last few decades as yet another reflection of the broader societal processes of quantification and the rise of “audit society” (Power, 1999), “audit cultures” (Strathern, 2000), “academic capitalism” (Slaughter & Rhoades, 2004), or “evaluation society” (Dahler-Larsen, 2012). However, while such analytical directions would arguably fit well with the notion of *infrastructural inversion* (Bowker, 1994; Star & Bowker, 2006), in the following I will concentrate on some immediately pertinent observations.

First, these few broad strokes of Open Access *pre-history* show that scholarly communication and academic publishing have witnessed a highly dynamic evolutionary trajectory with multiple social, cultural, economic, and technical transformations. As Fyfe et al. (2017, p. 3) note:

“Scholarly communication today is shaped at least as much by the interests of both publishers and academics, as by technological capacity. Examining the history of those interests shows the evolution of practices that can seem to be written in stone, and offers the hope of change for the better”.

In this regard, especially the decades after the Second World War were decisive as “a key period of transition for learned society publishers: this was when they shifted from *circulating* research to

44 Meanwhile, some authors speak of adapting this adage to a “publish *and* perish” situation where “you can publish your results and still perish in present culture due to publication pressure and emotional exhaustion” (Tijdink, 2016, p. 8). Others also refer to an “impact or perish” rationale with regard to the importance ascribed to the JIF (Biagioli & Lippman, 2020).

selling it, and from decades of publication deficits to a new world of breaking even” (Fyfe, 2021, p. 2, emphasis in original). The next step after becoming self-sustaining has been for many learned journals and their publishers to start making profits from publishing research results (ibid.; Fyfe et al., 2017). As Fyfe and other scholars have shown by scrutinising the emblematic history of *Philosophical Transactions* (Fyfe et al., 2017; see also Guédon, 2001; Csiszar, 2018), the relationship between the business of academic publishing and the role of publishing in academic careers have become intertwined and the nature of this relationship has changed over time. Once commercial publishing companies entered the stage and advanced to the position of dominant actors therein, “scientific research became something to be commodified and sold to libraries, rather than circulated as part of a scholarly mission” in a relatively short period of time (Fyfe, 2021, p. 2).

Moreover, by taking possession of “prestigious journals”, either by acquiring ownership rights from smaller publishers or by launching and raising the status of their own new titles (Guédon, 2001; Larivière et al., 2015), a few big commercial publishers have become a vital element of the current academic publishing landscape and successfully “learned how to make themselves apparently indispensable to the academic prestige economy” (Fyfe et al., 2017, p. 17). Although quality assurance processes such as peer review were in the hands of disciplinary research communities as well as learned societies and university presses historically, the co-optation of these mechanisms by profit-oriented publishers since the 1960s “means that they are now sold as a key value-added service to the academic community” (Fyfe et al., 2017, p. 3). In this way, “control of the measures of academic prestige ... has been silently transferred from communities of academic scholars to publishing organisations” (ibid., p. 13), which can be compared with a dangerous outsourcing of internal decision-making processes to a handful of commercial research publishing and analytics companies (Guédon, 2001; see also De Rijcke, 2020).

In the end, in keeping with the re-infrastructuring lens as proposed by Grisot and Vassilakopoulou (2017), such shifts can be explained as “jumps and turns” in the evolution of academic publishing infrastructure, where continuous adjustments take place and can be driven by different logics (Grisot & Vassilakopoulou, 2017, p. 10). As the authors argue, such adjustments “in the life of an infrastructure are never mere technical development”, but are characterised “by political and negotiation processes” (ibid.). Thus, disenchanting such processes and remembering that “it could have been otherwise” (Star, 1988, cited in Timmermans, 2015, p. 1) is fundamental to reassessing long-term development pathways and reimagining alternative future visions. Similarly, Fyfe’s historical analysis helps with correcting the narrative in many contemporary Open Access debates by showing that “a sales-driven, profit-seeking commercial approach is not a natural or essential element of scientific journal publishing” (Fyfe, 2021, p. 24). Understanding the reasons for its emergence during the late twentieth century, hence, shall be an “essential grounding for all those campaigning to transition academic publishing – including learned society publishing – away from the sales-based model *once again*” (ibid., p. 2, emphasis added). In what follows, I will trace the major steps in how the concept and practice of Open Access publishing has developed since its original “birth” declarations at the turn of the millennium and how it morphed from a grassroots movement into a mainstream topic on the science policy-making agenda.

5.2 Defining Open Access and its many (sub-)species

When surveying the vast body of literature on the origins of and motivations for Open Access' birth, one will typically encounter two major threads. On the one hand, as already examined in more detail in the previous chapter, since the second half of the 20th century knowledge and information infrastructures, as well as other areas of human activity, have experienced a profound digital transformation in light of computerisation and, subsequently, the widespread adoption of internet-based technologies and work practices (Star & Ruhleder, 1996; Bowker et al., 2010; Edwards et al., 2013; see also Guédon, 2001; Nentwich, 2001; Hanekop & Wittke, 2013; Dickel & Franzen, 2015; Fyfe et al., 2017; European Commission, 2019; Kiesewetter, 2020). The development of electronic publishing opened up new perspectives on and opportunities for how to better disseminate traditional scholarly literature via other more interactive formats (Harnad, 1992; Bailey, 1994; Schauder, 1994; Kling & McKim, 1999; Crawford, 2002). On the other hand, as I have shown with regard to discussions on the "serials crisis", academic libraries and research institutions have struggled with spiralling journal subscription prices, a situation that has grown more acute since commercial publishers became increasingly involved in the business of scholarly publishing and have pursued ambitious expansion strategies (Guédon, 2001; Fyfe et al., 2017).

At the confluence of both developments, academics in various fields had already started to instantiate freely available online journals in the late 1980s and early 1990s (Adema, 2014; Moore, 2019b). Roughly at the same time, a number of online archives or "e-print servers" for early sharing of research works among disciplinary communities were launched, such as, most notably, arXiv.org⁴⁵ in physics (founded by Paul Ginsparg in 1991; see Ginsparg, 1997) and PubMed Central⁴⁶ in biomedical and life sciences in 2000 (Guédon, 2001; Nentwich, 2001; Willinsky, 2006; Suber, 2012; Adema, 2014; UNESCO, 2015). The idea of publicly archiving pre-refereed versions of scholarly articles or "preprints" in addition to conventional publication in subscription journals was most fervently advocated by cognitive scientist Stevan Harnad, particularly since his intentionally provocative "subversive proposal" (Okerson & O'Donnell, 1995; Nentwich, 2001; Jacobs, 2006; Adema, 2014). In his original posting to a discussion list on electronic journals in June 1994, Harnad argued for breaking "the Faustian bargain" that scholarly authors have entered into with "paper publishers" which allowed "a price-tag to be erected as a barrier between their work and its (tiny) intended readership" (Okerson & O'Donnell, 1995, see I. OVERTURE). If all scholars would share their preprints via FTP (File Transfer Protocol) archives, the World-Wide Web or by other future means, he argued, "the long-heralded transition" from paper-based to electronic publications and their universal availability would immediately materialise (ibid.).

Yet despite a lively and much-noticed discussion that ensued over Harnad's proposal, and which is extensively documented by Okerson and O'Donnell (1995), the point of culmination that drew together various projects and initiatives was the BOAI declaration in early 2002 (BOAI, 2002, 2012). As explained on the occasion of its 10th anniversary in 2012: "It didn't invent the idea of OA [Open

45 See <https://arxiv.org/about> [last checked on 05/06/2022].

46 See <https://www.ncbi.nlm.nih.gov/pmc/about/intro/> [last checked on 05/06/2022].

Access]. ... But the BOAI was the first initiative to use the term ‘open access’ for this purpose, the first to articulate a public definition, the first to propose complementary strategies for realizing OA, the first to generalize the call for OA to all disciplines and countries, and the first to be accompanied by significant funding” (BOAI, 2012, n.p.). Convened in Budapest in late 2001, the BOAI was born out of a small meeting of 16 representatives from various universities, publishers, international organisations, and foundations, including some prominent Open Access figures named in this sub-chapter (BOAI, 2002; Guédon, 2004; see also chapter 1. *Introduction*).

As one can read in its opening paragraph, the BOAI declaration conveyed the sense of a historical moment:

“An old tradition and a new technology have converged to make possible an unprecedented public good. The old tradition is the willingness of scientists and scholars to publish the fruits of their research in scholarly journals without payment, for the sake of inquiry and knowledge. The new technology is the internet. The public good they make possible is the world-wide electronic distribution of the peer-reviewed journal literature and completely free and unrestricted access to it by all scientists, scholars, teachers, students, and other curious minds” (BOAI, 2002, n.p.).

By “open access” to scholarly journal literature, as the authors of this declaration explained, they meant “its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself” (ibid.). In this regard, the only acceptable constraint and the role for copyright, then, was “to give authors control over the integrity of their work and the right to be properly acknowledged and cited” (ibid.). It bears mentioning that the BOAI didn’t give preference nor preclude any particular business or operational model. Instead, it listed a number of possible funding sources for this purpose, “including the foundations and governments that fund research, the universities and laboratories that employ researchers, endowments set up by discipline or institution, friends of the cause of open access, profits from the sale of add-ons to the basic texts, funds freed up by the demise or cancellation of journals charging traditional subscription or access fees, or even contributions from the researchers themselves” (BOAI, 2002, n.p.). What is more, the meeting participants encouraged further experimentation with possible implementation models and highlighted the importance of adaptation to local circumstances. As noted in BOAI’s original wording: “There is no need to favor one of these solutions over the others for all disciplines or nations, and no need to stop looking for other, creative alternatives” (ibid.).

Although there have been more than 100 other declarations⁴⁷ in support of Open Access so far, two further public statements are commonly referred to and, together with BOAI, are sometimes called “the BBB definition” of Open Access (Suber, 2012, p. 7). These are the Bethesda Statement on Open

47 See http://oad.simmons.edu/oadwiki/Declarations_in_support_of_OA [last checked on 05/06/2022].

Access Publishing⁴⁸ that was released in June 2003, and the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities⁴⁹ that resulted from a meeting organised by the Max Planck Society in October 2003. While both statements largely resembled the reasoning provided by and the goals set in the BOAI, they added some additional accents. For instance, the main purpose of the Bethesda statement was said “to stimulate discussion within the biomedical research community on how to proceed, as rapidly as possible, to the widely held goal of providing open access to the primary scientific literature”.⁵⁰ Whereas the Berlin declaration widened the scope beyond “the peer-reviewed journal literature” (BOAI, 2002) to include other contributions to scientific knowledge and cultural heritage such as “original scientific research results, raw data and metadata, source materials, digital representations of pictorial and graphical materials and scholarly multimedia material”.⁵¹ Furthermore, it added that an Open Access contribution must be accompanied by “a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship”, and that “a complete version of the work and all supplemental materials” must be deposited in electronic format in at least one online repository (ibid.). While the number of Open Access repositories⁵² has grown over the years, Creative Commons (CC) licenses have become a de facto standard for these purposes.⁵³

In view of these events, John Willinsky (2006, p. 1; emphasis in original) argued that “the year 2003 signaled a breakthrough in scholarly publishing for what might be loosely termed the *open access movement*”. Yet the primary reason for his enthusiasm was not to be found in the Open Access declarations named above, but in the launch of the new journal “PLoS Biology” (ibid.). What set it apart from other new journals, in his view, was its aim to compete “for top biology papers with *Nature*, *Science* and *Cell*” (Nature, 2003, cited in Willinsky, ibid.; emphasis in original). Preceding this event was an open letter by three renowned scientists who later together co-founded the Public Library of Science (PLOS) with PLoS Biology as its first scientific journal.⁵⁴ In this letter, they called for “the establishment of an online public library that would provide the full contents of the published record of research and scholarly discourse in medicine and the life sciences in a freely

48 See archived version that is available at <https://perma.cc/2GKV-BMV3> [last checked on 05/06/2022].

49 See <https://openaccess.mpg.de/Berlin-Declaration> [last checked on 05/06/2022].

50 See footnote 48 above.

51 See footnote 49 above.

52 See, for instance, Registry of Open Access Repositories (ROAR): <http://roar.eprints.org/view/year/> [last checked on 05/06/2022].

53 Whereas strictly speaking, only liberal licenses such as CC BY and CC BY-SA satisfy all conditions for open licensing as listed above. See <https://creativecommons.org/about/cclicenses/> as well as remarks on the Open Definition at <https://opendefinition.org/od/2.1/en/> [last checked on 05/06/2022].

54 See <https://plos.org/about/> as well as a short essay by Cameron Neylon, former Advocacy Director at PLOS, at <https://patternsofcommoning.org/open-access-pioneer-the-public-library-of-science/> [last checked on 05/06/2022]. The abbreviation “PLoS” was later changed to “PLOS”.

accessible, fully searchable, interlinked form”.⁵⁵ For this purpose, they asked publishers of scientific journals to grant free distribution rights for all research reports to be publicly archived in PubMed Central or similar repositories within six months of their initial publication (*ibid.*). What is more, the authors of the letter pledged to “publish in, edit or review for, and personally subscribe to only those scholarly and scientific journals that have agreed” to do so by September 2001 (*ibid.*).

However, although this letter – some call it rather a “petition” or a “boycott” (Brower, 2001; Harnad, 2006) – was signed by more than 34,000 scientists from 180 countries⁵⁶, the publishers did not comply with the request. Instead of supporting PubMed Central as initially sought, the group changed its tactics and concluded that it needed to start its own journals: “rather than waiting for the publishers to get on board, PLOS has decided to take matters into their own hands” (Brower, 2001, p. 972). In the inaugural issue of PLoS Biology in October 2003, the founders explained “why PLoS became a publisher” and how they intended “to pay the bill” for Open Access (Brown et al., 2003). Instead of adopting a traditional subscription model, their plan was to ask “research sponsors to pay for publication of the research they support” (*ibid.*, p. 002). Because, according to “most estimates”, costs of publishing would amount “to less than 1% of the total spent on sponsored research”, the authors argued, in this way it would be possible to “retain a robust and competitive publishing industry and gain the benefit of universal open access” (*ibid.*). And while the publishing fee was previously set at a “\$1,500 payment by the authors of each article published” (Willinsky, 2006, p. 1), more recently the amount has ballooned to as much as \$5,300.⁵⁷

The case of PLoS Biology serves as a formidable example of what Khoo (2019) has called an “article processing charge hyperinflation”. Pioneered by the BioMed Central (BMC, now part of Springer Nature) since its establishment in 1999, the article processing charges (APCs) were “levied on authors (or their proxies) instead of readers (or their proxies)” (European Commission, 2019, p. 17; see also Björk, 2012). This interpretation of the “Gold” Open Access model, according to some of its advocates, “was perceived as bringing several advantages: not only did it broaden access, but, in passing the costs of dissemination directly to researchers (or their proxies), it also offered the promise of greater transparency to the commercial transaction” (*ibid.*).⁵⁸ Furthermore, as argued by Pinfield (2013, p. 86), it had “the potential to reintroduce genuine competition into the journal market with authors sensitive to price making choices about where they place their articles. If journals put APCs up, authors can go elsewhere and the adjustments can happen quickly”.

However, while this scenario initially seemed plausible and raised hopes for “a better-functioning market, with lower prices for all”, what it missed was “that APC-financed open access journals did not compete differently from subscription-based journals” (European Commission, 2019, pp. 17–18). That is, their major, if not primary function remained that of “kingmakers” (Regazzi, 2015,

55 The letter is available online at: <https://plos.org/open-letter/> [last checked on 05/06/2022].

56 See footnote 55 above.

57 See <https://plos.org/publish/fees/> [last checked on 05/06/2022].

58 See also <https://www.biomedcentral.com/about/open-access> (last checked on 06/06/2022).

cited in European Commission, 2019, p. 18), with the symbolic capital and value ascribed to a publication in a given journal being heavily used for academic career progression (Fyfe et al., 2017, cited European Commission, 2019, p. 18). Hence, as Pinfield (2013, p. 85) asked himself: “In an open access world, will journal subscription inflation simply be replaced by APC inflation?” Or, in other words, “What is to stop a *new* serials crisis from developing?” (ibid., p. 86; emphasis in original).

According to Khoo (2019), such concerns apparently have come to pass. Based on an analysis of more than 300 APC-based journals published by the four largest commercial Open Access publishers (BMC, Frontiers, MDPI, and Hindawi) in the period from 2012 to 2018, it was shown that “higher APCs were actually associated with increased article volumes” (Khoo, 2019, p. 1). This finding seemed to hold both when a journal would introduce APCs after an initial free period and when it raised the fees later in its development, such as upon being assigned a JIF – a regular practice among many publishers (Khoo, 2019).⁵⁹ As Khoo (ibid., p. 10) notes: “if authors weigh journal price heavily in their journal selection strategies, then it might be expected that APC-funded journals would struggle to become established and lower-APC journals would be favoured”. Yet his findings suggest that “if anything, authors appear to favour more expensive journals” (ibid.). Interestingly, setting too low an APC, in turn, might be even potentially associated with so-called “predatory journals” and might deter authors from submitting their work to such journals (ibid.). I will return to this issue in the empirical case study of the thesis (see 9.3.2 *Advancement of individual careers: Stuck in the “evaluation gap”*).

Therefore, as Khoo (2019) observes, in the APC-based Open Access publishing model that is currently being practised (and promoted) by many commercial publishers, authors are essentially insensitive to price increases. What is more, “if they are able to, [they] will likely choose to publish in an outlet that is commonly perceived as more prestigious, even if that means paying an APC or a higher APC” (ibid., p. 11). Such a situation further suggests that academic publishing follows the principles of “prestige pricing” (Kumcu & McClure, 2003) or “status consumption” (Goldsmith et al., 2010, both cited in Khoo, 2019, p. 11), terms from marketing research, where increasing prices are associated with increasing demand. Unless the negotiating and policy-setting power of research funders and institutions is leveraged, Khoo (2019, p. 14) concludes, “author price insensitivity will ensure that APC-funded open access will merely be a sequel to the serials crisis” (see also ARL, 1989; Pinfield, 2013; Fyfe et al., 2017). The market logic with self-regulating mechanisms of price and demand cycles, thus, appeared not to hold in the case of APC pricing as first predicted by Pinfield (2013).

A rare opportunity to gain insight into one of the major publisher’s objectives presented itself in connection with a planned stock market launch by Springer Nature in spring 2018. In its prospectus for the initial public offering (IPO) on the Frankfurt Stock Exchange, the company outlined how it planned to capitalise on developments in the academic publishing market and

59 See also the data collected on this topic by Heather Morrison and her research team at the University of Ottawa: <https://sustainingknowledgecommons.org/category/oa-apcs/> as well as by the OpenAPC initiative at <https://treemaps.intact-project.org/apcdata/openapc/> [last checked on 06/06/2022].

particularly the APC-based model.⁶⁰ On the one hand, Springer Nature presented its strengths to potential shareholders. While on the other hand, as required by stock exchange regulations, it also listed possible risks and threats. On its own admission, Springer Nature owned a number of journals that were regarded as “must-have” content by university libraries and, thus, made the libraries dependent on subscribing to these titles. Moreover, as many of them were assigned a high JIF, this enabled the company to charge more expensive APCs for publishing in Open Access in these journals – a feature that Springer Nature planned to actively exploit in the future. As captured by Bianca Kramer and Jeroen Bosman (2018), one statement of the prospectus read as follows: “We also aim at increasing APCs by increasing the value we offer to authors through improving the impact factor and reputation of our existing journals”.

What is problematic about such a stance, according to Kramer and Bosman (*ibid.*), among other things, was that the publisher showed its blunt view of “impact factors and journal brands as what makes a journal valuable to authors and justifies high APCs – and not aspects such as quality and speed of peer review, manuscript formatting, or functionality and performance of the publishing platform”. What is more, a deliberate strategy to exploit the “impact factor thinking among researchers” and to raise APCs in tandem with JIFs was said to stand in sharp contrast with the publisher’s commitment to “greatly reduce emphasis on the journal impact factor as a promotional tool” as a signatory of the San Francisco Declaration on Research Assessment (*ibid.*).⁶¹ In effect, Kramer and Bosman (2018, n.p.) wondered whether Springer Nature was showing its true colours through the information revealed in the prospectus, whereas other public statements consisted of “merely paying lip service to appease those worried by toxic effects of impact factor thinking”.

A look at the list of declared threats to Springer Nature’s business and pricing models is equally intriguing. For instance, one could find possible changes to legislation that could undermine the common practice of claiming exclusive ownership rights to journal titles (instead of granting them to journals’ editorial boards). Then, the price setting strategy as well as the still-upheld ideal of the peer review system and its integrity was perceived as coming under pressure with more scrutiny from public discussions and shifts in public opinion. Calls for more transparency of incurred costs

60 Since the original prospectus is no longer available, I will refer to its content as reproduced in various financial news portals and specialised blogs. See, for instance, the initial announcement with a planned price range per share on 25 April 2018 at <https://www.dgap.de/dgap/News/corporate/springer-nature-sets-ipo-price-range-eur-eur-per-share/?newsID=1068409>, a commentary on the prospectus and other sources on Dutch blog ScienceGuide by Frans van Heest on 2 May 2018 at <https://www.scienceguide.nl/2018/05/springer-nature-beursgang/>, the decision to postpone the IPO as announced on 8 May 2018 at <https://www.dgap.de/dgap/News/adhoc/springer-nature-postpones-planned-initial-public-offering/?newsID=1071459>, a related blogpost by Roger C. Schonfeld on the blog of the Society for Scholarly Publishing (SSP) on 15 May 2018 at <https://scholarlykitchen.sspnet.org/2018/05/15/springer-nature-ipo-withdrawn/>, and another blogpost by Bianca Kramer and Jeroen Bosman, librarians at Utrecht University in the Netherlands, on Times Higher Education’s blog on 16 May 2018 at <https://academic.cms.prd.the-internal.com/blog/linking-impact-factor-open-access-charges-creates-more-inequality-academic-publishing> [last checked on 06/06/2022].

61 The San Francisco Declaration on Research Assessment (DORA) is available online at <https://sfdora.org/read/> [last checked on 06/06/2022].

and growing demands to disclose contracts were also listed in the prospectus. Last, the publisher did not preclude the risk that the JIF might be challenged and lose its predominant role as a benchmark in research assessment, in favour of social media indicators or other criteria (Kramer & Bosman, 2018; Van Heest, 2018).

Eventually, the planned stock market launch of Springer Nature was withdrawn “due to market conditions” on 8 May 2018, one day before trading on the Frankfurt Stock Exchange was expected to start (Schonfeld, 2018). Some commentators subsequently speculated why – or whether – this IPO was “botched” as well as whether investors backed out because of what they perceived as a lack of growth opportunities in a publishing market that might have reached saturation, either with “peak subscription” or “peak APC” (ibid., n.p.). At the same time, some recognised that the hitherto undisputed position of major publishers might face “a fundamental disruption to their role”, while users could get the journal content for “free in Kazakhstan” (ibid.). The latter comment was presumably made as a reference to a popular if disputed resource called Sci-Hub, which is described in its Wikipedia entry in the following way:

“Sci-Hub is a shadow library website that provides free access to millions of research papers and books, without regard to copyright, by bypassing publishers’ paywalls in various ways. Sci-Hub was founded in Kazakhstan by Alexandra Elbakyan in 2011, in response to the high cost of research papers behind paywalls ... The site is extensively used worldwide.”⁶²

As one can read on the statistics provided on its own homepage, the number of research documents that were collected in Sci-Hub’s database and made freely available for download has grown from more than 23 million in 2013 to more than 88 million in 2021.⁶³ Around 80% of its content concerns scientific journal articles (mostly in the fields of medicine, chemistry, and biology), published over last four decades between 1980 and 2020, while the coverage for all major scientific publishers is said to reach as high as > 95% (ibid.). Sci-Hub became (even) more widely known after an article in Science magazine prominently revealed that its users come “from all regions of the world” (Bohannon, 2016, p. 509). Succinctly titled “Who’s downloading pirated papers? Everyone”, it built on an analysis of 28 million download requests from Sci-Hub website in the period of six months from September 2015 to March 2016 and showed that most downloads came from Iran, China, India, Russia, the United States, and Brazil (ibid.). Elsevier was named as the publisher with by far the most downloaded publications during the observed period (more than 9 million download requests) (ibid.).

On the grounds of such copyright infringements, in June 2015 Elsevier’s attorneys filed a lawsuit against Elbakyan as the operator of Sci-Hub and related websites (Schiermeier, 2017). The publisher was eventually awarded a compensation of 15 million US dollars by a district court in New York, with Bohannon’s (2016) study being used as additional evidence to take legal action against Sci-Hub’s founder. Somewhat ironically, the geographic location data derived from

62 See <https://en.wikipedia.org/wiki/Sci-Hub> [last checked on 09/06/2022].

63 See <https://sci-hub.se/database> [last checked on 09/06/2022].

internet protocol (IP) addresses revealed that this resource may have become popular among those with no immediate need for it in the first place. More precisely, a quarter of download requests came from the 34 member countries of the Organisation for Economic Co-operation and Development (OECD), or “the wealthiest nations with, supposedly, the best [legal] journal access” in the world (Bohannon, 2016, p. 510).

Indeed, a visual representation of downloads on the map closely resembled a typical academic landscape concentrated on locations of research institutions, with some of the most intense use apparently “happening on the campuses of U.S. and European universities” (ibid.). That is, those using Sci-Hub could have likely accessed the same publications via their libraries by proper means, suggesting that many of its users turned to this website “for convenience rather than necessity” (Bohannon, 2016, p. 510). Moreover, copies of legally published Open Access journal articles, like those freely accessible in various PLOS journals, were made available via Sci-Hub (ibid.). This outcome has even prompted some authors to declare the ultimate failure of the Green and Gold Open Access models after two decades of collective effort and to call for new approaches to scholarly communication and academic publishing (Green, 2017, 2018).

Interestingly, the Sci-Hub project describes itself as “part of the Open Access Movement in science” – wherein it allegedly became “the most radical – and so far the most successful [sic] – take on the open access”.⁶⁴ However, long-time proponents of Open Access appeared to feel rather uncomfortable with considering such rebellious ventures part of the movement. To differentiate Sci-Hub, LibGen (mostly focused on books), and other freely accessible yet illicit online “shadow libraries” (Bodó, 2016, 2018; Karaganis, 2018; Bodó et al., 2020), some authors have proposed to categorise them as a sort of “black open access” (Björk, 2017; Green, 2017). Björk explained his choice of this colour label with the following: “Black as in the classical pirate flag, or in black market!” (2017, p. 173). In contrast to ordinary online repositories which duly observed publishers’ licensing terms, he reasoned, these new channels were “muddling the picture” by offering to illegally upload and to access “research articles without subscriptions, payments, and bureaucracy” (ibid.). It is important to add, however, that merely downloading documents from Sci-Hub is not considered illegal in all jurisdictions.⁶⁵

Along with the supposedly “blatantly illegal” operations at Sci-Hub, Björk (2017, p. 174) further included uploading copies of copyrighted journal articles to so-called academic social networks such as ResearchGate and Academia.edu, as well as asking other academics for help via special hashtags on the social networking site Twitter, in the category of *black* Open Access. As found in a study of 500 randomly chosen English-language scientific journal articles that were made publicly

64 See <https://sci-hub.se/> [last checked on 11/06/2022].

65 For instance, as explained by Daniel Hürlimann, formerly assistant professor of information law at University of St. Gallen and professor at Bern University of Applied Sciences, downloading published works for private use is allowed under Swiss copyright law even against the author’s will or from illegal sources. See commentaries at https://www.open-ius.ch/vorlesungsinhalte/lbwr2_unisg2018/handouts/Handout-LBW_180328.pdf and <https://www.republik.ch/2018/11/14/geld-fuer-nichts> [last checked on 11/06/2022]. Very sadly, Daniel Hürlimann passed away in September 2022.

available in full-text on ResearchGate, sharing more than 50% of subscription-based articles in this sample entailed infringing copyrights held by their publishers (Jamali, 2017). The author thus suggested that this might imply researchers' "lack of understanding of copyright policies and/or complexity and diversity of policies" (ibid., p. 241). ResearchGate in particular was also targeted by a group of major publishing companies in the guise of "the Coalition for Responsible Sharing" (CfRS) that was formed in October 2017 "to address the copyright-infringing practices on ResearchGate's site".⁶⁶ The publishers have accused ResearchGate of illegally making millions of journal articles "openly and publicly accessible worldwide" and forced it to take down some 1.4 million articles (CfRS, 2019). Two CfRS members – the American Chemical Society (ACS) and Elsevier – have further filed a lawsuit against ResearchGate to obtain desistance and compensation for claimed damages (Van Noorden, 2017; Else, 2018d). However, the responsible court has partially rejected their claims.⁶⁷

However, explaining the popularity of ResearchGate as well as other disputed sharing practices merely with the lack of legal awareness among the authors of those works would equally fall short of painting a fuller picture. As Balázs Bodó and colleagues (2020, p. 2) noted, "there seems to be a widely shared (but certainly not universal) consensus in the academic sector about the moral acceptability of such radical open access practices". In many cases, these consist of rather wilful – and therefore conscious – copyright infringement that "is seen as an act of civil disobedience, resisting the business models in academic publishing that have faced substantial criticism in recent years for unsustainable prices and outstanding profit margins" (Bodó et al., 2020, p. 2). One argument in favour of this view, as they continued, is that "shadow libraries are a product of the cooperation between scholars, who contribute texts and other resources (such as donations, volunteer work, etc.)" (ibid.). Cultivating them, thus, can be said to represent "a 'bottom-up', radical approach to open access: a physical approximation of the Platonic ideal of knowledge sharing that would exist if there were no legal, economic, or institutional barriers to the circulation of scholarly knowledge" (ibid.).

Building on a long history of informal text-sharing practices – especially in the post-Soviet states of Central and Eastern Europe – Bodó (2016, p. 3) has elsewhere suggested viewing such partisan endeavours as elements of "a wider Guerilla Open access movement, which uses piracy as a political tool to address to systemic failures of scholarly publishing". The keyword here is derived from the "Guerilla Open Access Manifesto" by Aaron Swartz, a US-American computer prodigy and political activist who was charged with several decades of imprisonment and \$1 million in fines after mass-downloading scholarly journal articles from a paywalled online archive JSTOR via the network of Massachusetts Institute of Technology (MIT) (ibid.; Swartz & Lessig, 2015;

66 See <http://www.responsiblesharing.org/about-us/> and <http://www.responsiblesharing.org/2019-06-13-status-report-on-researchgate-june-2019/> [last checked on 11/06/2022].

67 See the press release by a regional court in Munich, Germany, at <https://www.justiz.bayern.de/gerichte-und-behoerden/landgericht/muenchen-1/presse/2022/5.php> and an accompanying statement by the CfRS at <http://www.responsiblesharing.org/2022-02-02-statement-munich-regional-court-ruling/> [last checked on 11/06/2022].

Bohannon, 2016). Sadly, after being arrested by MIT police and aggressively prosecuted on the grounds of the Computer Fraud and Abuse Act he committed suicide in January 2013.⁶⁸

Written by Swartz at the age of 21, the Guerilla Open Access Manifesto (Swartz, 2008; Swartz & Lessig, 2015) can be read as “a powerful document of global solidarity” (Bodó, 2016, p. 11). In it, after sketching out the problematic state of scholarly publishing, where a wealth of knowledge is increasingly being “locked up by a handful of private corporations” like Reed Elsevier, Swartz (2008) condemned the common practice of signing away the copyrights to publishing companies and called on the academic community to fight back. In Swartz’s (2008, n.p.) own words:

“Those with access to these resources — students, librarians, scientists — you have been given a privilege. You get to feed at this banquet of knowledge while the rest of the world is locked out. But you need not — indeed, morally, you cannot — keep this privilege for yourselves. You have a duty to share it with the world. And you have: trading passwords with colleagues, filling download requests for friends”.

While some activists were liberating scholarly information, although hidden underground, large corporations were allowed to continue “this private theft of public culture” (ibid.). As Swartz (ibid.) complained further, these companies operated under laws passed by “the politicians they have bought off [to] back them”, in the interest of their shareholders and “blinded by greed” (ibid.). In contrast to this ongoing “privatization of knowledge”, sharing it was viewed as “stealing or piracy” (ibid.). With reference to “the grand tradition of civil disobedience”, he thus urged everyone around the world to declare their opposition and to join the fight for making such a situation “a thing of the past” (Swartz, 2008, n.p.).

As observed by Bodó (2016, p. 11), Swartz’s manifesto was first and foremost a “message to the privileged” who were asked “to look beyond their own, rational self-interest, and the borders of western campuses”. It is also interesting to compare the position of and the approaches chosen by Swartz and Elbakyan. While on the surface, as Bodó argues, “these two individuals could not be any more different” – Swartz was a member of the elite US-American universities with a wide circle of global admirers and influential friends, and Elbakyan “a virtually unknown grad student from a remote, post-Soviet republic, at the very edge of the academic, political, institutional and technological periphery” (ibid.). Yet ultimately, their activism embodied resistance of “the two extremes of the structural inequality encoded in the global knowledge economies” (Chon, 2010; Krikorian & Kapczynski, 2010, cited in Bodó, 2016, p. 11) and demonstrated the cooperation that was needed between both roles to address those inequalities from the bottom up (Bodó, 2016). *Insiders* like Swartz with access to resources were “instrumental in smuggling the knowledge out from behind the paywalls” (ibid., p. 11). Without such privileges and the willingness to share them, the other side of the operation simply wouldn’t work (ibid.). *Outsiders* like Elbakyan, in turn, represented “those at the wrong side of the access paywalls”, who had to look for improvised ways in order to overcome such barriers (ibid.). Therefore, according to Bodó (2016, p. 10), their

68 Detailed coverage of these events is available on Wikipedia at https://en.wikipedia.org/wiki/Aaron_Swartz [last checked on 11/06/2022].

fates became “inseparably linked to the Guerilla Open Access phenomenon” in the alliance forged between the centre and the periphery of the global academic landscape.

However, most early advocates of Open Access would likely disagree with considering such underground activities to be on its spectrum in first place. Indeed, the legal dimension was clearly mentioned in both Budapest and Berlin declarations (BOAI, 2002; MPG, 2003). Perhaps in view of different existing interpretations, Suber (2012, p. 20) compiled a list of issues to help “dispel a cloud of objections and misunderstandings” and clarify what Open Access is – and what it is not. There one can read that “OA isn’t an attempt to reform, violate, or abolish copyright”, nor to “require boycotting any kind of literature or publisher” (ibid., pp. 21–24). Moreover, Open Access was also not meant to bring about “universal access” or “access to lay readers”, at least primarily (ibid., pp. 24–27; see also Bodó, 2016, p. 16). I will return to the last two points later in the thesis (see especially chapter 12. *Discussion and conclusions*). Yet in relation to providing free access to scholarly literature by violating copyright agreements with conventional publishers, Suber labelled such sorts of Open Access as “vigilante OA, infringing OA, piratical OA, or OA without consent” (2012, p. 22). While “vigilante publishing, infringing publishing, piratical publishing, or publishing without consent” also happen, he continued, the term Open Access shall be reserved for lawful approaches that carry “the consent of the relevant rightsholder” (ibid.).

In the end, rather than fostering more radical or rebellious ideas and practices, a number of subspecies of Open Access emerged for making scholarly works available online in various *legal* ways. As the Expert Group to the European Commission (2019, p. 18) reminded readers in its report, Open Access is “a direct offshoot of the digital context”, which largely came into being by utilising new possibilities of the internet. And while it was “gradually finding its way out of the print world and its familiar business models”, the shift to electronic publishing also gave rise to another publishing innovation: the so-called “hybrid” Open Access model (ibid.). As Björk (2012) recalls, major scholarly publishers were starting to offer additional options to make individual articles freely available online in otherwise traditional subscription-based journals at least since 2004. Similar to the case with the novel fully Open Access journals like those at PLOS, authors of scholarly articles were offered the chance to liberate their individual contributions through the payment of an Open Access article publishing fee (APC), typically in the range of 3,000 USD (ibid.). In this way, the hybrid model was presented as a compelling proposition that supposedly combined the best parts of both worlds. As frequently argued by major commercial publishers, this approach allowed authors to “continue publishing in well-established traditional subscription journals and benefit from the high-quality peer review services and prestige connected with such journals, while profiting from the increased dissemination due to open accessibility” (Björk, 2012, p. 1497).

As Björk (ibid., pp. 1496–1497) noted further on, offering hybrid Open Access options was carefully marketed by many publishers as an “experiment” and “a possible gradual transition path between subscription and open access”. Although with considerable variations, their uptake among journals of the biggest commercial publishers generally remained very low and initially resulted in less than 2% of published journal articles (ibid.). Not only were the fees introduced by

these publishers seen as remarkably higher than what their authors could afford, but publishers pursuing this model were also accused of “double-dipping” (Björk, 2012; Pinfield et al., 2017). Because while offering *to ransom* individual articles from subscription paywalls, publishers continued selling licenses to access the full content of those journals, including the Open Access articles published therein. In the absence of strong evidence that subscription fees were reduced to compensate for APC payments, as initially pledged by the publishers, many research funders have refused to support the hybrid Open Access route (ibid.).

In light of the limited preliminary success of such hybrid Open Access models, Björk (2012) felt compelled to declare them a failed experiment. However, the experience in the UK provides an interesting counter-example where the APC expenditure in higher education institutions has risen steeply in the post-2012 period (Pinfield et al., 2017). This trend was attributed to strategic changes following the Finch group report (2012), which shifted UK’s Open Access policy to become “Gold-centric” and explicitly encouraged publishing in hybrid journals (ibid.). As Pinfield and colleagues (2017) calculated, the APCs paid for journal articles in hybrid Open Access across 24 institutions and for seven major publishers already averaged 12% of the “total cost of publication” (i.e. subscription costs, APCs in hybrid journals, and administrative costs) by 2014. For research-intensive institutions such as University College London (UCL), this share amounted to as high as 34% or £1,565,022 in 2014 alone (ibid.). Since such expenses were shown to constitute significant extra costs for institutions and were expected to rise further, the authors questioned “whether these additional costs currently faced by institutions might be considered *transitional* or whether they will *remain* in place in the long term” (Pinfield et al., 2017, pp. 2260–2261; emphasis added). In other words, the key issue to be answered by policymakers was “to what extent can and should support for hybrids be sustained?” (ibid., p. 2260).

In hindsight, framing the invention of the hybrid publishing model as a transitional phase towards full Open Access proved to be fallacious (European Commission, 2019). Despite hopes of providing a mid-term solution for budgetary pressures via various offsetting arrangements, “total costs have risen for libraries, their host institutions, and for funders” (European Commission, 2019, p. 18; see also Pinfield et al., 2017). At the same time, it was a risk-free approach for the publishers: while they continued to sell subscriptions, APC payments for the same journals turned into an attractive (and growing) additional income stream (ibid.). Moreover, since subscription-based journals with hybrid Open Access options are typically (and misleadingly) presented as “Gold Open Access” by major publishers, this has arguably contributed to the perception among authors and policy-makers that this model always involves payment of publishing fees in the form of APCs (or BPCs for books, correspondingly).⁶⁹ In this regard, it is important to remember that Gold

69 For instance, Elsevier’s Open Access Author Hub section on “Gold open access” states that “Over 97% of our journals offer the option to publish open access, making your article permanently available and free to read. In the gold open access model, you pay an article publishing charge (APC), making your article immediately, permanently, and freely available for anyone to access, read, and build upon. In many cases, your institution or research funder will pay the APC on your behalf”. However, the number of Gold Open Access journals was said to comprise only some 600 titles. That is, the remaining journals in Elsevier’s portfolio of some 2,700 journal titles are actually regular toll-access subscription-based

Open Access actually implies that *all* of a journal's articles are published in Open Access, irrespective of the underlying business model (BOAI, 2002; Guédon, 2004, 2008; Harnad et al., 2004; Crawford, 2011; Björk, 2012; Suber, 2012; Fuchs & Sandoval, 2013; Pinfield et al., 2017; Piwowar et al., 2018).

Such a frequent conflation of Open Access publishing models and labels has arguably contributed to the need to distinguish non-APC Gold variants. As Christian Fuchs and Marisol Sandoval (2013) have professed, a too broad definition of the term Gold Open Access “does more harm than good” (p. 429), since it “ideologically disguises the differences between for-profit and non-profit models and invites ideological abuse of this category by for-profit publishers” (p. 436). Therefore, the authors suggested a conceptual differentiation of Gold Open Access subcategories by dividing them into “Diamond” and “Corporate” Open Access models (ibid.). Here, Diamond Open Access stands for a model under which “not-for-profit, non-commercial organizations, associations or networks publish material that is made available online in digital format, is free of charge for readers and authors and does not allow commercial and for-profit re-use” (Fuchs & Sandoval, 2013, p. 438). Its Corporate counterpart, in turn, signifies a model where “companies, organizations or networks publish material online in a digital version, do so free of charge for the readers, but derive monetary profits with strategies such as charging authors or selling advertising space” (ibid.). By renaming the for-profit Gold Open Access version as *corporate*, Fuchs and Sandoval (2013) continued, one of the major problems in policy documents and the “most common myth about gold OA” would be addressed – namely, that “that all OA journals charge ‘author fees’ or use an ‘author-pays’ business model” (Suber, 2012, pp. 137–138, cited in Fuchs & Sandoval, 2013, p. 435).

To support their claims that “Diamond Open Access is not just an idea, but rather ... the dominant reality of open access” (Fuchs & Sandoval, 2013, p. 438), the authors drew on an analysis of journals listed in the Directory of Open Access Journals (DOAJ), an index of quality-checked Open Access journals and a common resource for practitioners in this field. According to DOAJ data, some three-quarters of listed journals – and so a typical Open Access journal – did not charge author-side publishing fees (ibid.).⁷⁰ Elsewhere, some researchers have also proposed labelling non-APC Open Access journals as a “platinum” model (Haschak, 2007, cited in Björk, 2017). However, according to other estimates, although the majority of Open Access *journals* operated without APCs, in absolute numbers, the majority of Open Access *articles* were published via APCs (Laakso & Björk, 2012; Crawford, 2022; Pinfield, 2017).

What is more, in order to better reflect the growing complexity of the academic publishing

journals that merely offer *hybrid* Open Access publication as an extra option. This distinction is particularly important with regard to institutional and funders' Open Access policies, which often explicitly exclude financial support for hybrid Open Access models. See <https://www.elsevier.com/authors/open-access> [last checked on 13/06/2022].

70 More recently, 12,372 out of 17,805 listed journals were said to not charge APCs, according to data collected in the DOAJ registry. See <https://doaj.org/> [last checked on 15/06/2022]. For more characteristics of Diamond Open Access journals, see also a large-scale survey by Bosman et al. (2021).

landscape, various authors made an effort to extend the list of Open Access models with additional colours or textures. For instance, Heather Piwowar and colleagues (2018) have put forward a new category they dubbed “bronze” Open Access, where articles are made free-to-read on the publisher’s website, but without an explicit license that regulates their reuse terms. This categorisation goes back to a distinction between *gratis* and *libre* Open Access as proposed by Stevan Harnad (Suber, 2012), that was meant to discriminate between merely granting free reading access to scholarly publications versus removing further barriers to reusing them in other ways, such as posting a copy in an online archive (Piwowar et al., 2018). Interestingly enough, *bronze* Open Access – and not Green or Gold – was found to be responsible for the majority of Open Access articles in Piwowar’s sample (ibid.). At the same time, providing free access without clear licensing terms was criticised as an unsustainable source of Open Access literature since such publications could once again be put behind a paywall at the sole discretion of publishers, with no long-term guarantees (Brock, 2018).

Last, there appeared to be no consensus among Open Access advocates with regard to the two primary implementation routes. As noted by Suber (2012, p. 58): “some friends of OA focus their energy on green OA and some focus on gold OA. Some support both kinds about equally and have merely specialized. But some give one a higher strategic priority than the other”. Given these sometimes controversial debates about the exact meaning of a particular label and whether to treat different Open Access routes as complementary or mutually exclusive (Willinsky, 2003; Guédon, 2004; Suber, 2012; Piwowar et al., 2018), a number of individuals and organisations working in this area have suggested conceptualising Open Access to scholarly publications in terms of a continuum or a spectrum (Chen & Olijhoek, 2016, cited in Piwowar et al., 2018). For this purpose, a special guide was developed to help “move beyond the seemingly simple question, ‘*Is this journal Open Access?*’ and toward a more productive alternative”, or “*How open is it?*” (SPARC & PLOS, 2014, n.p.; emphasis added). In this way, instead of operating with binary *open* vs. *closed* categories, the degree of openness among scholarly journals could be assessed as “more open or less open”, by encompassing “a range of components such as readership, reuse, copyright, posting and machine readability” (ibid.). Bearing this kind of multiplicity of Open Access publishing models and their definitions in mind, along with the inherent particularities and intricacies of each model, I will now turn to a short commentary to wrap up this chapter.

5.3 The Open Access Multiple⁷¹

As Piwowar and others (2018) noted, attempting an authoritative definition of Open Access is a challenging task because of the many subtypes that it entails and the fluidity of the term itself. Based on the vast body of literature on this topic that I have examined, it appears that most actors agree on the generally laudable principle of making scholarly literature more readily available to its potential readers and users, but not on the particular details on how to translate this idea(l) into practice. Moreover, as I have shown in previous sub-chapters, the concept and practice of Open Access publishing builds on a long history of various social, technical, legal, political, financial,

71 This heading is inspired by the title of Annemarie Mol’s book “The Body Multiple” (2003).

and organisational developments in a broader academic publishing landscape. In light of the considerable Open Access varieties and, in some cases, even conflicting initiatives and trajectories, I argue that it is more appropriate to speak of heterogeneous streams or branches rather than of a single or *the* “Open Access movement” (see, e.g., Guédon, 2004; Willinsky, 2006; Suber, 2012; Björk, 2016; Piwowar et al., 2018).

Similarly, Pomerantz and Peek (2016) have stressed that “open” has become an overused term with increasingly ambiguous meanings that range from participatory elements and the transparency of (governmental) institutions to, at times, deliberately misleading labelling or “openwashing”. This has induced the authors to sketch out “fifty shades of open” instead of assuming a universal understanding among proponents of more openness in a broad range of fields such as software and hardware development, political democracy mechanisms, or licensing frameworks (ibid.). A wave of “open” initiatives has been also observed in higher education and research sectors, including “open courseware”, “open notebook science”, and “open peer review” (Corrall & Pinfield, 2014). Yet the multiplicity of such initiatives has prompted questions about their coherence and pointed “to the need for a more coordinated approach to policy development” (ibid., p. 293).

For these reasons, one could (and should) scrutinise implicit and explicit assumptions behind the two positively connoted terms “open” and “access”, especially in combination with each other (Herb, 2010; Pomerantz & Peek, 2016). As commented by Ulrich Herb (2010, n.p.), “the moral vibrancy of open access is overwhelming” at first glance, and “the notion itself seems imbued with charismatic aura”. Hedged by an asserted argumentative universality, Open Access appears to be “a moral necessity that can hardly be questioned or examined” (Haider, 2007, cited in Herb, 2010). This is in line with Nathaniel Tkacz’s (2012) critique of open politics:

“Notions of openness are increasingly visible in a great number of political developments, from activist groups, software projects, political writings and the institutions of government. And yet, there has been very little reflection on what openness means, how it functions, or how seemingly radically different groups can all claim it as their own. Openness, it seems, is beyond disagreement and beyond scrutiny” (Tkacz, 2012, p. 386).

In the case of *opening access* to academic publications, and the rapidly growing policy support for such endeavours over the last decade (see also chapter 1. *Introduction*), the nearly universal appeal of Open Access largely derives from the very broad aims it hopes to achieve. This can be illustrated by a hugely popular graphic (see *Figure 3*) produced by members of the Open Access Australasia (formerly Australian Open Access Support Group, AOASG).⁷²

⁷² Retrieved from: <https://oaaustralasia.org/2021/03/23/benefits-of-open-access/> [last checked on 11/06/2022].



Figure 3: Benefits of Open Access by Kingsley & Brown (2013).

As I have discussed elsewhere in more detail (Šimukovič, 2020b), the image in *Figure 3* can be found on numerous academic libraries' and Open Access support websites. The benefits of Open Access are portrayed here as following (in a clockwise direction):

- More exposure for your work;
- Practitioners can apply your findings;
- Higher citation rates;
- Your research can influence policy;
- The public can access your findings;
- Compliant with grant rules;
- Taxpayers get value for money;
- Researchers in developing countries can see your work.

There are a number of things that immediately catch a critical reader's eye when going through this list. First, as an advocacy resource directed at researchers, it is formulated to convince authors of scholarly publications of the tangible advantages for themselves – e.g., by leading to “more exposure for *your* work” (ibid., emphasis added). While removing access barriers to published

academic literature would undeniably increase the overall size of its potential readership, other purported benefits of Open Access appear more problematic. For instance, as I will argue with empirical examples later on (see sub-chapter 9.2 on *Usefulness vs. uselessness of Open Access*), it is questionable whether free access to articles in international scientific journals is of huge help to practitioners wishing to apply research findings in local contexts. With regard to higher citation rates, several dozen studies have attempted to prove the so-called Open Access “citation advantage”, often with mixed results and, more recently, marked differences between the main Open Access publishing models (Piwowar et al., 2018).

Most strikingly still, the allegedly venerable act of supplying other “researchers in developing countries” (Kingsley & Brown, 2013, as cited above) with academic literature produced by their Western counterparts “hides a glaring ethnocentrism” (Herb, 2010, n.p.). With a reference to the notion of “information poverty” (Haider, 2006; see also sub-chapter 9.5 *Interim discussion: What if, what else, what for?*), Herb (ibid.) notes:

“In these sorts of discussions, developing countries are usually conceptualised as homogenous entities and as objects – not actors – which can partake in the true promise of scientific information created in western Europe and the U.S. free of charge by consuming open access publications”.

That is, from this frequent viewpoint in various Open Access debates, researchers based mostly in the Southern hemisphere are seen as mere *consumers*, but are not taken seriously as *producers* of research publications themselves (Šimukovič, 2019a, 2019b, 2020b). This is reflected in charity-like discourses that focus on providing world-wide and world-class *access to* scholarly publications from comparably rich countries and institutions, but not on ensuring equitable *participation in* producing scientific knowledge (ibid.; Guédon, 2007; Bonaccorso et al., 2014; Czerniewicz & Goodier, 2014; COAR & UNESCO, 2016; Rouhi et al., 2022). Paradoxically, efforts to be part of the conversation that is mostly led by established researchers in rich countries might result in a sort of foreign contribution or reversed development aid flowing from poor scientific “peripheries” to “mainstream” locations and publishing venues (Guédon, 2007; see also Aguado-López & Becerril-García, 2020; Neff, 2020). As I will argue throughout this thesis, such problematic aspects are exacerbated even more with a strong emphasis on APC-based publishing models in many recent policy-driven Open Access initiatives, as in the case of the VSNU negotiations in the Netherlands.

The issues at stake go far beyond available funds or individual preferences when promoting a particular Open Access understanding and accompanying publishing model to be adopted as a standard throughout Europe or even globally. Most worryingly, a shift from a “pay-to-read” to a “pay-to-say” principle (Sabaratnam & Kirby, 2012) might be expected to generate new forms of inequalities (Bonaccorso et al., 2014; Czerniewicz & Goodier, 2014) and to make publishing options subject to available financial resources (Hofmann, 2014). The push to shift from subscriptions to the APC-based Open Access publishing of academic journals (OCW, 2014; Schimmer et al., 2015), considering the already gravely skewed under-representation of researchers’ voices and scientific information from certain regions of the world, could result in aggravating their marginalisation in

scholarly discourses even more (Guédon, 2007; Herb, 2010; Bonaccorso et al., 2014; Alperin, 2015).

Such an outcome can be hardly expected to be in line with the BOAI's (2002) original aims. However, as a widely appealing and broadly defined ideal that has mobilised a huge variety of actors, it has also become heavily imbued with their particular viewpoints and interests. In the end, it is even difficult to delineate more precisely what problem(s) Open Access is supposed to solve. This problem of problem definition was succinctly summarised by market analysts Claudio Aspesi and Helen Luong from Bernstein Research:

“Stepping back to take in the big picture, we would be hard pressed, having spent six years networking extensively in the academic publishing and OA communities, even to articulate what problem is OA trying to accomplish. Ask a librarian, and you will be told that OA is meant to address the serial cost crisis (the rising cost of journal subscriptions and the impact this has on their capacity to fulfil the other missions of academic libraries). Ask a researcher, and you will be told that OA will allow more researchers to read their articles, leading to more citations and – ultimately – to better dissemination of knowledge. Ask an economist, and you will be told that OA will allow small and medium sized companies which do not have access to the latest research to do so, furthering the growth of the economy and job creation. Ask some activists, and you will be told that OA is meant to deflate the margins of capitalist exploitation of public spending. Ask an activist from emerging countries: you will be told that OA is meant to allow researchers and doctors in poor countries to have access to leading research. This lack of clarity on which problem OA is trying to solve, in turn, means that it is difficult to achieve any of these goals” (Aspesi & Luong, 2014, p. 10).

To push the argument further, one could argue that different goals can be pursued by giving preference to one or another variation of Open Access models. For instance, if research administrators or policy-makers would strive for the most cost-efficient option, the Green road to Open Access might be expected as the most likely answer as publication manuscripts can be deposited to (often already existing) institutional or subject repositories at nearly zero extra cost (Harnad, 2015). If, alternatively, one would wish to foster non-commercial academic publishing venues instead, scholar-led Diamond Open Access and other novel Gold Open Access publishing and funding models might help to level the playing field that is presently occupied by a few big publishing corporations (Eve, 2014; Larivière et al., 2015; Fyfe et al., 2017; Adema & Moore, 2018; Asmussen et al., 2021). However, the massive channelling of public money into bulk prepayment agreements for Open Access articles in hybrid subscription journals that were modelled on Big Deals appears to perpetuate the entrenched positions of major commercial publishers and established research institutions alike (Earney, 2017; Pinfield et al., 2017). Moreover, should the “taxpayer argument” for Open Access to make publicly funded research available to the public (Suber, 2012) be taken seriously, would the regular citizens pay as much attention to the title and quantitative indicators of a journal as their fellows scientists? Or perhaps they might rather refer to online encyclopedias such as Wikipedia, or make use of local newspapers and practice-oriented magazines that discuss the relevance of specific results and link to respective repositories from which a full-text copy of an article can be downloaded? (Šimukovič, 2018).

As I have attempted to demonstrate on these pages, Open Access publishing is to be understood not as a clear-cut phenomenon but rather as a chameleonic creature that entails multiple models and variations, with arguments in favour or against each of them. While moving from a grassroots level to a mainstream topic on the science policy agenda, this term has proliferated into a highly complex patchwork of implementation models and their manifestations. By choosing a particular version thereof, different and even conflicting goals and strategies can be pursued. Therefore, loosely referring to an ostensibly coherent Open Access movement when translating this supposedly simple principle into practice has become a matter of a symbolic unity among its practitioners in academic libraries and elsewhere, rather than a precise reflection of the patchwork with diverging streams and aims (see also Šimukovič, 2016, 2018).

Keeping such complexities in mind will be helpful when moving through the Dutch Open Access odyssey to be presented next. To facilitate the reading experience, I will open Chapter 6 with a short preamble and an overall synopsis of the story in the empirical case under study. This will be followed by two further chapters in which I synthesise elements from theoretical approaches and empirical materials. Afterwards, I have dedicated a special chapter to the role of academic libraries and librarians in this story as well as a post-script on some notable events that took place after the empirical case study period. In the final chapter, I will discuss the overall findings and observations from this thesis.

6. Introducing the Dutch Open Access odyssey, or: Overview of key events

The following pages serve as a brief summary of key events in the empirical case under study. The case covers a time frame that spans roughly from late 2013, when Sander Dekker's letter was delivered to Dutch parliament, until early 2016, when the initial VSNU-Elsevier agreement was finalised. The recapitulation compiled here largely builds on public statements and press releases from involved organisations. In this way, it reflects the official version of the Dutch Open Access story – as told by science policy-makers, negotiators, and publishers themselves.

Subsequently, I will offer a different storytelling: one that is guided by conceptual-analytical sensitivities derived from a broad theoretical framework, but also complemented with further insights and individual accounts from the interviews with negotiation team members and researchers in the Netherlands. By putting this brief summary at the beginning of the empirical case study, my aim is to help guide the reading experience and to facilitate the synthesis of empirical materials and analytical insights in the next step. But before proceeding to this core part of the empirical analysis, we will first turn “all eyes on the Dutch” (VSNU, 2016b, p. 15).

6.1 The letter – sending a message to Dutch academia and the world

In the letter on “Open Access to publications” that was formally sent to the chairperson of the second chamber (*Tweede Kamer*, in Dutch) or the House of Representatives of the Dutch Parliament, the state secretary Dekker promised to explain his motivation to take an active role and stir up the customary ways of how research results were being published and disseminated to

their readers. In “the traditional publishing method”, as the letter states, those outside the higher education sector either do not have access to scientific publications provided by university library subscriptions, or have to pay “exorbitant fees” (OCW, 2014, n.p.). At the same time, new technological possibilities mean that “readers no longer need to go to a traditional library” to borrow a physical copy, since journal articles can be made available online “at the point of use” (ibid.). Therefore, Sander Dekker announced: “because such research is paid for from the public purse and technical impediments are essentially non-existent, I believe open access should be rolled out in the near future” (ibid.).

More precisely, after sketching out “the current system of publication” and “categories of open access publishing”, Dekker announced his plans to induce a complete “switch to the golden road” of Open Access (ibid.). In the original wording of Dekker’s letter:

“My preference is ‘golden’ open access; in other words, publication in journals that make research articles available online free of charge. My aim is for the Netherlands to have switched entirely to the golden road to open access within ten years, in other words by 2024. In order to achieve this, at least 60 per cent of all articles will have to be available in open access journals in five years’ time” (OCW, 2014, n.p.).

There are several discursive threads that stand out when reading this letter. As can be seen in the quotes above, the public funding argument was reiterated as one of the main recurring themes. The formula appears straightforward: research results funded by the public should be made available to the public, at no extra cost. Not only is there an implicit moral obligation to grant taxpayers access to the goods that they have already paid for, but also an underlying social contract that science should serve the needs of broader society. By removing access barriers to scholarly publications – at least in terms of additional paywalls – Dekker’s declared principal aim was to benefit readers and users of scientific knowledge beyond academic walls. In this way, various societal groups such as patients, teachers, and businesses would be enabled to apply the latest scientific findings at a greater scale and speed (OCW, 2014).

Another major thread found in the letter draws on utilising advantages of digital technologies. As stated in its description of “the current system of publication”, the advent and widespread use of the internet in the area of academic publishing meant that scholarly books and journals were increasingly being published electronically. Building on this “technological revolution”, according to the letter, the groundwork for Open Access had been laid, making it possible to offer “readers worldwide access to research publications, journals and books free of charge” (OCW, 2014). Although no direct reference was made in the letter, these lines of argument echoed the assertions of the founding document of the Open Access movement, the BOAI declaration. Here, an “old tradition” of publishing the fruits of research and “a new [internet] technology” were seen as converging towards “an unprecedented public good” (BOAI, 2002). If joined together, or so went the initial expectations, “the world-wide electronic distribution of the peer-reviewed journal literature and completely free and unrestricted access to it” would become attainable – whereas the only legitimate barriers for accessing that literature would be “those inseparable from gaining

access to the internet itself" (ibid.).

However, while it might be easy to agree on the principle that "access to the results of publicly and publicly-privately funded research should always be unrestricted" (OCW, 2014), there are more choices to make when it comes to concrete implementation routes. In order to induce "a fast transition from subscription-based publishing to open access", various "stakeholders" in the Dutch academic publishing landscape were explicitly addressed and requested to "switch" entirely to an Open Access publishing system within ten years (ibid.). To specify the state secretary's vision in more precise terms, the letter also laid the cornerstones within which to navigate. Here, Sander Dekker expressed a "preference" for the so-called Golden road to Open Access, defined in the letter as "when the author pays the publisher to publish his or her paper (the article publishing charge or APC) and the publisher makes the entire journal available online free of charge". Dutch universities, academy institutes, and the national research council were told "to prioritise" this publishing model in their own policies (ibid.).

In this way, Dutch academic institutions and their libraries were instructed to get accustomed to paying for article publishing charges instead of journal subscriptions. Yet, probably anticipating that a changeover to this new academic publishing mode would take some time and effort to materialise, the state secretary also presented an interim solution. "Until the publishers have switched to the golden road to open access", readers of the letter were informed, "I prefer a system of hybrid journals in which institutions pay to have papers published open access in subscription-based journals" (OCW, 2014). That is, researchers at Dutch universities could continue publishing their work in conventional closed-access journals, but would have to make their individual articles openly available via the hybrid route.

Furthermore, with an eye towards the upcoming negotiations on bulk subscription agreements between national research consortia and major scientific publishers (often referred to as "Big Deals"), the list of provisions made in the letter was complemented with another requirement to be observed. The agreements to be made in 2014, just shortly after the letter was issued, were expected to include arrangements for Open Access publishing in their terms. To be more precise, they "should be based on the premise that publishers will make all their journals open access or that they are prepared to negotiate arrangements to offset article publishing charges with licensing fees in order to avoid double payment" (OCW, 2014). Thus, by the end of the letter, negotiators on both sides had received a number of rules and prescriptions to follow and were supposed to know how to proceed further.

6.2 Pulling the strings – Setting up the negotiation stage

After learning about the ambitious plans of state secretary Dekker to "roll out" an Open Access system in the Netherlands, as well as the means deemed appropriate for this purpose, institutional actors in the Dutch academic publishing landscape had to react quickly. Among them, Dutch universities and research institutes, and particularly their libraries as those hitherto responsible for negotiating "Big Deals" with scientific publishers, were expected to accommodate the new political

demands. Because adding Open Access publishing components to the next round of these journal subscription bundles was declared to be one of the main measures for achieving the goals in the letter, it was now up to these actors to set the stage for their successful implementation.

As a body representing the Dutch research universities that produce the bulk of domestic scientific publications, VSNU has ultimately become the organisation in charge of effectuating the Dutch Open Access transition. Since taking up the mandate of the Dutch government in mid-2014, VSNU has strategically focused on negotiating dedicated agreements with the biggest scientific publishers. As disclosed in VSNU's own electronic magazine, the *to-do-list* included eight names – Elsevier, Springer, Sage, Wiley, Oxford University Press (OUP), Taylor & Francis, the American Chemical Society (ACS), and Kluwer – “which together account for 70 to 80 per cent of the turnover of all Dutch scientific publications” (VSNU, 2016b, pp. 4–5). The decision to go top down on the list, starting from the biggest publishing companies, was grounded in the prospects of covering the lion's share of Dutch scientific publications – and in helping to fulfil the ambitious targets set in Dekker's letter in due time.

Furthermore, focusing on a small number of large publishers was also intended to make the transition more manageable. This choice has become one of the characteristic features of the negotiation strategy employed by VSNU. Labelled the “Dutch approach”, the university association conceived four “success factors” that allowed this relatively small-size country to become “one of the fastest growing open access countries in the world” (VSNU, 2016b, p. 12). Among these factors, “a powerful delegation” was identified as of critical importance for its capability to take the negotiations between Dutch universities and major scientific publishers “to the highest administrative level” (VSNU, 2016b, p. 13). While normally, delegates from academic libraries would meet with publishers at the negotiating table, in the new setting, Presidents of the Executive Boards at universities themselves stepped in to lead the negotiations. In this way, by changing the setup of the negotiation teams, VSNU transformed them into “executive negotiations” (VSNU, 2018a, p. 5). Moreover, moving the leadership from librarians to high-level executives in eight negotiations was not only deemed feasible for prospective negotiation teams, but also was said to have allowed universities “to negotiate at a different strategic level” (VSNU, 2016b, p. 13).

Another key feature and a novelty of the “Dutch approach”, as retrospectively described in VSNU brochures, was termed a “unique bargaining model” (ibid., p. 12). Because negotiation teams confronted the publishers “on behalf of all research universities and universities of applied sciences in the Netherlands, all university libraries, and the National Library of the Netherlands (KB)”, it was said to have considerably strengthened their position and negotiating power (ibid.). While some other “forms of collective negotiating by a consortium in other countries” were noted, such as at the regional level as in Spain, the governmental level as in France, or by establishing a representative organisation specifically for this purpose as in the UK and Austria, the Dutch bargaining model was said to be different (ibid.). According to VSNU, speaking in one voice “on behalf of the Netherlands as a whole” was thus seen as one of the factors that “made it possible to create momentum” (ibid.).

Next to this, “clear political support” from science policy-makers was “unravelling” by VSNU as another critical factor that helped establish “the successful Dutch lobby” (VSNU, 2016b, p. 5). Shortly after state secretary Dekker’s goal of completing “the full transition to Open Access” was announced in the letter to the Dutch Parliament, the topic was made “a focal point” of the upcoming Dutch presidency of the Council of the European Union scheduled for the spring of 2016 (ibid, p. 12). Together with his British counterpart, Dekker appealed “to other European education ministers to also commit themselves to open access” and campaigned for a “cross-European coordination” (ibid.). In the run-up to the Dutch Council Presidency, Sander Dekker and EU Commissioner for Research, Science and Innovation, Carlos Moedas, released a joint statement calling on the main scientific publishers “to adapt their business models to new realities” (European Commission, 2015). Speaking of this bilateral meeting, Commissioner Moedas was further cited as reiterating “the strong commitment of the European Commission to open access to scientific peer reviewed publications, which is a cornerstone of one of his top priorities – the policy on Open Science” (ibid.). In return, such active political support at the national and European level was acknowledged by VSNU as “a boost for the negotiators” (VSNU, 2016b, p. 12).

Finally, “fidelity to principles” was named as the last of the four Dutch “success factors” (VSNU, 2016b, p. 13). According to VSNU, because of the “steadfastness” of its negotiators, it was possible to get “what they set out to achieve” and to extend common Big Deal subscription agreements with Open Access publishing components on “budget neutral” terms (ibid.). That is, increasing the percentage of Open Access articles to be published in traditional subscription journals was to be implemented “at no additional cost to universities or the Netherlands” (ibid.). Moreover, the principles of the Dutch negotiating team were said to be “as clear as glass from the outset”, with no room for a compromise (ibid.). Yet such a firm determination of “the Dutch efforts during the sometimes difficult negotiations with eight major scientific publishers” (VSNU, 2016b, p. 13) might have been greeted with less enthusiasm on the other side of negotiating table.

As argued by one of the executive-level team members and chief negotiator leading the VSNU-Elsevier negotiations, Gerard Meijer, Dutch universities conveyed a strong message to academic publishers that they are determined to achieve their goals. In the case of these particular negotiations, the principled standpoint of VSNU delegates vis-à-vis their interlocutor can be illustrated with the following quote (VSNU, 2016b, p. 13):

“We are willing to pay publishers for the work they do, but Elsevier’s profit margin is approaching 40 percent, and universities have to do the (editing) work and pay for it. We aren’t going to accept it any longer. I think from the fact that Elsevier is not willing to move much, they simply still don’t believe it. Well, they got us wrong”.

This testimony further indicates that reaching an agreement between Dutch universities, as represented by VSNU, and the publishing company Elsevier, was not a straightforward task. After providing an overview of the initial decisions and strategic considerations that were said to constitute the innovative Dutch approach, which was applied equally to all negotiations with the eight biggest scientific publishers, the next section will take a closer look at the particular case with

Elsevier. From starting the negotiations in summer of 2014, until reaching an initial three-year agreement in late 2015 (VSNU, 2015c), a number of meetings and turns in their development took place. On the following pages, I will briefly recapitulate the lengthy process of crafting an adjusted Dutch-style “Big Deal” with Open Access publishing components, as well as some of the distinct negotiation steps that led to adapting it to suit the new Open Access goals.

6.3 Pulling the plug? On the VSNU-Elsevier negotiation steps and crafting the deal

On 10 December 2015, VSNU issued a joint press release announcing that Dutch universities and Elsevier had reached an “agreement in principle on Open Access and subscription” (VSNU, 2015c). Along with this statement, a list of selected questions and corresponding answers was attached to complement the news. Several of the issues covered in this two-page document addressed the difficulties faced by negotiation teams on their way towards a tenable accord. For example, one of the questions asked “Why did it take so long?” for negotiators to reach an agreement (VSNU, 2015d, p. 1). This was answered by explaining that both sides had “major interests at stake and neither side was prepared to act rashly, which can cause negotiations to take some time” (ibid.). As for “the greatest disagreement” in this process, “intense discussions on the financing” of Open Access publications were named (ibid.).

Indeed, fulfilling tough financial conditions as prescribed in Dekker’s letter and achieving an Open Access transition at no extra cost to Dutch universities was reported to be one of the main challenges and points of contention in the VSNU-Elsevier negotiations. Although the first “Big Deal” extended with Open Access publishing components had already been signed by VSNU with the publisher Springer in November 2014, just some months after taking up the mandate and starting its high-level negotiations, it took more than a year longer to deliver similar news about the publishing house Elsevier (VSNU, 2015c, 2016b). Instead, negotiators on both sides of the table repeatedly found themselves in incompatible positions. The negotiations had been suspended and resumed again several times, and the official communication from VSNU suggested that the situation didn’t improve over following months. For instance, in a press release dated 4 November 2014, VSNU declared that “negotiations between Elsevier and universities failed” (VSNU, 2014b). In line with the government’s policy, it was said that Dutch universities would only prolong the agreements on subscription bundles if the publishers took steps towards Open Access and agreed to make Dutch academic publications freely accessible to everyone. Yet in the eyes of VSNU, “the proposal presented by Elsevier [in October 2014] totally fails to address this inevitable change” (ibid.). At the same time, the universities hoped “that Elsevier [would] submit an amended proposal” – and thus, keep the door open for continuing the negotiations (ibid.).

Given the potentially heavy consequences in a state with no “Big Deal” agreement, and hence no university-wide access to new research articles published in Elsevier’s journals, a “supplementary information” document explaining the situation for researchers in the Netherlands was released (VSNU, 2014c). In this document, VSNU confirmed “that negotiations between the Dutch universities and publisher Elsevier regarding open access have reached an impasse” (ibid.). Although Dutch universities and the University Medical Centres were said to be “open to renew

negotiations as soon as an acceptable offer is put on the table”, in the meantime, preparations for a scenario with an expiration of journal subscriptions were undertaken (ibid.). “In case this happens”, as the readers were informed, “researchers will still be able to publish in Elsevier journals. They will also have access to back issues of these journals. New issues of Elsevier journals as of 1-1-2015 will not be accessible anymore. Universities will explore solutions to this problem” (ibid.).

However, this worst case considered by VSNU didn’t come to pass and negotiations between both parties resumed – although only to find themselves “in deadlock” once again soon afterwards (VSNU, 2015a). As Dutch academics and other interested parties could learn in an “Open access fact sheet” released in June 2015, since coming to a halt in November 2014, “the contract already in place at the time was extended by a year to ensure ongoing access to Elsevier publications” (ibid.). Yet it had not been possible to reach an agreement on Open Access publishing thus far and the negotiations were “at risk of remaining in continued deadlock” (ibid.). As explained by VSNU, after receiving three unsatisfactory proposals from Elsevier, negotiations between both parties “have so far led nowhere” (ibid.). Therefore, Dutch universities were led to “seriously consider a possible scenario in which no new agreement will be reached with Elsevier” (ibid.). To cope with this possibility, preparations were underway for the “likely” case that Dutch universities would face this situation: this time, anticipated from 1 January 2016 onwards (ibid.).

At the same time, this statement entailed a call upon academics to act. In particular, those “who work with Elsevier as editors” were invited to highlight this issue on editorial boards and “to put pressure on publishers, supporting the joint position of the Dutch universities” (ibid.). The potentially instrumental role of established researchers, and particularly of journal editors, was emphasised even more in the plan to start the Elsevier boycott announced by VSNU in July 2015 (VSNU, 2016b, p. 10; Scienceguide, 2015; Brugh, 2015; Kingsley, 2015; Wijkhuijs, 2015). The considerations leading to the new level of escalation between both parties were explained by VSNU in the following way:

“After negotiations with Elsevier [came] to a standstill in June, Dutch universities consider boycotting one of the world’s largest scientific publishers. The hundreds of scientists and academics working as chief editor at one of the 2,200 Elsevier journals are approached with the question of whether they would consider leaving their jobs” (VSNU, 2016b, p. 10).

One prominent case in which this scenario indeed materialised occurred in the field of linguistics. In October 2015, after a failed attempt to renegotiate the terms of editorial collaboration with Elsevier, including a request “to transfer the journal to full Open Access status” (Rooryck et al., 2015), the full editorial board and all editors of the journal “Lingua” resigned by end of that year. The collective of editors, including researchers at Leiden University in the Netherlands, instead established a non-profit foundation under Dutch law and launched a new journal, “Glossa”, with a different publishing company (LingOA, 2015). In its e-zine on Open Access, VSNU publicly supported “this important step towards open access” and applauded the researchers for their

courage to “say goodbye to their current publisher” (VSNU, 2016b, p. 10).

As can be seen from the developments described above, swinging between the “failed” state and resuming earlier efforts to find a feasible compromise for both sides was characteristic for the VSNU-Elsevier negotiations throughout the whole year. Whether *to pull the plug* and to cancel the next regular “Big Deal” on journal subscriptions – and, thus, to risk cutting off access to Elsevier’s journals at Dutch research institutions – was the guiding issue discussed within the university negotiation team at that time. However, in this emotionally laden atmosphere, negotiations with Elsevier were soon reported by VSNU to “have taken a constructive turn” and to be “in full swing” in late November 2015 (VSNU, 2015b). Somewhat surprisingly then, an “agreement in principle” was announced by both parties just some weeks later (VSNU, 2015c). Yet given the timing of these events, as well as the list of constraints attached to the resulting agreement, some observers dubbed this end-of-year news as a modest “Christmas deal” (LERU, 2015b). The key features of this three-year contract that ran from 2016 to 2018 will be the focus of the following subsection.

6.4 A modest Christmas deal? An overview of key features of the VSNU-Elsevier agreement for 2016–2018

The agreement announced in December 2015 was formally established between negotiation teams at Elsevier and VSNU, acting on behalf of Dutch universities and backed up by the Dutch Consortium of University Libraries (UKB) and the Royal Library of the Netherlands (KB), as well as with administrative support from the SURF organisation (VSNU, 2015c, 2015d; Elsevier, 2016). As is common for country-level Big Deals, this agreement was determined for a period of three years, to run from the beginning of 2016 to the end of 2018. Compared with the regular Big Deals between Dutch universities and major scientific publishers, the main novelty of this contract was that it combined the usual journal subscriptions package with an Open Access publishing allowance in one bundle (VSNU, 2015c, 2015d). Although this agreement was to start immediately from 1 January 2016, just a few weeks after the official announcement, at first its details were still to be finalised “in the near future” (VSNU, 2015c). Particularly the list of selected journals that were applicable under the novel Open Access publishing arrangement still had to be defined and was only made known in March of 2016 (VSNU, 2016c).

Yet reaching an agreement in principle, after such a lengthy negotiating process, was greeted on both sides as an achievement “that marks a milestone in the Netherlands’ transition to Open Access scholarly publishing” (VSNU, 2015c, n.p.). On this occasion, the chief negotiator for VSNU and chairman of Radboud University in Nijmegen, Gerard Meijer, was cited as being “pleased about this agreement” as it was seen to facilitate “a sustainable transition to Open Access” and to help achieve the national goals (ibid.). In his words, “it’s genuinely good news and a big deal for Open Access in the Netherlands” (ibid.). However, despite the praise in official statements by both negotiation parties, the resulting agreement entailed a number of constraints and limitations attached to it. Under the terms of the “Pilot Gold Open Access” agreement, as the Open Access publishing component of the contract was named, “authorized users” affiliated with an institution

participating in this agreement were allowed to choose an Open Access publishing option upon acceptance of their manuscript at no individual cost (Elsevier, 2019, p. 11). Yet to become eligible for this supposedly *gratis* offer and be relieved of the request to pay the associated APC fee, a number of conditions had to be fulfilled.

First, one had to be identified as a “corresponding author” of the journal article accepted for publication and be affiliated with one of the 14 Dutch research universities or a university medical centre (academic hospital). This means that researchers working at universities of applied sciences, non-university research institutes, or anywhere else outside of this “core” of Dutch academia were ruled out. How this requirement would affect non-university researchers in their ability to make use of the Dutch Open Access agreements was also addressed in a special Q&A section for scientists prepared by VSNU (2016e). As the readers of this FAQ were informed: “Researchers who are affiliated with a university or medical centre can follow the agreements as made within the big deal negotiations. Researchers without such an affiliation will be required to pay for the publication of an article” (ibid., n.p.). To somewhat comfort the latter, these researchers were reassured: “Of course, they too benefit from the open access transition to freely accessible publications” (ibid., n.p.).

Second, this pilot offer was limited to selected journals only. As interested authors could read in the information sheet along with the applicable journal list:

“If an author chooses to publish open access in journals listed below, then the article processing charge (APC) will be paid for through a central payment scheme set up by the Dutch universities and Elsevier. Authors choosing to publish open access in any other journal will need to pay for the APC” (Elsevier, 2016).

In the first year of the agreement, the list of applicable journals included 141 titles, followed by 276 titles in 2017 and 398 titles in 2018, out of more than 2000 titles in Elsevier’s overall journal portfolio (Openaccess.nl, 2016, 2017; Elsevier, 2016, 2017, 2018).⁷³ All of these journals were based on traditional subscription model that allows its authors to *ransom* individual articles to make them accessible to non-subscribers, too (i.e. the so-called hybrid Open Access route). While some journals published by Elsevier also run as fully Open Access journals, none of these was included in the agreement for 2016–2018. The selection of journals was said to have been based on in-depth analysis and to cover subject domains “with a relatively mature open access culture” (VSNU, 2016a). Based on these criteria, the focus was laid on the nature and health domains in the first year of the agreement (ibid.). In the following year, this focus was expanded to include further subject fields such as water, chemistry, logistics, pharmacology, and toxicology.⁷⁴

73 For details on the latest agreement with Elsevier, see overview of all “Publisher deals”: <https://www.openaccess.nl/en/in-the-netherlands/publisher-deals> and <https://www.elsevier.com/open-access/agreements/VSNU-NL> [last checked on 25/07/2022]. Original copies of the earlier supporting documents and journal lists archived by the author.

74 See <https://www.openaccess.nl/en/events/open-access-titles-at-elsevier-rising-from-140-to-276> [last checked on 25/07/2022].

The gradual increase in the number of applicable journals under the VSNU-Elsevier agreement was expected to incrementally cover 10-20-30% of Dutch publications in Elsevier's journals portfolio over the three years. That is, this regulated pace to grow the share of Open Access articles among Dutch publications was further coupled with the third major limitation: the maximum number of articles to be published in Open Access under this agreement. In absolute terms, the total of 3,600 journal articles was calculated for the period of three years, scaling up from 600 to 1200 to 1800 each respective year (Elsevier, 2016). In the event that the annual quota for the number of articles under this pilot Open Access agreement had not been reached, the unused amount would be carried over to the following calendar year (Elsevier, 2019, p. 11). Taken together, if a researcher eventually fulfilled all the eligibility criteria – i.e. being affiliated with a Dutch university as member of the consortium, wishing to publish their work in one of the selected journals, and being named as a corresponding author thereof – they would only have to tick the appropriate box and opt in to switch their articles to Open Access at no extra charge, at least until the maximum number of articles had been reached for the year.

According to VSNU, this publishing workflow was designed to incentivise the uptake of this offer among Dutch researchers and to relieve them of administrative burdens or potential budgetary constraints (VSNU, 2016a). However, in the “Q&A’s for the agreement with Elsevier” that was issued together with the news on the VSNU-Elsevier agreement in December 2015, some (self-)critical issues were also raised. For instance, one of the questions asked: “If academics do not have to pay APCs for articles in the designated OA journals, who does?” (VSNU, 2015d, p. 2). It was explained that the costs for the APCs have been “bought off” wholesale by Dutch universities and that the overall agreement was concluded in a “cost-efficient” way for them (ibid., pp. 1–2). On a different note, given the incremental coverage of the journal portfolio, another question expressed concern about whether this agreement went “far enough towards meeting Dekker’s ambition of 100% OA in 2024” (ibid., p. 2). As an answer, to reassure potentially worried readers of its alignment with the government’s goals, the agreement was said to facilitate Open Access publishing “in a managed way” – and Dutch universities even expected “to see an explosion in Open Access growth” by the end of its duration in 2018 (ibid.).

Yet this appraisal would be revised some time later, considering the substantially lower than anticipated uptake levels of this pilot Open Access offer among Dutch researchers. To address such discrepancies and other dilemmas in the attempts to implement the national Open Access transition plan in the Netherlands, the following chapters will be dedicated to the analysis of this empirical case from a different, conceptually driven angle. For this purpose, I have built a special conceptual “scaffolding” that draws on infrastructure studies as its main analytical backbone and which will be enhanced with additional concepts and sensitivities, where necessary (for more details, see chapter 4. *Theoretical framing*). The result is a different storytelling of the Dutch Open Access odyssey. On the one hand, it is a story that is more responsive to the complexities and ambivalences observed in this particular empirical case. But on the other, it also offers an insight into much broader issues and debates on the redistribution of roles and responsibilities among various actors in the academic publishing system, as well as into partially conflicting goals and

visions on how scientific knowledge should be produced, communicated, and used.

7. Zooming in on the micro-dynamics of the letter: Building up momentum for the Dutch Open Access transition

As I have already suggested with an overview of key episodes of the Dutch Open Access odyssey, implementing the goal to “switch” the Netherlands to a fully Open Access publishing system entailed a long chain of events and negotiations between various parties. From declaring a national target to reach 100% Open Access by 2024 to converting this political objective into detailed agreements with major publishers, the propositions made in the letter by state secretary Dekker had far-reaching implications. Because of the huge significance of this letter, in this chapter I will trace back its making processes in the first place as well as the micro-dynamics that this document triggered shortly before and after it was delivered to the Dutch parliament. In contrast to the brief summary of events in the preceding chapter, here my approach is guided by the conceptual lens of the “sociology of translation” (Callon, 1986) and is complemented by original interview accounts. In the tradition of Grounded Theory (Charmaz, 2006), by bridging empirical materials and theoretical explanations I aim to ideally advance two objectives: understanding the empirical case under study and contributing to the development of explanatory theories themselves.

7.1 Taking the letter as a starting point of this empirical case study

7.1.1 Theoretical backdrop for studying the letter

As elucidated in more detail in chapter 4. *Theoretical framing*, I propose to conceptualise the academic publishing system as a socio-technical infrastructure and to analyse the case study at hand as an example of a special type of infrastructuring or “re-infrastructuring” (Grisot & Vassilakopoulou, 2017). Drawing on their research about eHealth services development in Norway, Miria Grisot and Polyxeni Vassilakopoulou (2017, p. 8) proposed the use of this term to emphasise the interventions in mature infrastructures as activities “where an existing infrastructure is further developed according to new logics and directions”. This point is clearly recognisable in the Open Access negotiations in the Netherlands and particularly those between VSNU and Elsevier. Here, the prospective negotiators were instructed in Sander Dekker’s letter to adjust the conventional Big Deal arrangements to accommodate the goal of full Open Access. According to this new logic, all scholarly publications would eventually become freely available to readers by default, instead of libraries or readers themselves having to subscribe to selected journals as before. At the same time, during the transition period from subscription-based to Open Access publishing, this necessitated running both the “old” and “new” systems in parallel: to continue access to publications in “closed” subscription journals while simultaneously increasing the share of journal articles published in an “open” access mode.

One of the main design concerns in such re-infrastructuring activities, as argued by Grisot and Vassilakopoulou (2017), is to bring about strategically directed changes, while simultaneously

acknowledging the distributed character of decision-making processes. Yet how exactly should one study such encounters, where “traditional design approaches are challenged by the distributed character of design for re-infrastructure and the complexity of cooperation within an evolving constellation of multiple actors” (Grisot & Vassilakopoulou 2015, cited in Grisot & Vassilakopoulou, 2017, p. 26)? While in their empirical study Grisot and Vassilakopoulou (2017) lay invaluable groundwork for turning one’s attention to particular features of and specific challenges when engaging with mature infrastructures, the (inter-)actions among this multitude of actors remain somewhat undertheorized. To fill this gap, additional insights from the Actor-Network Theory (ANT) and particularly the “sociology of translation” (Callon, 1986) lend further aid.

A signature feature and one of the well-trodden pathways in ANT scholarship has been following “actors, objects and texts as they move around bringing seemingly distant actors closer together in the sense that divergent ‘interests’ come to complement one another ..., and disparate practices become cohesive” (Michael, 2017, p. 25). In the tradition of ANT’s handicraft, the analyst’s attention is drawn to the formation of “actor-networks” and the processes by which (temporary) assemblages or associations between multiple and heterogeneous entities are forged (see, e.g., Michael, 2017, p. 7). Drawing inspiration from Michel Callon’s (1986) study on the attempted “domestication” of scallops (and the fishermen) in St. Brieuc Bay in France, I will incorporate the lessons learned from this endeavour to enhance the present empirical analysis. More particularly, this amendment of the theoretical framework prompts a shift in the analytical gaze towards specific translation and negotiation processes by which a certain problem and its proposed solution are defined and become established against alternative understandings.

Considering re-infrastructure activities from this network-view is in line with some basic observations in infrastructure studies. As Grisot and Vassilakopoulou themselves argue, “purposeful interventions in an existing infrastructure entail an engagement with the intentionality of various actors as development decisions are distributed within *the network* of existing technologies, people and organizations” (Vassilakopoulou et al. 2016, cited in Grisot & Vassilakopoulou, 2017, p. 26, emphasis added). Although a certain actor – such as a national or governmental agency – can have significant power to mobilise resources and institutional influence, “the new features of the infrastructure emerge from the meeting between a strong actor’s intentionality with the numerous micro-level decisions and actions by a multitude of related actors” (ibid.). That is, overturning the customary workflows in academic publishing infrastructure, as aspired to in state secretary Dekker’s letter, is not just a matter of political will or an ambitious plan. On the contrary, any intervention in a mature infrastructure needs to deal with the fundamental tension between planned or intended changes and the unpredictable dynamics in its genesis and development (Edwards et al., 2007, cited in Karasti & Blomberg, 2018, p. 240). In other words, studying whether and how a certain attempt will be successful – or not – thus essentially becomes an empirical question.

When putting both conceptual lenses together – re-infrastructure and ANT – another set of commonalities and potentials for cross-fertilisation between them come to the surface. As can be

shown for illuminating this particular empirical case, attempting to “turn” the academic publishing infrastructure in accordance with a new logic, as defined in re-infrastructuring terms (Grisot & Vassilakopoulou, 2017), can be compared with an attempt to reassemble an existing actor-network. That is, re-infrastructuring the academic publishing system with its predominant journal subscription model towards the new Open Access requirement can be equally examined from an ANT perspective: as reassembling this socio-technical network in new ways and convincing various actors and other actants to play their assigned roles (cf. Callon, 1986; Mathar, 2014). But in light of the overall theoretical framework in this thesis, the processes of translation can be best situated as *part of* a broader range of re-infrastructuring processes.

I have identified the letter by state secretary Dekker and the events triggered by it shortly afterwards amongst the most marked occasions where such processes can be observed in the present empirical case.⁷⁵ As I will show in the following chapters, this letter has become a major source of disruption for re-defining the roles and relationships between the main parties in the Dutch academic publishing landscape. Therefore, zooming in on the micro-dynamics of the letter with the help of ANT and particularly of the sociology of translation (Callon, 1986) helps shed light on the broad spectrum of issues that can be discerned at this initial episode of the Dutch Open Access story. Instead of simply tracing the events in chronological order and the supposedly straightforward decision-making, unfolding the multiple layers of translations and negotiations acts as a counterbalancing approach to the official narrative of unanimous support for the projected action plan.

Furthermore, lending additional sensitivity to translation processes within broader (re-)infrastructuring activities is particularly useful to help explain the profoundly relational quality of infrastructures and the roles of intentionality and intervention in building or maintaining them (cf. Karasti & Blomberg, 2018). As Grisot and Vassilakopoulou (2017, p. 26) write, “the importance of creating synergies, aligning interests and goals, [and] motivating cooperation” have been increasingly highlighted in previous studies on infrastructuring. This, again, is in line with one of the early salient features of infrastructures promulgated by Susan Leigh Star that these are “never being changed from above, and nobody [is] really in charge of them as multiple negotiations and adjustments are involved” (Star 1999, cited in Grisot & Vassilakopoulou, 2017, p. 26). That is, “grappling with the scope and scale of a fully-fledged infrastructure that is already in place” always means dealing with “the breadth and multitude of actors involved” (Grisot & Vassilakopoulou, 2017, p. 26). Taken together, zooming in on an attempt to “turn” the conventional arrangements in the academic publishing infrastructure towards new political Open Access objectives is what makes the empirical case under study a prime example of re-infrastructuring.

Methodologically speaking, “marrying” ANT and re-infrastructuring lenses for this part of the empirical case study is a form of my own appropriation of ANT. According to Mike Michael, the affordances offered by ANT can be brought in “as a positive resource or a source of irritation” or

75 For similar arguments to analyse technology policy when studying the development of particular technologies, see also contributions by Knut H. Sørensen (2002; 2013).

“an analytic and methodological sensibility” (Michael, 2017, pp. 1–2). What elements of it might be useful and how these might potentially inform one’s own research, essentially remains a question to be answered by the individual researchers themselves. And while the analogy with the fate of scallops at St. Brieuc Bay and the principle of radical symmetry when examining the role of humans and non-humans, as stressed by Callon (1986), might have only limited applicability in this particular empirical case, it still helps as an intermediary analytical exercise and a thought experiment. Or, to put it in the words of Mike Michael: “and perhaps, somewhere down the line, [students interested in ANT] might develop a taste for it, gently import it into their projects, and put it into dialogue with other approaches with which they are more familiar” (Michael, 2017, p. 2).

7.1.2 *Opening up the making of the letter*

Similarly to “a scientific and economic controversy” that occurred in northwestern France during the 1970s (Callon, 1986, p. 196) and which will be introduced in more detail in the next sub-chapter, the entry point into the Dutch Open Access endeavour is marked by a *trip overseas*, if somewhat figuratively. In Callon’s story, a group of marine biologists attempted to implement a novel conservation strategy for the declining population of scallops in St. Brieuc Bay after learning about a local cultivation technique that they had encountered during their recent visit to Japan. The enthusiasm for envisioning a national Open Access transition in the Netherlands, as repeatedly pointed out in Sander Dekker’s letter (OCW, 2014), was heavily influenced by a similar initiative in the UK. The “technique” that sparked the interest of the Dutch science policy-makers, in turn, was the Golden road to Open Access paved with APCs. This publishing model was at the core of recommendations to the British parliament in a then-recent report of a group chaired by Dame Janet Finch (Finch group, 2012). In both cases, the question to be answered by the key actor in each story, following Callon (1986, p. 203), “is simple: is this experience transposable [from Japan] to France”, and, correspondingly, from the UK to the Netherlands?

The importance of the Finch group’s report for devising the Dutch Open Access strategy was also confirmed by one of the interviewees for this thesis who had been involved in writing the letter (see also sub-chapter 2.2 *Materials and methods*). This report, as explained in the letter, was commissioned by the UK government and recommended that “[all the parties] embark on the transition by focusing on open access journals” (OCW, 2014, n.p.). Indeed, as one can read in its original wording, the first of the Finch group’s recommendations was that “a clear policy direction should be set towards support for publication in open access or hybrid journals, funded by APCs, as the main vehicle for the publication of research, especially when it is publicly funded” (Finch Group, 2012, p. 7). As remembered by the interviewee, given the timing of the task to draft the letter for state secretary Dekker, this report became a major point of reference: “now in the UK there was already a rather ambitious policy announced with golden open access ... so that was more or less the point at the horizon, the UK [had] set the stage. So it is nice that there [was] something [in place] already” [int_16:48-49].

Yet the publishing routes chosen in Dekker’s letter and the genesis of its content were influenced

by a number of forces and individual interests. As one can learn about the origins of the letter in its own opening statement:

“During the general parliamentary consultations on Science Policy of 18 April 2013, I promised to explain my ideas about the practice of providing open access to research publications and how that practice will continue to evolve. ... In this letter, I will explain my underlying motives, the targets that I am setting, and the actions that I consider necessary to create an open access system.” – The State Secretary for Education, Culture and Science, Sander Dekker, 15 November 2013 (OCW, 2014, n.p.)

Although this letter was formulated in the name of state secretary Dekker and signed by him alone, it was not just a brainchild of an ingenious politician who had discovered access barriers to scientific knowledge as an important topic in his area of responsibility. Rather, it built on years of groundwork by various institutional and individual actors in the area of Open Access publishing, including those at Dutch research institutions and academic libraries. Likewise, the process of compiling the document itself can be better described as the result of an intense craftwork and collaboration among several ministries, their science and research departments, and other related parties.

Since promising to inform the parliament meant that an act of sending a formal letter had to follow, there was a lot of work to be accomplished especially at the OCW ministry. At that time, with his role as the secretary of state at OCW, Sander Dekker was in a position of the Dutch ministerial hierarchy that was said to have a bit less power than the minister and, thus, is “sometimes called junior minister” [int_16:17]. Even though writing such letters can be viewed as a regular procedure in political bureaucracy and a certain ritual for communicating ideas and proposals between the ministries and parliament, this job still had to be carefully organised. From drafting an initial version of the letter, to gathering feedback from relevant parties, to incorporating and consolidating all comments, science policy-makers and civil servants in various offices were confronted with a daunting task. Given that this letter had to be prepared only in a few months – from giving this promise during the general parliamentary consultations (*algemeen overleg [AO]*, in Dutch) in April of 2013 until the next AO on science policy, scheduled to take place later in the same year, there was not much time to waste. Therefore, dealing with such an extensive and time-sensitive issue called for additional expertise or at the very least another pair of hands. That is why the OCW ministry approached several Dutch research organisations looking for temporary staff to support this task – including one of the interviewees for this PhD project. This interview, with someone who was directly involved in the letter-writing process, serves as a major source of background information on this demanding exercise, beyond the official parliamentary documents and the meeting protocols published by the Dutch government (see sub-chapter 2.2 *Materials and methods*).

As this interviewee recalls, even for someone working in the research policy area, this short-term secondment was “an eye-opener” for illuminating the entanglement of multiple stakes and interests at play. This started with an observation that ensuring free access to scientific publications for the benefit of Dutch taxpayers relates to several areas of responsibilities between and within

the ministries themselves. While the Department of Science and Research Policy at OCW took the lead in formulating the letter, this process further required close consultations with the Department of Higher Education as well as other colleagues dealing with innovation issues at the Ministry of Economic Affairs. Because when drafting the letter everyone wanted to have a say and to see their viewpoints properly represented, the interviewee described the letter-writer role rather as that of a “*process manager*, trying to put in all the comments and make sure that it [is] still a readable letter” [int_16:94; emphasis added]. While bits and pieces were being put on paper, some statements would be removed and would re-emerge again if someone from the involved parties argued for it to be a crucial point. At the end, the extent to which all input had to be combined into one letter can be illustrated by the following remark: “I don’t think there is one sentence that I can identify as a sentence that I have written in that way” [int_16:92].

Yet the spheres of influence on what and how something should be mentioned in the letter reached well beyond the ministerial premises. While the process of consulting the opinions of “people in power” in the Dutch science system was perceived as a regular custom in ministerial practice, contact requests from other parties seemed to overwhelm the newly appointed letter-writer:

“Then what happens, is that, of course, everybody knows that there will be this letter, because it’s promised. So everybody wants to have a talk with Sander Dekker ... and when they [the publishing companies] found out that I was sitting there, they wanted to talk with me, [but] I am just writing the letter [laughing], I have got no influence, but suddenly I had a different position from, you know, than sitting here” [int_16:37-40].

Although listening to the buzz and reacting to the signals outside of the ministry was regarded as generally helpful for informing the policy-making processes, some scientific publishing companies demonstrated a particularly strong interest in this matter (for the presence of this actor during the AO in late 2013, see also section 7.3.2 *The devices of “interessement”* in this chapter). Indeed, given that this letter would announce an ambitious plan to change the business models in academic publishing, this aim could be expected to have potentially far-reaching effects or even threats to the core interests of the incumbents in this market.

The special role of Elsevier as a scientific publishing giant with headquarters in the Netherlands and, concomitant, significant tax liabilities in the country, demonstrates the high stakes for such legacy publishers in a particularly telling way (for more details, see also sub-chapter 8.2.3.2 *On the specifics of negotiating with Elsevier*). Keeping in mind the magnitude and the powerful position of Elsevier is obviously something that one cannot ignore when planning a large-scale intervention in the publishing business. This is even more the case for a politician like Sander Dekker, as a member of a political party that is known to be in strong favour of industry (*Volkspartij voor Vrijheid en Democratie [VVD]*, in Dutch).⁷⁶ As reflected by the interviewee who participated in preparing the letter, “there is this interesting tension that he more or less asked something from private companies which was rather different from what one would expect someone from that

76 See also Dekker’s curriculum vitae, as last captured by the Wayback Machine on 30 September 2021 at: <https://web.archive.org/web/20210930004240/https://www.rijksoverheid.nl/regering/bewindspersonen/sander-dekker/cv> [last checked on 25/07/2022].

party to ask". As the interviewee continued, "you see that [the major scientific publishing companies] understand the need to lobby". In the end, "there is always [a] lobby, so there is always a lobby, and when you understand that, then you suddenly understand also what's in the letter" [int_16:415].

However, dealing with many hands and minds was not the only challenge of writing this letter. As explained by the research policy specialist seconded to the OCW ministry: "so there was this whole process of writing the letter where people try to get influence, but in the end, I think, what remained was the idea that we needed to set high ambitions" [int_16:46-47]. Moreover, from the perspective of this interviewee, realising ambitious targets to be set in the letter required attaching clear directions on how to fulfil them. Because otherwise there would be the risk that "everybody [would continue] with business as usual" with "no route orders, no milestones", making it just an *empty letter* [int_16:117]. Therefore, this letter had to give instructions to responsible parties and to trigger immediate action on how to move forwards to a fully Open Access system within a certain period of time.

A somewhat coincidental circumstance then came into light at a decisive moment. Namely, the upcoming regular negotiation cycle for journal subscription packages under Big Deals:

"The most important event happening [at that time] was that one of the people who had a talk with Sander Dekker was rather knowledgeable about the whole process of negotiating the big deals, and he said, next year, which was, I think, 2014, the big deals will be negotiated again, that happens once every four years, and then I realised that you can write any letter you want with open access policies, but this provided an opportunity to really make a strong point" [int_16:62].

As explained further by this interviewee, "so what I said, when I realised that big deals [would be] negotiated immediately after the publication of the letter, I thought that needs to be in the letter" [int_16:249]. Because this timing coincidence was seen as a unique opportunity "to [send] a message to those involved in the negotiations, to the universities, as well as the publishers, [that] this is my request or demand" [int_16:70]. Thus, introducing requirements to include Open Access publishing components in the next round of negotiations on Big Deals was named in the letter as one of the main measures to be undertaken by affected parties. In this way, linking big ambitions with Big Deals became "the way to go" for realising "this incredibly high ambition" to shift from journal subscriptions to full Open Access publishing within ten years and "a really clear way or first step in order to reach that goal, so that's the plan" [int_16:250].

Finally, there are several additional twists to be learned about Dutch (science) politics when taking a closer look at the letter-writing process. On the one hand, the act of setting a national goal and a specific target year by which the full shift to Open Access publishing would be accomplished was said to convey a largely symbolic meaning. As explained by the same interviewee, "you can set any date [you want] but [only] as long as it's a date where people think 'oh, we need to act now or otherwise we will never get there'" [int_16:251]. As such, "the ambition has nothing to do with [whether it's] 2024 [or] 2020" [int_16:256] but more to do with the transition period required to

switch publishing models. That is, the necessity to set a target year was rather considered as a way to organise policy change with the job of the politicians being to mobilise action towards that goal.

At the same time, understanding this letter required some reading between the lines. Although it was formally sent by state secretary Dekker from the OCW ministry to the Dutch Parliament, it was not the Dutch members of parliament (MPs) who were primarily expected to respond to Dekker's aims. Instead, the message encoded therein had to be *translated* towards other parties in the Dutch science publishing landscape. Moreover, this subtle task also required taking into account the autonomy of research institutions and private companies. As explained by the interviewee who was involved in the letter-writing process: "the ministry does not send letters to the universities or the publishers, but expects that universities and publishers act [based on this letter]" [int_16:111].

At the same time, mobilising action and building alliances was said to be largely driven by the state secretary himself. As emphasised by the interviewee, the strong personal involvement of Sander Dekker was a special feature in this letter-writing exercise that seemed to considerably differ from the regular practice:

"I must say, I think, it is different from other issues at the ministry, the idea to really make this [a] strong point, is really something from Sander Dekker, so he, in other institutes, it might be that the civil servants have more power to convince their politician not to do something or to do something else; here, it was really the case of him, having this idea and convincing the people in the ministry that this should really be the way forward" [int_16:384-386].

At the same time, such an active personal engagement of state secretary Dekker brings to light another nuance to the Dutch Open Access story. As commented by the interviewee, "it was very much his personal push – he is a politician, after all. It is also being said that he aims to be the next minister of economic affairs" [int_16:348-349]. In other words, considering Sander Dekker's affiliation to an industry-friendly party, the prospect of broadening access to scientific knowledge and benefiting entire business branches as well as creating more innovation-driven jobs must have played an important role. Therefore, "what you see there is that from his political point of view, it is important that publicly funded science is accessible [to] others as well, including people in industry" [int_16:155].

It is then not surprising that the list of arguments and expected benefits from a fully Open Access publishing system given in the letter was repeatedly backed up with an economic rationale. This leads us back to the introductory remarks on the role of the Finch Group's report (2012) in envisioning the Dutch Open Access transition and drawing parallels between the goals of the conservation strategy of three marine biologists in Northern France and the political project "to switch" the Netherlands to full and immediate Open Access. While in the first case, the objective was to increase the stock of a local species of scallops in St. Briec Bay, the Dutch "scallop" epitomised by this comparison can be conceived as knowledge entities contained in scientific publications. By opening access to them in otherwise "closed" academic journals, the amount of

freely circulating knowledge entities would be increased and multiplied – to the delight of Dutch businesses and consumers alike. The expectation followed that these actors, in turn, were to utilise this knowledge in practical applications and give a boost to the Dutch “innovative capacity” (OCW, 2014, n.p.; see also a detailed analysis in section 7.3.1 *The “problematization” or how to become indispensable* of this chapter).

With regard to Callon’s guiding question on whether a certain experience is transposable from one setting to another, no clear answers can be given. However, the statements made by marine biologists in France as well as those by science policy-makers in the Netherlands “are held to be uncontested” (Callon, 1986, p. 204) and so used to justify their respective projects. In summary, elaborating the ideas of an ambitious politician entailed many layers of translations and negotiations both before and during the letter-writing process. These ranged from allocating responsibilities for this cross-cutting issue between several ministries and their departments, to delegating tasks and mobilising action from various parties, to finally signing dedicated agreements with the biggest scientific publishing companies. I will examine these processes of translation in more detail with the help of ANT and “the sociology of translation” (Callon, 1986). But before proceeding with the analysis of this empirical case, in a subsequent intermezzo we will first take a brief excursion to St. Brieuc Bay.

7.2 Learning from St. Brieuc Bay, or: Who are the “scallops” in the Dutch story?

7.2.1 Intermezzo: A brief excursion to St. Brieuc Bay

In one of the “classical” texts in ANT (Michael, 2017), Michel Callon (1986) describes the attempts by three marine biologists to develop a conservation strategy for the declining population of scallops in St. Brieuc Bay in northwestern France. While highly appreciated by French consumers as a gourmet dish especially during the Christmas season, the scallops (*Pecten maximus*) in the St. Brieuc Bay area have been systematically exploited by local fisheries for decades. If these practices were to continue in the same way, their population would soon find itself on to the brink of extinction, thus putting both sides, scallops and the fishermen, at risk of (self-)destruction. To prevent this from happening, a new actor – a group of three marine biologists – came into play and proposed a solution.

During a trip to Japan, the marine biologists had learned about a local cultivation technique which was said to help increase the stock of domestic scallops. In the Japanese case, the larvae of scallops anchor themselves to collectors on towlines that are immersed in the sea. Because of a special fine-netted bag on each of the collectors, the larvae can anchor more easily while simultaneously being protected from the starfish which threaten them. In this way, they are sheltered from predators and can grow undisturbed, if only to be harvested by the fishermen afterwards. Inspired by “the ‘spectacular’ results of the Japanese” (Callon, 1986, p. 10), the three researchers shared their enthusiasm about this technique in a series of reports and scientific articles once they returned home.

Although the French brioquine species is different from the one raised in Japanese waters (*Pecten patinopecten yessoensis*), the three marine biologists set off to promote the implementation of this “imported” invention in St. Brieuc Bay. If successful, the Japanese-inspired conservation strategy was expected to help scallops reproduce more actively and to a greater extent, thus resolving the dilemma and preventing their extinction. To make this happen, these researchers first needed to establish their own authority and “to impose themselves and their definition of the situation on others” (Callon, 1986, p. 196). That is, they had to convince all other actors and affected parties to adopt the proposed problem-solution understanding to tackle the issue as portrayed and mobilise support for the chosen pathway. Thus, a series of translation and negotiation processes began.

The main actors and play acts in the story plot of St. Brieuc Bay as described by Callon (1986) are summarised in the following information box.

The scallop story plot

The *marine biologists* become interested in the declining population of scallops in St. Brieuc Bay. The *fishermen* of St. Brieuc Bay have been exploiting the catch range up to empty fishing. They risk losing their own existential base and traditional activities if continuing in the same way. *Scientific colleagues* of the marine biologists need to be solicited to support the proposed solution in a series of reports. For the *scallops* to successfully reproduce, it is not enough for them to emit their *larvae* on *collectors*, but these collectors also have to be made of a special material in order for larvae to anchor on them. *Other parties* are expected to enrol without any resistance. If all these conditions are fulfilled, then the solution proposed by marine biologists will be successful and the stock of scallops increased.

Building on this illustrative example, Michel Callon developed a novel conceptual framework that he termed “the sociology of translation”. The central idea of this “new approach to the study of power” is to trace multilateral negotiation processes that take place in heterogeneous socio-technical networks during phases or moments of translation (Callon, 1986, p. 196). As Callon writes:

“These moments constitute the different phases of a general process called translation, during which the identity of actors, the possibility of interaction and the margins of manoeuvre are negotiated and delimited” (Callon, 1986, p. 203).

There are several lessons to be learned from the seemingly distant fate of the scallops for examining the case of scientific publications in the Dutch Open Access story. For that purpose, we shall turn our attention to the four distinct, if sometimes overlapping, moments of translation, as suggested by Callon. During the phases of *problematization*, *interessement*, *enrolment*, and *mobilisation*, the negotiation manoeuvres and the bargaining tactics used by the *key actor* become more visible. In the case at St. Brieuc Bay, the group of three marine biologists played a pivotal role in shaping the understanding of a particular problem, the dwindling population of scallops. Using Callon’s terminology, this (collective) actor can be described as “the *primum movens* of the story” (Callon, 1986, p. 203), a driving force that is engaging in an attempt to “domesticate” scallops (and

the fishermen), or in other words, to tame, convince, prevail over other human and non-human actors.

The activities pursued by the marine biologists became the linchpin in the unfolding development of subsequent events. They formulated a problem-solution definition in the situation under study, envisioned roles for other actors in support of their proposed action programme, and pulled the strings to create favourable conditions to facilitate its implementation. By following the (key) actors through the moments of translation, as proposed by Callon, one can learn how they managed to cope with potential obstacles and hurdles on their way. In particular, this analytical approach lends a higher level of sensitivity to contingencies and possible alternatives as dependent on (self-)assertive capabilities and the reconfiguration of relationships between the involved actors. That is, whether a particular problem-solution understanding will prevail against alternative versions is always an open question.

In terms of ANT, convincing other actors to cooperate towards a certain goal can be described as whether the key actor will become successful in establishing a problem-solution proposition and will manage to build a socio-technical network required for this purpose. While such networks may include not only human actors but also non-human actants such as scallops or technical artefacts like fishing boats and towlines, their composition is always *relational* and *heterogeneous*. Furthermore, all actors may be ascribed an agency, with no a priori distinction between the technical (or material) and the social worlds. Thus, according to Callon (1986), to establish a certain socio-technical innovation, all of these elements need to be linked together for a temporary heterogeneous network of associations to be formed.

The special emphasis on *relationality* and *heterogeneity*, as well as taking a *processual* perspective, serves as a common denominator between the notion of re-infrastructuring as the main theoretical framework and ANT as an additional conceptual lens used in this part of the empirical case study. In the following sub-chapters, these characteristics will become more tangible as the four *moments of translation* begin to unfold in the letter by state secretary Dekker and the events that followed shortly afterwards. While putting the fate of the scallops in St. Brieuç Bay and the future of academic publications in the Netherlands in a direct juxtaposition, admittedly, requires some creative imagination, it also serves as a useful analytical exercise. Drawing parallels between both storylines, thus, will help me elaborate on the complex genesis of the Dutch Open Access trajectory, while making visible the contingencies and possibility of alternative pathways. In summary, although ANT is “not so much a theory as it is an empirical and analytical methodology”, it is “a way of tracing the ‘world building activities’, making up the social and material relations that surround us in a way that unravels what we normally take for granted” (Hoholm, 2011, pp. 21–22). Borrowing its analytical sensitivities, thus, helps in grasping the interactions between various actors and in mapping out entangled interests and competing understandings of the situation under study.

7.2.2 On domesticating the Dutch Open Access “scallops”: Drawing parallels through an experimental juxtaposition

What lessons can be learned from drawing parallels between the scallop story plot and the “moments of translation” in the Dutch Open Access negotiations? In what follows, I will compare the national Open Access transition plan in the Netherlands with the fate of scallops at St. Brieuc Bay, to illustrate how a certain (eco-)system comes under strain and witnesses an attempt at a general overhaul. Building on an experimental juxtaposition with the group of three marine biologists who had returned from their voyage to Japan and tried to adopt a local cultivation technique, I will show how different actors come into play, and how their partially divergent interests need to be mediated in complex multilateral negotiations.

As with the presentation of the official front-stage version of the story at the beginning of this empirical case study, the point of departure for this conceptually guided way of looking at the Dutch Open Access odyssey is the letter signed by state secretary Dekker. While delivered in his name alone, this letter emerged from a craftwork of civil servants and research policy specialists mostly working at (or temporarily seconded to) the OCW ministry. Taken together as a group of *science policy-makers*, this collective actor can be likened to the group of marine biologists who played a central role in the case of St. Brieuc Bay. Although the Dutch science policy-makers started from a different authoritative base – given that publicly funded research institutions such as universities should obey the regulations issued by governmental bodies, at least to some extent – the authors of the letter still had to convince its addressees to subscribe to the action programme proposed therein.

By analogy, building on the provisions made in Dekker’s letter, the first episode of the Dutch Open Access transition plan is recast following a similar scheme as learned previously from St. Brieuc Bay:

The *science policy-makers* in the Netherlands become interested in problems linked to the customary practice of restricting access to scientific publications. Major *scientific publishers* have been increasing journal subscription fees sharply in recent years and so exhausting the budgets of academic libraries. It won’t be possible for Dutch *research organisations* to provide the necessary resources and supply their consumers with scholarly literature if continuing in this traditional way. *Fellow counterparts* in other like-minded countries need to be solicited to support the proposed solution and are expected to join Dekker’s initiative. For *scientific knowledge* to successfully multiply, it is not enough for Dutch researchers to produce their *publications* in Open Access *journals*, but these also have to be of *high-reputation* to be acknowledged as legitimate. Other parties, such as *publishers of academic books and other publications*, are expected to accept the new business case without any resistance. If all these conditions are met, the goal of 100% Open Access within ten years will be reached.

There are several intriguing albeit somewhat peculiar similarities when comparing the interest of marine biologists in the fate of scallops in St. Brieuc Bay to the intervention of Dutch science policy-makers in the academic publishing landscape. The first observation relates to the projection

of the desired future state and the self-positioning of a key actor as a pivotal figure on the respective roadmap. As Mike Michael (2017, p. 38) explains: “What the [key actors] do is thus interpose themselves between the current unsatisfactory state of affairs and a future where interests can be satisfactorily realized. Clearly this entails the translation of interests and production of new associations. But it also involves a process of dissociation, that is, disconnection from those pre-existing associations that would detract from the [key actors’] project (and projected network)”.

While the “fishermen have to be dissociated from their usual fishing practices” (ibid.), Dutch research organisations and particularly their libraries have to be dissociated from their usual journal subscription practices. In order to transition from a “closed” to “open” publishing mode, according to the letter, it is necessary to move from subscribing to academic journals towards paying for Open Access publishing fees or so-called APCs instead. Here, the key actor behind the letter, the collective of science policy-makers, is producing a set of new associations and positioning themselves as an intermediary in charge of initiating and coordinating an effective action. As stated in the letter: “government must provide direction so that the parties know what to expect and can make arrangements with one another” (OCW, 2014, n.p.).

In proposing the desired future course, as well as determining concrete milestones for how to get there, the policy-makers behind the letter-writing process did not limit their task to self-assigning themselves a steering function, but also defined a set of other relevant actors and (re-)distributed roles among them. Various “stakeholders” such as higher education institutions, umbrella associations, the Dutch university libraries consortium, and scientific publishers were repeatedly named in the letter as the parties that had already taken steps towards implementing Open Access in the Netherlands. But they were now being told “to enter a new phase and devise joint strategies” in order to achieve the ambitious targets set in the letter (ibid.).

In the vision described in the letter, the action programme would supposedly benefit the missions and interests of all these named actors: “the relevant organisations in the Netherlands, including the publishers, have indicated that a fast transition from subscription-based publishing to open access would be beneficial to them” (ibid.). The special role allotted to the publishing houses in the Netherlands offers another notable similarity with the scallop story, when comparing their situation with that of the fishermen in the St. Brieuc Bay controversy. From the perspective of marine biologists, the role and interests of the fishermen were described in the following manner (Callon, 1986, p. 204):

“They fish scallops to the last shellfish without worrying about the stock; they make large profits; if they do not slow down their zealous efforts, they will ruin themselves. However, these fishermen are considered to be aware of their long term economic interests and, consequently, seem to be interested in the project of restocking the Bay and approve of the studies which had been launched to achieve this plan.”

Similarly, as explained in the interviews for this empirical case study, financial aspects have been among the core motivations to change the conventional academic publishing practices towards full

Open Access. Given the fact that research organisations in the Netherlands collectively pay tens of millions annually for subscriptions to scientific journals, their public budgets have been stretched ever more over the past years (see also section 8.2.3.2 *On the specifics of negotiating with Elsevier*). At the same time, the growing dominance and high profit margins of a few big publishing companies have been a source of tensions between both parties. Somewhat ironically then, as I will subsequently elaborate in more detail, major publishing companies were positioned as inevitable *partners* for the proposed Open Access transition in the Netherlands, rather than as adversaries or political combatants. As in the case of the aforementioned fishermen, who came to recognise their long-term interests, these publishers would ultimately agree to play their part in the transition plan and sign on to dedicated contracts with novel-type Open Access components as requested in Dekker's letter.

Furthermore, drawing comparisons between respective projects' goals also brings to light the central role played by a key actor for initiating the desired change and orchestrating the necessary actions. Namely, the strategy of marine biologists was expected to help scallops reproduce more actively and so save their destiny (and that of the fishermen) from extinction. Yet what problem(s) would be solved by letting the scholarly publications of Dutch academics circulate (and multiply) more freely? While the ideas of modernising scholarly communication or accelerating scientific discoveries are also echoed in the letter, what stands out much more is its strong emphasis on the broader societal uptake of scientific knowledge and its expected use by businesses. This can be seen particularly well in some of the illustrative examples given in the letter of potential beneficiaries of Open Access: doctors, teachers, patients, small and medium enterprises, and many others would be enabled to apply scientific knowledge faster and to a greater extent.

The focus on equipping Dutch extra-academic users with toll-free access to scientific literature for greater (economic) exploitation of scientific knowledge appears as one of the guiding threads in the letter. As argued in its introductory paragraph: "open access promotes knowledge sharing and knowledge circulation, which in their turn contribute to the Netherlands' innovative capacity" (OCW, 2014, n.p.). That is, scientific knowledge encoded in scholarly publications could be exploited and utilised more efficiently, in order to extract *added value* that it could bring to the national (knowledge) economy. The answer to an intriguing question in this comparison – "Who are the scallops in the Dutch Open Access story?" – can then be distilled from abstract ideological expectations about the broader accessibility of scientific knowledge, down to concrete (economic) objectives and improved knowledge valorisation. In parallel to the goal of raising the reproduction rates of scallops in the St. Brieuc Bay, the ambitious Dutch Open Access plan is targeted at advancing the utilisation rate of scientific knowledge in the Netherlands in particular for economic gains. In other words, by improving the re-use and application of scientific knowledge stored in scientific publications, the amount of *knowledge entities* would be multiplied, thus giving a boost to knowledge-based jobs and innovation development.

Yet how would this bright new (Open Access) world be achieved? By following the key actor through moments of translation, we now shift our analytical gaze to the negotiation processes by which a particular problem and its proposed solution are defined and become established against

alternative understandings. Taking a closer look at each of these four moments of translation, as will be done in the next sub-chapter, will deepen our understanding of a range of underlying issues and basic social processes. For example, what (and who) gets included into, and, respectively, excluded from the chosen problem-solution definition? What potential alternatives in the spectrum of choices remain obscured or ignored? How are other actors assigned and locked into their roles? And ultimately, what is at stake – or, to draw parallels with the scallop story, once again, *whose livelihoods are to be sustained* by choosing a certain pathway and not the other?

7.3 The four moments of translation in the Dutch Open Access story

In the first episode of the Dutch Open Access story, we will accompany the (collective) key actor during their attempt to establish a national Open Access transition in the Netherlands. The key actor behind this endeavour, which manifested itself in Sander Dekker's letter to the Dutch parliament, has been identified as a group of science policy-makers who either directly worked on formulating the content of the letter or otherwise supported this task. To facilitate the empirical analysis in this section, I will utilise the lessons learned from the attempt at domesticating scallops in St. Briec Bay as discussed above. In particular, I will focus on a set of distinct, if partially overlapping, analytical "moments of translation" – i.e. *problematization, interessement, enrolment, and mobilisation*, as suggested by Michel Callon (1986).

Although here I ascribe the key role in envisioning a national Open Access strategy in the Netherlands to the science policy-makers behind Dekker's letter, I acknowledge that this was not a homogeneous entity. Instead, the letter-writing process can be conceived as that of a group of individuals engaging in complex negotiation manoeuvres over what should be said in this document and how. Moreover, the state secretary's objectives were reportedly supported by a number of "influential people" in the Dutch science system who were consulted in the process of writing the letter. Furthermore, the ambitious targets announced therein were exposed to further influencing attempts by various parties and were actively shaped by individual interests. Nevertheless, as a collective entity who were in charge of compiling its content and drawing up the ultimate wording of this letter, the science policy-makers' role was of key importance in the development of this new policy. Therefore, this group corresponds with that of a key actor as a central figure in arranging this policy work and bringing this letter to the consultation at the Dutch Parliament in late 2013.

7.3.1 The "problematization" or how to become indispensable

The initial moment of translation – problematization – is directed at exploring how the nature of a problem and its proposed solution in a specific situation is defined, including the assignment of roles and the establishment of resulting dependencies. The focus on this moment right at the beginning of a controversy (and its analysis) is of fundamental importance: it helps explain how the actors "define their respective identities, their mutual margins of manoeuvre and the range of choices which are open to them" (Callon, 1986, p. 201). In a way, the problematization phase is the crucial point of the whole project since determining these parameters and setting the boundary

conditions both have long-lasting effects on the overall course of events. What and who gets to be included or excluded in the problem-solution definition, along with the spectrum of possibilities that are deemed acceptable, becomes directly reflected in the corresponding action programme.

In the case study at hand, the letter from the OCW ministry, with state secretary Sander Dekker as its central figure, played a crucial role in shaping the national Open Access transition plan in the Netherlands. Although sending a formal letter from a ministry to the parliament can be viewed as a routine act of procedural bureaucracy, this letter gained remarkable prominence as it prompted many repercussions and follow-up events. Most importantly, the provisions made therein became the main turning and reference point for representatives of Dutch academic institutions in their negotiations with the biggest scientific publishing companies. As it has been described by one of the interviewees, “the state secretary for education announced his intentions, I think, in November 2013, and that’s the start of the entire thing, because that disrupted the entire way we [the universities] did business with the publishers before” [int_3:19].

The issue that was picked up by the *junior minister* Dekker in this letter wasn’t new in itself. On the contrary, how to remove access barriers to research publications beyond paywalls of scientific journals has been debated for some two decades by various actors in the academic publishing world (see chapter 1. *Introduction*). As the letter itself states, “the first steps towards open access were taken twenty years ago, when researchers began sharing their publications with one another on the Internet” (OCW, 2014, n.p.). Further, “in the past ten years, various parties in the Netherlands have been working towards creating an open access system” (ibid.). However, most scholarly publications, even if originating from publicly funded research, were still not available to readers free of charge. While “such publications are not only important to researchers and students but also to many outside higher education”, they “either do not currently have access to them or have to pay exorbitant fees” (ibid.). Therefore, summarising the issue at stake, Sander Dekker announced his plans to set up “a regulated system of open access” (ibid.).

Yet what was novel in the approach for tackling this problem as described in the letter was the wish of the state secretary *to regulate* Open Access – a matter that had hitherto been regarded an internal academic (publishing) affair. As the letter states, “the stakeholders – researchers, universities and publishers – have, for one reason or another, been unable to arrive at a single system for making access to publications arising from publicly and publicly-privately funded research free for everyone at the point of use”. Instead, “a wide variety of rules, agreements and options for open access publishing have emerged in the research community”. As a result, “the situation is confusing for authors, readers and publishers alike, and the stakeholders would like this confusion to be resolved as quickly as possible”. It was thus now considered the responsibility of the government to intervene and provide a solution for this *confusion* by setting “a clearly defined target, to be achieved in a specified period of time” (ibid.).

In this episode, several manoeuvres of the key actor behind the letter become visible. In their framing of the problem and its proposed solution, the letter-writers identified and lauded the *stakeholders* in the Dutch academic publishing landscape for their earlier efforts. At the same time, a

failure was attributed to these actors for the absence of “a clear-cut system of open access” so far (ibid.). As the letter explains: “the parties responsible are to be commended on the steps that they have taken in recent years, but the time has now come to speed up the transition process” (ibid.). Yet instead of letting those “stakeholders” solve their *own* issue, the letter expressed a necessity for science policy-makers to jump in and act on their behalf. In Callon’s vocabulary (1986, p. 204), the key actors did not limit themselves to the formulation of the problem, but also “determined a set of [other] actors and defined their identities in such a way as to establish themselves as an obligatory passage point in the network of relationships they were building”. By seizing the reins, the originators of the letter thus rendered themselves “indispensable” and simultaneously claimed a self-declared authority as spokespersons of the affected parties (cf. Callon, 1986).

Furthermore, the necessity to “expedite the transition process” (OCW, 2014, n.p.) from the conventional journal subscription model to immediate Open Access was repeatedly stressed in the letter. To justify the need for a political intervention and for the government to set the pace, a cost-saving argument was put forward to underpin the proposed action programme. As the letter claims, “if the transition period is too long, the costs will rise unnecessarily because the research community will have to pay both subscription fees and article publishing charges (APC)” (ibid.). By making “a clear decision to switch to open access”, not only would the transition period be shortened, but it would also help avoid such “unnecessary extra expense” associated with running both the old and new publishing systems in parallel (ibid.). Hence, the targets proclaimed in the letter had to be “quite ambitious”: to reach the goal of 100% Open Access within ten years and to publish all research articles in the Netherlands free of charge for readers by 2024 (ibid.).

But who were the actual *addressees* of the demands outlined in the letter to be confronted with fulfilling these goals? Here, another important feature of this political communication act emerges – the implicit encoding of its intended message. Although this letter was formally addressed to the Dutch parliament, its members were not expected to act upon it themselves – except, perhaps, for raising questions and discussing them during the parliamentary consultation session. Instead, it contained a set of requirements towards institutional actors in the Dutch scholarly publishing landscape, i.e. the “stakeholders” mentioned before. As the main producers of scientific knowledge, and, thus, of research articles, Dutch research universities were targeted in particular. At the same time, since research organisations in the Netherlands are granted relatively high academic and administrative autonomy, this makes them responsible for determining their publishing arrangements themselves. That is, the ministry does not negotiate with scientific publishers on their behalf, but rather needs to *convince* the universities to do it in a particular way. Or, in the words of one interviewee, “the ministry will never do it, because it’s a contract between the publishers and universities” [int_16:169].

The need to manoeuvre through this circumstance adds another layer of translation and complexity to the letter. In the transition scenario proposed by state secretary Dekker, Dutch research organisations and their researchers had to be convinced, firstly, to accept the new Open Access goal, and secondly, to change their practices from publishing in “closed” to “open” access mode in academic journals. Yet to effectuate the necessary steps and to achieve these goals, the

political expectations in the letter had to be translated into concrete terms and conditions with a corresponding action programme. To make this happen, the roles and interdependencies between all major actors, and not just research institutes or their managers, had to be (re-)defined and broad alliances forged. It is the next manoeuvre at the “problematization” stage by the key actor of science policy-makers that will be explored in more detail in the following sub-section.

7.3.1.1 Defining the actors, their identities, and alliances

Similarly to Callon’s study, where the formulation of the questions and corresponding answers by marine biologists would “bring three other actors directly into the story” (1986, p. 204), the definition of the problems in academic publishing and the proposed solution to tackle them in Sander Dekker’s letter entailed direct implications for a number of other actors. After sketching out the importance of Open Access publications for researchers and broader society, as well as the reasons for his “wish to regulate open access”, the state secretary provided his perspective on the current, subscription-based publishing system and a vision for switching to a new, fully Open Access one (OCW, 2014, n.p.).

As stated in the letter, the “key parties in the field of research publishing are the *researchers*, the *publishers* and the *readers*” (ibid., emphasis added). Although the descriptions of these actors were quite cursory, each of them was presented as fulfilling a particular and neatly defined role. In “the current, traditional, system”, as the letter goes, “researchers send their papers to appropriate journals for publication. They prefer to submit their work to prestigious, highly-ranked journals. The publisher has each submission reviewed by the relevant researcher’s peers” (ibid.). The readers, in turn, were seen as basically having two choices for accessing research articles under this current journal subscription regime (ibid.). They either are “researchers who work in higher education [and] have access to their university library’s subscriptions” (ibid.). Or, alternatively, they need to pay “by taking out a subscription to a journal, purchasing a single issue or paying a ‘pay-per-view’ fee for a single article” (ibid.).⁷⁷

Here, various Dutch *research organisations*, as institutional actors that are home to most of the researchers in the Netherlands, were specifically addressed in the letter. The steps that they have already taken towards making “the results of research more openly available” were showcased as follows: “all the universities, NWO [the Dutch Research Council] and the Academy [the Royal Netherlands Academy of Arts and Sciences]” have “endorsed the principle of open access to research results” either by signing respective declarations or issuing institutional policies requiring researchers to deposit their publications in their own repositories (OCW, 2014, n.p.). Beyond that, “VSNU, NWO, SURF (the higher education and research partnership for ICT), DANS (Data Archiving & Networked Services), individual universities and the university libraries are active in various Dutch and international bodies to promote and improve open access, with their efforts ranging from improving the repository infrastructure and setting up pilot projects for open access

⁷⁷ From the perspective of ANT, one could identify further (non-human) actors or actants that were mentioned in the letter. These include, for instance, scientific journals, individual articles, subscription fees, etc. However, I will limit my analysis to the main actors as described above.

journals to experimenting with the licences issued by traditional publishers” (ibid.). Adding to this broad range of activities, a number of umbrella organisations were further named in the letter – such as NFU (the Netherlands Federation of University Medical Centres or *Nederlandse Federatie van Universitair Medische Centra*, in Dutch), the Netherlands Association of Universities of Applied Sciences, and the library consortium UKB, as organisations that already supported the implementation of Open Access in practice by various means (ibid.).

Despite the huge variety of activities already in place, Dutch research organisations were told to intensify their cooperation and coordination in order to achieve the national Open Access goals. In particular, Dutch universities along with the KNAW institutes and NWO were asked “to prioritise the golden road to open access in their institutional policies” and to “make allowance for the changing tasks of their libraries” (OCW, 2014, n.p.). That is, the roles and responsibilities of all main actors, as organised in the current academic publishing network, had to be redistributed according to the changes in responsibilities and financial flows as projected for the new Open Access publishing system. With Sander Dekker’s preference for the Golden road to Open Access, as conceptualised in the letter, the readers (or their libraries) would no longer have to pay a subscription or a “pay-per-view” fee as in the “traditional” system described above (ibid.). Instead, the switch from the old subscription system to a novel Open Access publishing world, as envisioned in the letter, mainly consisted of the proposition that “the payment obligation thus shifts from the reader to the author” (ibid.).

Furthermore, to help convince all affected actors to cooperate and to rearrange their (publishing) relations and core tasks according to this new logic, the state secretary announced possible sanctions that might be put in place. As they were informed in the list of measures by Sander Dekker: “If the relevant parties do not do enough, or progress is unacceptably slow, the Minister and I will recommend making open access publication mandatory in 2016 under the Higher Education and Research Act (*Wet op het hoger onderwijs en wetenschappelijk onderzoek, WHW*)” (ibid.). Taken together, these “relevant parties” in the Dutch research sector were told to brace themselves for this demanding task in the upcoming years and to pool their strengths as they would “have to persevere to achieve the targets” (ibid.).

Moreover, beyond the Dutch research organisations named in the letter, there were several other actors directly addressed or implicated in the goals and measures announced in the letter (for a visual representation of the various actors that were involved in Open Access negotiations in the Netherlands, see also the social worlds/arenas map in sub-chapter 10.4). While the major parties at the national level were already being urged to intensify their collaboration, the international dimension was seen as equally important. As described in the ambitious vision of the state secretary, “a true switch will only be possible if we cooperate and coordinate with other countries” (OCW, 2014, n.p.). Therefore, science policy-makers elsewhere and particularly *fellow counterparts* in other “like-minded countries” were expected to join the Dutch initiative. Among them, the United Kingdom and Germany were prioritised “because they, like the Netherlands, have a number of major commercial and scientific publishers located within their borders” (ibid.). Other mostly western European nation-states such as Denmark, Finland, Belgium, and France

were also named in the letter, as “a number of prominent and like-minded countries” to be consulted by Sander Dekker (ibid.). “To encourage a faster transition to open access”, politicians in these countries would thus also be mobilised to adopt similar Dutch-style arrangements in their own jurisdictions (ibid.).

Such an outspoken focus on other countries with strong publishing industries brings to the fore another important actor: major *scientific publishers* themselves. In Dekker’s vision, these huge commercial companies were positioned as obvious partners for accomplishing the transition from subscriptions to Open Access in scientific journals. Seen as the ones who arrange and guarantee “a strict and reliable system of peer review”, the publishers – and not, for instance, the senior academics in their roles as peer reviewers or editors of those journals – were granted the authority to actively co-shape the desired transition (ibid.). What is more, Dutch national interests and those of the local publishing industry were articulated to be closely aligned. As for the reasons “the Netherlands can play a pioneering role” in this matter, state secretary Dekker offered the following rationale:

“The Netherlands finds itself in an exceptional position because it is home to a number of major scientific publishing houses, making consultations between the Dutch research community and publishers possible” (OCW, 2014, n.p.).

That is, major commercial publishing companies with their (head) offices in the Netherlands were to be consulted in formulating the Dutch national Open Access transition plan, similarly to other domestic parties. There was, however, no further differentiation to be found in the letter between the interests of those big multinational publishing conglomerates, such as Elsevier, and academic publishing initiatives or small publishing houses serving niche research fields. Instead, when speaking of the publishers, only “major scientific publishers” were commonly addressed – and these were said to be undoubtedly “interested in a good business case” (OCW, 2014, n.p.). Indeed, Dekker stated: “There is no reason why that could not be a new business case based on open access publishing” (ibid.).

Furthermore, the role of the readers was re-imagined in the letter along with the list of expected benefits under the envisioned new Open Access system. In this category, particular extra-academic *societal groups* were singled out as potential readers and users of research results beyond the walled gardens of academia. The list of illustrative examples and expected use cases appeared to be focused on professionals in various occupations, who, in turn, were assumed to be interested in gaining free access to publications in scientific journals:

“Such publications are not only important to researchers and students but also to many outside higher education who either do not currently have access to them or have to pay exorbitant fees to gain access. Open access allows the health care sector – for example physicians, therapists, patients and patient associations – to familiarise themselves with the latest treatment methods. Research results that are freely accessible can help businesses, including small and medium-sized enterprises, develop and apply innovations. Public authorities and consultants can apply new theories in their policymaking and advisory work, and teachers can use articles describing new

scientific findings in their lessons. In short, the relevance and advantages of open access for society are enormous” (OCW, 2014, n.p.).

As can be seen from the quote above, the typical beneficiaries of free access to scholarly journal articles among extra-academic audiences were expected to be in particular subsets of societal activities related to the practical application of scientific knowledge. However, while enabling this huge potential audience to access, and subsequently to apply, research findings was portrayed as one of the main objectives of the whole Open Access project in the letter, the needs of and the roles (to be) played by these actors were not addressed further. Compared with a detailed description of the current and future roles and responsibilities of researchers and publishers, as perceived in the letter, this last “key party” was not listed among those to be consulted or otherwise involved in actively co-shaping the Dutch Open Access transition. Instead, as representatives of the government in charge of spending tax-payers’ money, science policy-makers behind the letter have positioned themselves as a legitimate voice for the myriad of societal groups named above.

This stark contrast between putting major scientific publishing companies on equal footing with, say, Dutch research organisations, when envisioning the Open Access transition pathway in the letter, and granting no active voice in this process to, for instance, various societal organisations, is analytically revealing. Viewed through the lens of the “sociology of translation”, this, at first glance, inconspicuous manoeuvre can be clearly recognised. As described by Callon (1986, p. 224): “the repertoire of translation ... also permits an explanation of how a few [entities] obtain the right to express and to represent the many silent actors of the social and natural worlds they have mobilized”. That is, the society at large, while portrayed in Dekker’s letter as the actual main beneficiary of the intentions to overhaul the academic publishing system from subscriptions to Open Access, largely remained a “silent actor” that is talked *about*, but not *with*.

Hence, for arranging the transition process from journal subscriptions to Open Access in academic publishing, the science policy-makers behind the letter first had to define the problem and its proposed solution in a particular way. While describing the current system, the emphasis was largely put on its deficiencies: the need (allegedly) to go to a physical or “traditional” library, the burdensome practice of subscribing to individual journals or their packages, and the rising prices of these subscriptions over past years. Yet for the new publishing system, the main narratives were dominated by huge promises and expectations: a more intensive flow of knowledge from science to society, better innovations, and faster applications. In this framing, there was apparently no room for deviant considerations: Are there any advantages of the journal subscriptions? Could the APC-based Open Access publishing model do any harm?

Instead, the projections of the bright new Open Access world were flavoured with a pinch of technological utopianism. Because a decades-old “technological revolution [had] laid the groundwork for open access to publications and books”, with no obstacles, apparently, in its way, the letter made a passionate plea for a “switch” to a new, fundamentally different academic publishing system in the coming years (OCW, 2014, n.p.). However, although it claimed that “the new system differs considerably from the current one” (ibid.), the main actors under this “new”

scenario remained essentially the same. While in the current practice, the *modus operandi* largely consisted of bundling journal subscriptions into packages of Big Deals between major publishers and research institutions. The way to go for transitioning to the new “open” mode would be tread on marrying those very same *big deals* into ever bigger bundles of combined subscriptions and institutional publishing quotas. Even the paywalls, although routinely lamented as a major drawback of the current system, would not entirely disappear, but rather be erected at a different point in the publishing process along with the shift from a *pay-to-read* to a *pay-to-say* regime.

Thus, in introducing a new requirement to switch to a fully Open Access publishing mode in ten years, the key actors in Sander Dekker’s letter attempted to reassemble the current actor-network in academic publishing in new ways. Through the act of defining the main actors in this network, as well as their identities and alliances in the current and future academic publishing system, the workflows and priorities would be rearranged according to the new logic, and an ostensibly new network of relationships built. However, as can be seen from taking a closer look at the proposed transition scenario, the anchors of stability and main decision-making proxies appeared to largely remain the same. In the following section, I will examine the next manoeuvre that becomes visible during the problematisation stage: how the familiar features known from the old subscription system were to be utilised in order to pave the way for the key actor’s binding action programme.

7.3.1.2 Linking big ambitions with Big Deals as “obligatory passage points”

One of the useful lessons from the scallop story in St. Brieuç is learning to see how the key actors manage to prescribe a detailed action programme and convince other actors in that network to follow it. “A single question – [how] does *Pecten maximus* anchor?”, as Callon (1986, p. 205) writes, “is enough to involve a whole series of actors by establishing their identities and the links between them”. By analogy, the question that is posed (and answered) by science policy-makers in Sander Dekker’s letter, can be summed up as “*How can full Open Access be achieved in ten years?*”. Rather than being a simple reduction of the investigated matter in the present empirical case (cf. Callon, 1986), this single question is enough to induce a large-scale transformation of the academic publishing system and the (re-)distribution of roles and responsibilities in this actor-network.

When approaching the present empirical case under study from this conceptual lens, the next step in achieving the key actor’s goals entails another manoeuvre at the problematisation stage: establishing several “obligatory passage points” (OPP) (Callon, 1986). According to Callon, the process of establishing an OPP during this translation moment can be described as one that “possesses certain dynamic properties: it indicates the movements and detours that must be accepted as well as the alliances that must be forged. The [identified actors] are fettered: they cannot attain what they want by themselves” (1986, p. 206). That is, either the actors named will accept the proposed pathway to achieving Open Access as requested in the letter, or they will need to engage in finding an alternative route and a different answer to the posed question themselves.

In other words, establishing an OPP can be described as fixing pre-defined cornerstones and setting the course for the desired outcome of the translation effort. There are numerous references

to the deliberate contemplation of this kind of signposting found in empirical materials in this case study. As explained by one of the interviewees, it was necessary to attach clear directions on how to fulfil the high ambitions set in Dekker's letter. For this reason, particularly the concluding section of the letter entailed a list of measures and propositions for how the relevant parties should proceed in achieving the imagined "switch to the golden road" (OCW, 2014, n.p.). The formulation of the goals in the letter also made clear that its primary focus lies on one type of publication: scientific journal articles.⁷⁸

As can be read in the same announcement, the state secretary expressed a strong preference for the so-called Golden road to Open Access. However, the particular understanding of this publishing model, as conveyed by the letter, requires some additional attention. In explaining the "two different ways to provide open access to publications", i.e. the Green and the Golden roads, the readers were informed:

"The 'golden road' to open access is when the author pays the publisher to publish his or her paper (the article publishing charge or APC) and the publisher makes the entire journal available online free of charge" (OCW, 2014, n.p.).

Without going into a renewed discussion over the definition of Open Access publishing models and their corresponding colour labels (see sub-chapter 5.2 *Defining Open Access and its many (sub-)species*), it is important to note at this point that the formulation used in this letter is only partially correct. While the main pre-requisite for "Gold" Open Access journals is to publish their entire content with no subscription fees or other barriers to their readers, it does not imply any particular financing model. Instead of requesting that the authors pay an APC, as claimed above, the publisher of a journal may choose a different approach to cover its costs, ranging from various subsidies and membership schemes, to voluntary contributions of journal editors and/or their publishing collectives, to direct funding from research councils or affiliated institutions. That is, the Golden road to Open Access is better understood as an overarching umbrella term for a variety of publishing and business models, including a number of non-APC variations (see also sub-chapter 5.3 *The Open Access Multiple*).

At the same time, the determined stance of the state secretary to make "a clear decision to travel the golden road to open access" (OCW, 2014, n.p.) was substantiated by referring to earlier developments in other countries. Here, particularly the deliberations in the UK for "the shift to publication in open access and hybrid journals" (Finch Group, 2012, p. 7) served as a major reference point for defining the nature of the problem and its proposed solution in the letter. In line with the Finch Group's recommendations, Sander Dekker further explained his standpoint on the

78 While books were also mentioned as "the customary method of publishing new research results and findings" in some disciplines, and especially in the social sciences and humanities, these research fields didn't receive any special treatment in the letter. Although it was implicitly acknowledged that the challenges in Open Access book publishing might differ considerably from those of scientific journals, the "stakeholders, including the book publishers" were simply encouraged to build on their recent experiences and to "continue working together to achieve the open access targets" announced above (OCW, 2014, n.p.).

so-called “hybrid” publishing model:

“Until the publishers have switched to the golden road to open access, I prefer a system of hybrid journals in which institutions pay to have papers published open access in subscription-based journals” (OCW, 2014, n.p.).

There were two main lines of reasoning laid out in the letter to substantiate the choice for implementing the Dutch Open Access transition via the Golden road. These can be summarised as follows:

- 1) accepting to pay APCs instead of subscriptions as a new business model for Open Access publishing, and
- 2) accepting the widespread practice of using journal-level metrics in research assessment procedures, academic careers, and derivate rankings.

When taken together, these two preconditions essentially opened the door to one publishing and business model only: ransoming individual articles in well-established conventional journals via the hybrid route. As explained in the letter, researchers “prefer to submit their work to prestigious, highly-ranked journals. ... It is important to researchers to publish in a journal with a strict and reliable system of peer review” (OCW, 2014, n.p.). However, the latter task was described as being arranged (solely) by the publishers, which then “distribute the relevant journals and books” (ibid.). Putting a special emphasis on the “relevance” of scholarly literature, along with the supposedly impeccable peer review system, reveals another implicit argument in Dekker’s letter. Namely, that only “traditional” publishers in charge of these esteemed journals are capable of ensuring the proper peer review processes, and thus high quality standards, that are so crucial for separating the wheat from the chaff in academic publishing.

It appears then as a congruent next step that major scientific publishing companies were prioritised in the national Open Access strategy (VSNU, 2016b). Subsequently, Dutch research organisations were requested to integrate Open Access publishing components into the next round of negotiations on Big Deals with these publishers (OCW, 2014). In the end, with this approach it could be expected that the journal titles included in these subscription bundles would fulfil both specifications of the letter, i.e. offering an Open Access option for the payment of an APC and promising high prestige and positions in journal rankings. Not surprisingly, this chain of reasoning was also reflected by a representative from Elsevier commenting on the agreement reached with VSNU in late 2015 as securing continuing access to the world’s most esteemed research publication outlets – and to be complemented with Open Access publishing options in those very same journals (VSNU, 2015c).

However, although the Finch group’s report was repeatedly named as a reference point in Dekker’s letter, there was one major point in which the way forward for the Netherlands was explicitly distinguished from the pathway chosen therein. Namely, whether and how the research institutions (or their funders) should cover the additional publishing costs, associated with the increasing amount of APCs, to be paid during the envisioned Open Access transition. Drawing on

the “lessons learned abroad”, as the letter continues, and particularly the experiences of the British government, it was shown that earmarking extra “investment” for Open Access publishing “has not accelerated the switch to open access but instead prolonged the transitional phase” (OCW, 2014, n.p.). Instead, “collaboration based on a clearly defined target, to be achieved in a specified period of time” – and accompanied by immediate steps to be undertaken – was believed to “serve as a more effective incentive” for attaining these goals (ibid.). That is, in plain terms, Dutch academic institutions were expected to implement the Open Access transition within the regular budget that was usually spent on journal subscriptions, with no additional funding. Summarising the list of conditions prescribed in the letter, one of the interviewed negotiation team members thus concluded: “we do know that it's about articles, about a new technical standard, and we have no extra money to spend on any new type or standards, we have what we have” [int_10:95].

Finally, as one of the main measures for taking immediate action and “creating the conditions to make open access possible” (OCW, 2014, n.p.), another important “obligatory passage point” (Callon, 1986) was defined. As prospective negotiators at Dutch research organisations, their libraries, and the publishers themselves were informed in the letter (OCW, 2014, n.p.):

“One significant opportunity in the transition to open access will come when the research organisations and the major scientific publishers renegotiate the former’s subscriptions to journals. These ‘big deals’ are always concluded for a period of several years; the next deals will be renegotiated in 2014. It is at that point that the publishers will need to step up and make a crucial contribution to the transition”.

Here, the practice of bundling a large number of journal titles into one subscription package or Big Deal, as was common in agreements between the biggest publishing houses and academic library consortia, got into science policy-makers’ sights (for a more detailed discussion, see also chapter 10. in this thesis). “The agreements in 2014”, to be negotiated just some months after sending the letter, were given concrete instructions to follow: either they “should be based on the premise that publishers will make all their journals open access or that [the publishers] are prepared to negotiate arrangements to offset article publishing charges with licensing fees in order to avoid double payment” (ibid.). Based on the state secretary’s (provisional) preference for the “hybrid” model, as stated before, adjusting these Big Deals to suit the proposed transition programme became a firm trajectory to follow.

Moreover, the argument developed in the letter was constantly repeated: *if* the research organisations want to disseminate their publications more broadly, *if* major scientific publishers want to preserve their role and interests in the future, and *if* various societal groups and businesses in the Netherlands want to benefit from free access to the latest research, *then they must*: 1) know the answer to the question: “how can Open Access be achieved?”, and 2) recognize that their alliance around this question can benefit each of them (cf. Callon, 1986, pp. 205–206). In other words, portraying the adjustment of Big Deals as an obvious solution and a necessary next step was intended to convince all actors involved to admit that this scenario lies in their own interest.

As visualised in *Figure 4*, positioning the Big Deals enhanced with Open Access publishing

components as the way to go in Sander Dekker's letter were established as an OPP for the Dutch Open Access transition. As a juncture point between the "old" and the "new" publishing worlds, these contractual agreements were supposed to help gradually switch towards an APC-based Open Access publishing model. As Callon (1986, p. 206) explains, such a problematisation manoeuvre undertaken by the key actor – here, the science policy-makers – entails "a system of alliances, or associations, between entities, thereby defining the identity and what they 'want'". In the problem-solution definition formulated in the letter, each of these entities or other actors faced an instant obstacle blocking the road to the envisioned future. The free circulation and multiplication of knowledge entities was said to be hindered by restricted access to scientific publications. Major scientific publishers, confronted with pressures regarding the current journal subscription model, were in need of a long-term business model. Fellow policy-makers in other countries, in turn, would join the Dutch pioneering endeavour to finally make a breakthrough in the hitherto disjointed efforts to achieve full and immediate Open Access. The Dutch research organisations would escape the quandary of rising subscription costs and limited purchasing budgets as well, so long as all parties embarked on the proposed solution and so could apparently satisfy their own needs.

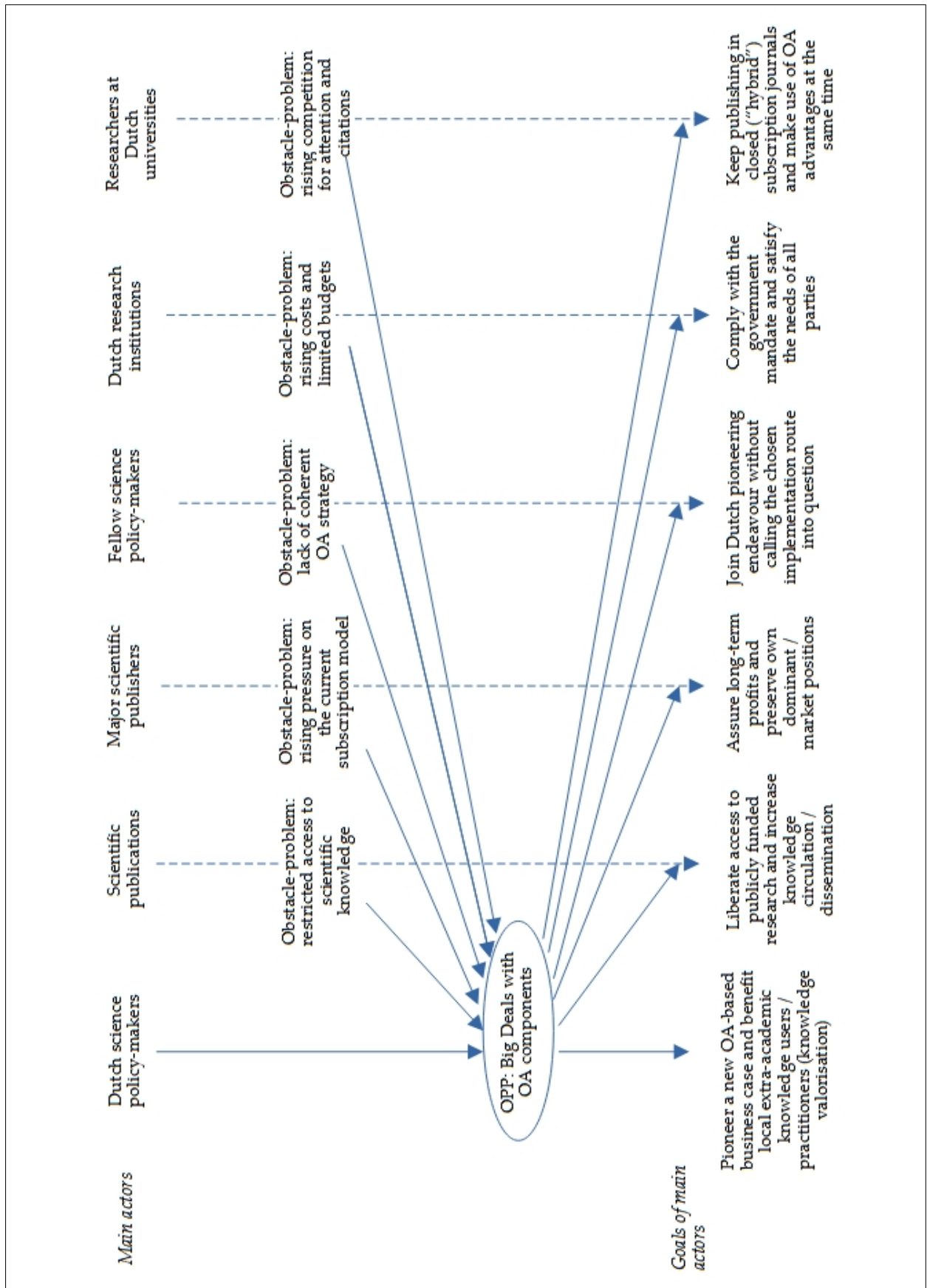


Figure 4: Constructing an Obligatory Passage Point (OPP) through alliances and detours in the Dutch Open Access transition (building on Callon, 1986)

The message conveyed in the letter is unmistakable: through the signing of Big Deals enhanced with Open Access publishing components, “a Holy Alliance” (Callon, *ibid.*) between Dutch research organisations and major scientific publishers can be formed and the ambitious targets set by Dekker will be reached. In this way, linking big ambitions with Big Deals in the upcoming negotiation cycle became a clear answer for what needed to be done by each actor individually and collectively at the Dutch national level.

7.3.2 The devices of “interessement”, or how the allies are locked into place

The second moment of translation in this framework, the “interessement”, looks at how the actors are “locked” into their predetermined roles according to the propositions made in the previous stage. As Callon (1986, p. 207) explains: “each entity enlisted by the problematization can submit to being integrated into the initial plan, or inversely, refuse the transaction by defining its identity, its goals, projects, orientations, motivations, or interests in another manner”. That is, the relationships envisaged during the problematisation moment still need to be tested and undergo “a series of trials of strength” – only then will the solidity of the key actor’s definition of a problem and the distribution of corresponding roles for resolving that problem be determined (*ibid.*).

The case of VSNU, which serves as an umbrella organisation for the 14 publicly funded research universities in the Netherlands, is particularly illuminating in this respect. In its first response to the Dekker’s letter, issued just two weeks after the letter on 29 November 2013, VSNU generally applauded the explicit support and attention received from the Dutch government on this topic. Universities were said to be strong advocates of Open Access who embraced this movement and who had done everything conceivable to support the transition to free access to research publications over more than a decade. Yet, at the same time, they called attention to a number of issues in the chosen route to reach the declared goal (VSNU, 2013). More specifically, representatives of VSNU pointed at the problematic nature of the APC model and the “hefty extra costs” that Dutch universities would have to face. Because during the transition phase they would have to pay for both: APCs for publishing researchers’ own articles in Open Access as well as licenses for journal subscriptions to access scientific production from other countries (*ibid.*).⁷⁹

The problems associated with the chosen route were said to further exacerbate the issue in conjunction with the different pace that other countries might choose for their shift to Open Access. As exemplified by the experience in the UK and referring to the critique of the Finch group’s recommendations by the Business, Innovation and Skills Committee of the House of Commons in the British Parliament, in its response, VSNU warned of the significant financial disadvantages that would be experienced by the “first-mover” countries. For this reason, it urged

79 The original wording, in Dutch: “U maakt in uw brief een duidelijke keuze voor de gouden route en verwijst daarbij naar het in Engeland verschenen rapport van Dame Finch. Nederlandse universiteiten zijn het er mee eens dat de gouden route uiteindelijk de meest toekomstvaste is. Maar ook een die niet zonder problemen is en zeker tot forse extra kosten zal leiden. Kosten die vooral door universiteiten zullen moeten worden gedragen. In de transitiefase zullen universiteiten immers (via APCs) behalve voor de artikelen van de eigen wetenschappelijke staf ook voor de wetenschappelijke productie van andere landen moeten betalen via licenties” (VSNU, 2013, n.p.).

the state secretary to consider the Green Open Access route as a “serious alternative” on the way to the new publishing world (VSNU, 2013, n.p.). Additionally, the prerequisite that academic publishers be willing to convert “even the most renowned high-impact journals” was underscored, along with the need to offset the payments for APCs against journal licensing costs (ibid.).

Some months later, in July 2014, VSNU issued its own letter addressed “to all member[s] of the Dutch academic community” (VSNU, 2014a). In this letter, the university association discussed the latest developments in the “Open Access debate [that] recently received a strong impetus as a result of a letter to the Parliament written by State Secretary Sander Dekker” (ibid.). The position of the state secretary that publicly funded research should be freely available, as VSNU explained, is “based on the conviction that Open Access is beneficial to science but also to society at large and the economy” (ibid.). Yet the standpoint of VSNU on the implementation route chosen by Dekker was rather ambivalent. On the one hand, it underscored the importance of the Green Open Access route to archive author manuscripts in institutional repositories. Since these are already available at all Dutch universities, VSNU called on researchers working in the Netherlands “to (continue to) use this possibility” (VSNU, 2014a). With regard to the other “main route” to Open Access, VSNU stated: “The golden route is more complex. However, many believe that in the end it is a more sustainable route to Open Access” (ibid.). Although Dutch universities seemed to distance themselves from this particular model, they signalled their support for the official political objective, calling it “a well-considered choice for the golden route” made by state secretary Dekker (ibid.).

Interestingly enough, VSNU’s rhetoric changed quite dramatically after it became the organisation in charge of implementing the government’s plan. In its first electronic magazine dedicated to this topic, titled “The Netherlands: paving the way for open access” (March 2016), VSNU shared its views on the pathway it had embarked on to achieve the targets set in the letter. In this brochure, the Green route was regarded as “a good addition to the options that are currently already available, and a good intermediate step, but not the sustainable solution that is needed” (p. 7). Instead, a series of recent Big Deals with large commercial publishers, which had been concluded since late 2014 and extended with various Open Access publishing components, were praised as “a lever” for implementing the Dutch national strategy (ibid, p. 6). By expanding journal subscription packages into such combined bundles, VSNU’s aim was to cover the majority of Dutch scientific articles published by the eight largest publishing houses. Furthermore, with a view towards “promising talks [that] are currently underway with a number of other publishers”, an “interim conclusion” was given: “the Netherlands is definitely on track” to achieve its Open Access goals (ibid.).

The “interessement devices” employed at this moment, enlisted to persuade the different actor groups to stick to their assigned roles and action programmes, can build on a range of possible strategies and mechanisms (Callon, 1986). “It may be pure and simple force”, if the links and associations between identified actors used to be firmly established and need to be radically re-arranged – or, “it may be seduction or a simple solicitation”, if the key actor’s problematisation already closely corresponds to other actors’ present roles and interrelations (ibid., p. 209). The role

of VSNU, once again, illustrates this intricate task well. The 14 research universities represented by this umbrella organisation are granted academic and administrative autonomy and are free to decide how to arrange concrete terms and conditions with academic publishers themselves. At the same time, as the main producers of scientific publications in the Netherlands, they are confronted with fulfilling the goals set in the state secretary's letter, leaving them with limited leeway to diverge from the official position and having to comply with the priorities set out by the ministry.

When asked about the decision for the university association VSNU to take over the leading role in negotiations with publishers, one of the interviewees and negotiation team members commented: "because the state secretary made his announcements this way, the VSNU thought 'oh, when we have to comply with what he is saying, then we should have some control over what we are doing as well'" [int_4:57]. In this way, the identities of the actors, as imposed in the letter, were stabilised, and attempts at alternative definitions inhibited. In addition, as Callon (1986, p. 210; emphasis added) explains, the key actor does not intend "to convince the first group as a whole. It is rather the *representatives* of professional organizations who are the targets of the [key actor's] solicitation." As in the present case, there was no wide consultation of Dutch researchers on the ministry side, following Sander Dekker's letter. Instead, as a professional association gathering the heads of all 14 research universities in the Netherlands – not including universities of applied sciences or other research institutes – VSNU became the sole representative of the whole Dutch research sector.

Moreover, the solicitation of scientific publishers as another major actor implicated in the letter offers some additional insights. Following Sander Dekker's promise to deliver his letter on Open Access for the next general parliamentary consultation (AO, in Dutch) on science policy, scheduled for late 2013, it had become a "deadline for the ministry to ensure that everything they have promised in the letters and the policies are there" [int_16:276]. Remembering that day of the AO on 4 December 2013, one of the interviewees and participants at this meeting recalled noticing the presence of four high-level employees from the Dutch-based scientific publishing companies sitting in the front row of the public tribune. Although the AO meetings are generally open to the public, one would usually expect "people from the ministry, the civil servants and [other] people from the political parties" working on related topics to be present during the AO, yet not "this kind of expensive people" from the publishing industry [int_16:284-288]. As explained by our interviewee, "I thought it was quite a signal, that they understood, that the letter and the ambitions set really mean something for their organisation, their companies" [int_16:299].

The current and future roles of major scientific publishers, indeed, were extensively addressed in the transition to Open Access envisioned in Sander Dekker's letter. As one of main actors in the academic publishing landscape, the publishers were urged "to intensify their cooperation [with other stakeholders] to the level necessary for this purpose" (OCW, 2014, n.p.). Moreover, the particular problem-solution definition explicated in the letter seemed to directly affect or even threaten the present business models and the dominant position of these "traditional" subscription publishers: "they understood that they need to be there, and the four of them sitting there prominently, sitting through all these talks about for them not really interesting science policy issues ... I mean, they understood that they need to team up – I found it impressive if not

intimidating that they were sitting there together” [int_16:295-308]. Most of the other participants at the AO, according to this interviewee, didn’t recognise the significant roles of these four individuals, “but for me it was quite a signal, I thought, at least they think it’s really a serious letter, and for them it really means a lot, otherwise they [would] not be there with their salaries [laughing]” [int_16:312].

Such a “massive” presence of the representatives of this actor group, “just to ensure, you know, to know what was going on, because it affected their work” [int_16:292], can be interpreted as a “trial of strength” for the problematisation that was presented in the letter. As explained by Callon (1986, pp. 209–210), “the intersement [phase], if successful, confirms (more or less completely) the validity of the problematization and the alliance it implies”. That is, the collective appearance of the publishers during that AO, and potentially their willingness to join forces and attempt to resist the problem-solution definition as announced in the letter, succinctly illustrate the processes of translation and particularly the general “intersement” mechanisms. To link it back to the theoretical framework used in this part of the case study, “the definition of groups, their identities and their wishes are all constantly negotiated during the process of translations. Therefore, these are not pre-given data, but take the form of an hypothesis (a problematisation) that is introduced by certain actors and is subsequently weakened, confirmed or transformed.” (Callon, 1986, p. 228).

7.3.3 How to define and coordinate the roles: “enrolment”

After the use of the “intersement devices” to lock the actors in their roles and to forge the necessary alliances between them, the *enrolment* phase begins. Here, the actual engagement of the actors must follow. That is, the still-vague idea of linking Big Deals with big Open Access ambitions needs to be translated into more specific statements and commitments. Similarly to the case examined by Michel Callon, where the larvae of the scallops *still* had to anchor themselves to the towlines in order for the hypotheses and the interpretations of the marine biologists to work out, a *modus vivendi* for actively publishing scientific articles under Open Access mode in the Netherlands *still* had to be progressively arranged.

Following Callon (1986, p. 211, emphasis added), “to describe enrolment is thus to describe the group of multilateral negotiations, trials of strength and tricks *that accompany the intersements and enable them to succeed.*” Here, the steps undertaken by VSNU to create favourable conditions for the negotiations with scientific publishers are especially telling. As described before (see sub-chapter 6.2 *Pulling the strings*), VSNU has distinguished four main “success factors” of “the Dutch approach” that helped this relatively small-size country negotiate with big publishers and become “one of the fastest growing open access countries in the world” (VSNU, 2016b, p. 4). To illustrate the enrolment manoeuvres used to set the negotiation stage, I will analyse one of the aforementioned factors in more detail.

As the readers of the VSNU brochure could learn about “the secret of ‘the Dutch approach’”, the importance of establishing “a powerful delegation” was described in the following way:

“Contrary to normal practice, the VSNU and UKB (a consortium of thirteen Dutch

university libraries and the National Library of the Netherlands) took negotiations to the highest administrative level. Whereas normally, the boards of the libraries are expected to meet with the publishers, this is now done by a number of Executive Board Presidents of universities, who negotiate through the VSNU, with the mandate of all universities and university libraries, and with the support of SURF. This means that there is attention for the subject at the highest administrative level from the outset. This strong foundation has made it possible to negotiate at a different strategic level.” (VSNU, 2016b, p. 13)

At the core of this strategic move lies the decision to *upgrade* the authority level of the negotiation teams and to conduct the negotiations on Open Access publishing agreements at “the highest administrative level” (ibid.). That is, the negotiation team members on the side of universities would consist not only of the delegates from the consortium of academic libraries – as had been usual for negotiating Big Deals in the past – but also heads of universities themselves. Even more importantly, the Executive Board Presidents delegated by VSNU were charged with leading the negotiations between universities and scientific publishers. While the representatives of academic libraries, who had previously been in charge of this task, were still among the members of the negotiation teams, this move effectively meant taking this core responsibility away from them.

When asked to reflect about the decision to shift the lead to university boards, members of the negotiation team gave several reasons. First, there appears to have been a sense that the goals and measures prescribed in the letter would exceed the competencies of academic libraries. As one interviewee responded: “it’s too difficult for librarians in making those choices at this level because they are servants within the university, they are not the leaders [laughing]” [int_2:71]. Furthermore, the financial constraints set in the letter, but also the growing expenses in earlier agreements seemed to have played a role: “there must have been an idea with our [university management] boards that we maybe in the past were a little bit too weak in our negotiations and that we didn’t, that we were not able to get a fixed grip on the development of [an] increase of the money” [int_4:63]. Another interviewee with extensive experience in previous negotiations was also sceptical towards their capability in addressing the difficult task: “we struck some very good deals in the past ourselves, but this was ... above our heads” [int_3:128]. Even more so, realising the limits of their own bargaining power seemed to be self-evident among all concerned libraries: “mainly because UKB said ‘okay, if this is at stake, then we probably not do it just for ourselves, because that would be impossible, we cannot enforce this, we don’t have enough negotiation power, we don’t have enough importance to bring that about ourselves” [int_3:114-115].

Considering some of the achievements over the past years, the decision to involve “somebody in the highest [part of the] hierarchy of the universities in the Netherlands” was considered as being of “key importance” [int_3:119]. However, the suggestion to include university executives in re-arranging the composition of negotiation teams and the re-distribution of roles within them was also perceived as an interference into the libraries’ agenda by some. At the same time, putting such high-level managers at the negotiation table entailed some further nuances. As explained by one of the librarians on the negotiation team:

“I remember that some of my colleagues, they thought that this was interfering, and that we were not seen as, that we did not do our work well enough, etc., etc. I never saw it that way, I thought it was very important that we show to publishers that we were really serious in our attempts to get Open Access running, and that was why we asked our bosses more or less to step in and to give more weight to the whole process” [int_4:59-61].

In this quote, another important aspect of this manoeuvre becomes visible. Namely, the symbolic function and the signalling effect of this high-level involvement directed at the publishers. Recalling interactions with university executives, one of the interviewed negotiation team members noticed: “they sometimes said it themselves in the discussions ‘the fact that I am sitting here signifies the importance that Dutch universities and essentially the government give to these discussions’ – so the publishers knew this is not business as usual” [int_3:123-125]. Moreover, given the powerful position of the biggest scientific publishers, and the notorious difficulties in the history of their relationships with academic libraries, the decision to upgrade the authority level was particularly appreciated by interviewed negotiators. Looking at some previous achievements, the same interviewee remembered: “I am pretty convinced that we would not have been able [to do it on our own], especially with Elsevier” [int_3:117].

Finally, having the involvement of “the highest authority within the universities” by somebody with a research background themselves was also seen as important for helping win support for this national strategy from the actual researchers – “because that’s the people we are doing this for, for researchers” [int_3:321]. Yet convincing them to actively support this national strategy when making their own publishing choices was seen as an area where “we [the negotiators] have to really make progress in getting the authors involved, because, in the end, they are [the ones who are] going to make choices” about whether to make use of available Open Access publishing options [int_3:89]. Thus, having more authority inside their own institutions was intended to help win broad support for the national Open Access strategy, an integral part of the success of the strategic steps undertaken by the negotiation teams.

To summarise, and to link back to the theoretical framework, VSNU’s appointing old and new members from different areas and management levels at universities to the negotiation teams shows the different ways in which the actors can be *enrolled*. As explained by Callon (1986, p. 196), enrolment is “a set of strategies in which the [key actors seek] to define and interrelate the various roles they had allocated to others”. Possible ways to foster enrolment might differ depending on the means and channels deemed suitable to persuade certain actors to accept and actively live out their roles. As already noted with regard to the “interessement devices”, these range from physical violence to seduction, transaction, or obtaining “consent without discussion” (ibid., p. 214). At the same time, the tactical manoeuvre of re-distributing roles within negotiation teams can simultaneously serve as a discursive “trapping device” (Callon, 1986) that helps to elicit the actual engagement of the actors according to the roles attributed to them. Yet whether the designated action programme will work out depends on whether the main question posed before – in this case, knowing “how can Open Access be achieved?” – will hold the assumptions made during the

problematization stage and follow-up trials of strength, and whether it can be transformed into a series of more certain commitments.

According to Callon (1986, p. 211), “no matter how constraining the trapping device, no matter how convincing the argument, success is never assured. In other words, the device of *interessement* does not necessarily lead to alliances, that is, to actual enrolment”. Instead, the *tricks* that accompany translation processes must still be tested in multilateral negotiations. Similarly to the scallops that had to be *persuaded* to anchor themselves to the collectors, the researchers in the Netherlands still had to be convinced to switch their publications to an Open Access mode. Moreover, other important actors in the Dutch Open Access story, as identified in Dekker’s letter, still also needed to be animated to actively support the national transition plan and to help with scaling up and internationalising this effort. How to *mobilise* those other actors, and especially the researchers in the Netherlands and fellow science policy-makers in other countries, to behave according to the Dutch Open Access transition plan, will be the focus of the next sub-section and the fourth translation phase as described by Michel Callon (1986).

7.3.4 The “mobilisation” of allies: Are the spokespersons representative?

The last of the four translation moments in the sociology of translation is called *mobilisation*. For the success of each translation project, according to Callon (1986, p. 214), the crucial questions to be answered at this stage are: “Who speaks in the name of whom? Who represents whom?”. Similarly to the phases of *interessement* and *enrolment*, as described above, the negotiations here do not take place with the whole population of a certain group; rather, “only a few rare individuals are involved” (ibid.). In the case of the Dutch research community, the heads of research institutions or their representatives are the “few individuals [that] have been interested in the name of the masses they represent (or claim to represent)” (Callon, 1986, p. 215).

As Callon explains further, soliciting the agreement of an entire community is based on a simple general mechanism. Through a chain of intermediaries and equivalences, the number of representative interlocutors that speak for a certain group is reduced step by step, leading to the designation of “a sole and ultimate spokesman” (1986, p. 216). When applied to the orchestration of the Dutch Open Access transition, such a deductive line of reasoning is also clearly recognisable. Recall that researchers were named in Sander Dekker’s letter as the key party in the academic publishing system who produce, review, and build upon research results in scientific publications. In the next step, various Dutch research and higher education institutions, the national research council, and academic institutes and associations were explicitly addressed as the “stakeholders” of the very same system. They were described as the ones who had already played a substantial role in promoting Open Access in the Netherlands in the past and were now confronted with fulfilling Dekker’s ambitious goals (OCW, 2014). Yet, following the reactions to the demands outlined in the letter, Dutch universities, who provide an institutional affiliation for most of the researchers, and, subsequently, their umbrella organisation VSNU, became the ones in charge of implementing the government’s mandate. Finally, a few members of the latter group were delegated as representatives of the Dutch universities to each of the teams that would conduct

negotiations with the eight major publishing companies. In this way, a handful of individuals were authorised as the legitimate spokespersons of the masses to negotiate the future fate of research publications vis-à-vis scientific publishers.

The idea of a few delegates speaking in one voice on behalf of the whole (research) community was also reflected in the communications from VSNU. In its electronic magazine, “The Netherlands: Paving the way for open access” (VSNU, 2016b), the university association portrayed itself as a mouthpiece of the entire Dutch research community. As the readers of this e-zine were informed, “Meijer, Becking and Winter [Executive Board Presidents of three Dutch universities and members of the negotiation teams] had the privilege of being chosen to negotiate with the publishers on behalf of all research universities and universities of applied sciences in the Netherlands, all university libraries, and the National Library of the Netherlands (KB). That is, on behalf of the Netherlands as a whole” (VSNU, 2016b, p. 12). This attitude was repeatedly underscored in the interviews with negotiation team members on the side of VSNU when justifying their efforts as a matter conducted “on behalf of” or “for the benefit of Dutch researchers” [int_10:92]. Through a series of intermediaries, as argued by Callon, the populations of affected actors were thus progressively mobilised and alliances formed, leading to a constellation in which their spokespersons started “acting as a unit of force” (1986, p. 216). Or, to put it in the words of another interviewee, such a mobilisation manoeuvre became “not a matter anymore of sending a letter to parliament [by the OCW ministry], but [of] collectively arranging” or ensuring that all relevant parties are involved and “come up with this plan” [int_16:261].

Labelled as a “unique bargaining model” in the same VSNU e-zine, this first of the four success factors of the Dutch approach was said to have “made it possible to create momentum” and to have considerably strengthened “the power and position of the negotiators at the negotiating table” (VSNU, 2016b, p. 12). Moreover, referring to “the significant agreement with Elsevier” that had been announced shortly before, one of the executive-level team members and the lead negotiator for VSNU, Gerard Meijer, was quoted praising the VSNU-Elsevier agreement for 2016–2018 as “a great example of what can be achieved when all the universities work together and stand their ground” (ibid.). Returning to the introductory questions posed by Callon (1986), the “uncountable populations of silent actors” (p. 218) – as diverse as researchers at Dutch research universities and universities of applied sciences, international PhD students, and those with no institutional affiliation – end up being represented by a few “who speak and act in their name” (p. 216).

However, as taught by the sociology of translation, “to speak for others is to first silence those in whose name we speak” (Callon, 1986, p. 216). As will become apparent from the analysis of the VSNU-Elsevier negotiations in this case study, the low uptake levels of the Open Access options offered under the 2016–2018 agreement indicate a dissonance between the official portrayal of a success story in VSNU brochures and the mixed feelings among researchers or even the negotiation team members themselves. Even more so, the government ambition to regulate scholarly publishing was partially perceived as an unwelcome political intervention into the inner workings of academia and sparked some backlash. This issue, along with the reactions from

researchers in the Netherlands to the national ambitions for the Open Access transition, as well as key tensions observed in this field, will be analysed in more detail in *Chapter 9 on Key tensions*.

But back to the manoeuvres at this translation stage: beyond the progressive mobilisation of actors at a national level – which resulted in the designation of VSNU and its delegates as the ultimate spokespersons for the Dutch research community – Sander Dekker's counterparts and science policy-makers in other countries were also asked to act. "Clear political support" was proclaimed as another success factor of the Dutch approach and described in detail by VSNU (2016b, p. 12). As explained in its e-zine, some two months after state secretary Dekker's letter was sent to the Lower House of the Dutch Parliament, the Netherlands revealed its plans for the presidency of the Council of the European Union in the spring of 2016. By making this topic "a focal point" of the Dutch presidential term, the aim was "to give open access a boost during that period, both nationally and internationally" (ibid.). Because "to force publishers to move to an open access publication model" was said to only be possible "with cross-European coordination" (ibid.).

The need to mobilise such a collective action at an international level was also strongly emphasised on the final pages of the same VSNU brochure. In an interview, Robert van der Vooren, Open Access project coordinator at VSNU, claimed that Open Access was "not just a Dutch affair" (VSNU, 2016b, p. 19). Departing from the observation that only some 2% of all research publications annually originate from the Netherlands, Van der Vooren stressed that the tipping point at which the "publishers will be forced to transform the old publishing models" will be reached only "if the rest of the world joins in" (ibid.). Therefore, it was seen as "essential that other countries and individual institutions make similar arrangements with publishers as in the Netherlands" (ibid.). In the end, "the demand for open access publications will then increase globally, and at a certain point, the old publishing models will no longer be needed", predicted Van der Vooren (ibid.).

Indeed, a significant thrust towards consolidating national Open Access strategies took place during the Dutch presidency of the Council in spring of 2016. As a result of an international conference hosted on this occasion in early April 2016, the "Amsterdam Call for Action on Open Science" was released and called on national authorities and the European Commission to "agree on a 100% [Open Access] target for 2020 and regular monitoring and stocktaking" (p. 30; see also chapter 1. *Introduction*). Reporting on this event in its Open Access newsletter a few days later, VSNU was "thrilled that such an important step has been taken in Amsterdam, in order to accelerate the transition to open science" (VSNU, 2016d, OA Newsletter No. 17, n.p.). Moreover, the president of VSNU at the time, Karl Dittrich, was quoted sharing his enthusiasm: "You can tell that support for open access is growing on all fronts, both nationally and internationally. In the years ahead, VSNU intends to continue the concerted European push to translate this 'call for action' into real 'action'" (ibid.).

The need to move from vision to action, as had already been prominently declared in the Amsterdam conference programme, received further political support some weeks afterwards. In late May of the same year, the Council of the European Union – a body that brings together

ministers and state secretaries from all EU member states – adopted its conclusions on “the transition towards an Open Science system” (Council of the European Union, 2016). In this resolution, referring to the BOAI declaration, the Council welcomed “open access to scientific publications as the option by default for publishing the results of publicly funded research” (ibid., p. 7). Moreover, national delegates attending the meeting agreed on a broad range of issues and aims related to this objective. In the original wording of this document, the Council declared that it:

“AGREES to further promote the mainstreaming of open access to scientific publications by continuing to support a transition to immediate open access as the default by 2020, using the various models possible and in a cost-effective way, without embargoes or with as short as possible embargoes, and without financial and legal barriers, taking into account the diversity in research systems and disciplines, and that open access to scientific publications should be achieved in full observance of the principle that no researcher should be prevented from publishing; INVITES the Commission, Member States and relevant stakeholders, including research funding organisations, to catalyse this transition; and STRESSES the importance of clarity in scientific publishing agreements” (Council of the European Union, 2016, p. 8).

These conclusions were adopted by the so-called Competitiveness Council configuration of the Council of the European Union, chaired by the very same Sander Dekker, as the junior minister of the Netherlands, which was holding the six-month Council presidency at that time (ibid.). As one of the ten different “configurations” of the Council of the EU, the Competitiveness Council deals with research and innovation policy as one of its four major policy areas with an overarching aim “to enhance competitiveness and increase growth in the EU”.⁸⁰ The emphasis on optimising the exploitation of research results and boosting the international standing of the European research sector was also notable in other sections of the conclusions. For instance, the Council acknowledged that Open Science – entailing, amongst others, “open access to scientific publications and optimal reuse of research data, citizens science, and research integrity” (Council of the European Union, 2016, p. 4) – has the potential “to enable growth and innovation through reuse of scientific results by all stakeholders at all levels of society, and ultimately contribute to growth and competitiveness of Europe” (ibid., p. 3). Given that the other policy areas covered by the Competitiveness Council include internal market, space, and industry policy, it is not surprising that potential economic benefits were foregrounded, thus remarkably infusing the initial Open Access goals (as first formulated in the BOAI declaration; see also chapter 5. *Framing the story*) with competition-driven ideas in the resulting Council conclusions.

Interestingly, through this round of mobilisation at the EU level, the target year for reaching the 100% Open Access goal in the Netherlands was simultaneously shifted from 2024 to 2020. While in VSNU’s e-zine of March 2016 it still said it was working “to achieve the ambition of State Secretary Dekker (100% open access by 2024)” (VSNU, 2016b, p. 19), in April 2016 the Amsterdam

80 Council of the European Union: Competitiveness Council configuration (COMPET). Retrieved from: <https://www.consilium.europa.eu/en/council-eu/configurations/compet/> [last checked on 09/03/2021]

conference had already formulated a call for “a clear pan-European target: from 2020 all new publications are available through open access from the date of publication” (p. 30). This new line on the horizon was then further solidified in the resolution of the Council of the European Union in May 2016. When asked about the two different target years in the interviews with VSNU negotiation team members, they said they were still working towards “the original political target, that is 2024” [int_10:25] and even reported being surprised when they heard about the even more ambitious goal. As explained by one interviewee, “I quite often asked about how the 2020 target relates to the original 2024; the only explanation that I get ... from those who are involved with working with the minister, is that, they said, well, in the European Union, you just can't set a target on 2024, if it's now 2015, 2016, 2024 is too far away ... So politics is a different reality” [int_10:31-32].

However, in the “National Plan Open Science” jointly released by more than a dozen Dutch research organisations at a dedicated event in early 2017, the Netherlands was said to be “responding to the Amsterdam Call for Action on Open Science published in 2016, the conclusions of the Competitiveness Council in May 2016” and to a recent letter to parliament concerning Open Science by the State Secretary for Education, Culture and Science (p. 5). In the chapter explaining the “Dutch ambitions”, the national goal was then stated as “to achieve full open access in 2020” (OCW, 2017b, National Plan Open Science, p. 21). The signatories of the Dutch Open Science Declaration released in this national plan, including representatives from VSNU, KNAW, NWO, the Netherlands Association of Universities of Applied Sciences (Vereniging Hogescholen, VH), and the PhD Candidates Network of the Netherlands (Promovendi Netwerk Nederland, PNN), had now committed themselves to “contribute to the transition towards an open science system in the Netherlands by taking measures to ensure that the ambitions in the National Plan Open Science, which require the active engagement of our organisations, are implemented” (ibid., p. 6).

As we can learn from this translation moment, through the mobilisation of relevant actors and actions, first at a national level and then successively internationally, the Dutch national ambitions were incrementally transformed. The notion of mobilisation, as Callon (1986, p. 216) argues, is perfectly suited to explain the mechanisms described at this stage. Because “to mobilize, as the word indicates, is to render entities mobile which were not so beforehand”. At first, scientific publications, publishing companies, and research organisations were loosely connected and pursuing their own goals and interests – by analogy with “the scallops, fishermen, and specialists [who] were actually all dispersed and not easily accessible” (ibid., pp. 216–217). In the end, science policy-makers as the key actor in this translation effort unilaterally determined “what these entities are and want” (cf. Callon, 1986, p. 217). Through the designation of the spokespersons and the settlement of a series of equivalences, as Callon further explains, “all these actors are first displaced and then reassembled at a certain place at a particular time” (ibid.). That is, it was not only the network of actors and their roles in the current academic publishing landscape that were first displaced and then reassembled according to the new political goal. But also the national target of 100% Open Access by 2024, as initially declared in Dekker’s letter, was adjusted over the course of multilateral negotiations with various decision-makers. It travelled from the Dutch parliament to

the meetings of science ministers from EU member states, then went through a “Europeanisation” phase, was reassembled, and subsequently came back to the Netherlands in the new guise of an ever more ambitious pan-European goal of 100% Open Access by 2020.

In this way, all the mandatory displacements took place for the actor-network to be formed and the necessary alliances forged. Through a series of translation manoeuvres, propositions first made in Dekker’s letter, and then buttressed in follow-up declarations, were rendered credible and indisputable: scientific publications would be made available in Open Access, and scientific publishers would change their business models (cf. Callon, 1986, p. 216). In this way, all the relevant actors were *interested*, *enrolled*, and successively *mobilised*, with political commitments proclaimed during festive ceremonies at national and international events. In terms of the sociology of translation, “[these] diverse populations have been mobilized. That is, they have been displaced from their homes to a conference room. They participate, through interposed representatives, in the negotiations over [access to scientific publications]. The enrolment is transformed into active support” (Callon, 1986, p. 218).

As for the potential to deviate from the official course, in the words of one interviewee, the question now becomes “whether the parties involved, the actors involved, especially the association of universities [VSNU], haven’t passed the point in which they can change, can return, maybe they have passed the point of [no] return” [int_16:355]. Or, in the words of VSNU itself: “The train has left the station and we are on a clear course to achieving State Secretary Dekker’s goal. There is no going back now!” (VSNU, 2016b, p. 5). Now that the four translation moments are completed, “a constraining network of relationships has been built” (Callon, 1986, p. 15). And yet, “from translation to treason there is only a short step” (ibid., p. 19). Whether the masses will follow their representatives, a question at the core of the whole translation effort, still remains to be answered.

Because, in Callon’s vocabulary, the key actors in the Dutch Open Access endeavour have formed a relationship with only a few representatives in this actor-network – whether they be scientific publications as a national share of global research outputs, university delegates in a professional association, or science ministers participating in the Competitiveness Council meeting (cf. Callon, 1986). “If consensus is achieved”, as argued by Callon, “the margins of manoeuvre of each entity will then be tightly delimited” (1986, p. 218). Yet assembling an actor-network and mobilising actors according to their predefined roles and relationships for this purpose is also always a temporary constellation only. More particularly, will other allegedly like-minded countries agree with setting a similar national goal, as promoted by Sander Dekker, at the end of the day? Or, even more importantly, will researchers in the Netherlands embrace the results achieved by the negotiation teams in their name and make active use of the Open Access options offered to them?

Before moving further with a detailed analysis of researchers’ reactions and key areas of tensions identified in this case study, the current chapter will conclude with an interim discussion. First, it will follow up on some of the narratives found in Sander Dekker’s letter and partially already addressed at the problematisation stage, as well as a number of ambivalences resulting from the

particular problem-solution propositions made therein. Subsequently, the very final stage of each translation process – that of potential dissidence (Callon, 1986) – will be discussed. The next chapter of the Dutch Open Access story will consist of a deeper dive into the negotiation steps and crafting the agreement between VSNU and Elsevier for 2016–2018

7.4 Short interim discussion, or *What is not being problematised?*

As argued by Callon, whether the spokespersons are considered representative by the masses they claim to step in for and, thus, will be followed by them, “is a practical and not a theoretical question” (1986, p. 219). Because every controversy can be described as “all the manifestations by which the representativity of the spokesman is questioned, discussed, negotiated, rejected, etc.” (ibid.). That is, whether the key actor’s project will be regarded as a success or a failure may change in hindsight or with other novel factors. The parties that hitherto followed their assigned roles may revoke their cooperation and refuse to support the action programme any longer. The inter-relations that emerge in such actor-networks are thus to be seen as only temporary and locally situated snapshots that may change with any shifts in their arrangements or when viewed from a different perspective. For these reasons, translation is always to be considered an ongoing *process*, and not a fixed or static result thereof.

Moreover, the processual nature ingrained in the notion of translation “emphasizes the continuity of the displacements and transformations which occur in this story: displacements of goals and interests, and also, displacements of devices, human beings, larvae and inscriptions” (Callon, 1986, p. 223). Or, as in the Dutch Open Access case, displacements of institutional priorities, traditional tasks, roles, and responsibilities, but also scientific publications, financial streams, and publishing workflows. According to Callon, displacements occur at every stage of translation, although with varying degrees of strategic importance. Here, a series of displacements were clearly discernible. During *problematization*, all actors identified in Sander Dekker’s letter (OCW, 2014) were invited to change the focus of their preoccupations in order to fulfil the ambitious national targets declared by the state secretary – full Open Access by 2024. While major scientific publishers were requested to switch their academic journals and business models to Open Access and to start charging APCs instead of subscriptions, Dutch researchers were expected to change their publishing practices and to start publishing their works in Open Access. Dutch research organisations, in turn, and particularly their libraries, faced an even longer list of requirements. Not only were they asked to intensify their cooperation with major publishers and “devise joint strategies for making publications available through open access journals” (OCW, 2014, n.p.). But they were also asked to prioritise the Golden road to Open Access in their institutional policies and reallocate their funding streams to align with the shift from paying for journal subscriptions towards paying for APCs, as well as to sign Big Deals adjusted for that purpose.

In its initial reaction to the letter, VSNU advocated for the Green road to Open Access as a serious alternative in the spectrum of possibilities to implement the national goals. However, it became more ambivalent over time and finally changed its rhetoric to support the official political objective and the chosen means during the *interressement* stage. Displacements during the stage of *enrolment*,

on the other hand, are “where an agreement is found through mutual concessions” (Callon, 1986, p. 223). When university librarians recognised that these kinds of Big Deals negotiations would exceed their regular competencies, heads of executive boards at Dutch universities stepped in to lead the newly composed teams of university representatives. In this way, upgrading the authority level was said to give more weight to the whole negotiation process.

Then, during the fourth stage of translation – *mobilisation* – some of the essential displacements took place. While political meetings at the national, international, and especially EU levels were organised, the targets proclaimed in Dekker’s letter were also (almost incidentally) transformed. Over the course of the Dutch presidency of the Council of the European Union in spring 2016, fellow counterparts in other EU countries and national authorities were now urged to commit themselves to a newly invented “pan-European goal” of 100% Open Access by 2020 (Amsterdam Call, 2016, p. 30).

Yet at the end of every translation effort, according to Callon (1986, p. 223), is the final stage, that of (possible) dissidence. Let us briefly return to the story of the scallops to illustrate the point. Off the coast of St. Brieuc Bay, hundreds of scallop larvae anchored to collectors and were treated as sufficient proof that an uncountable number of their siblings would behave accordingly. However, it remained entirely unclear whether this movement was likely to last. In the following years, repeated attempts brought no desired results. The network of relationships and dependencies that was established at first and seemed successful now started to fail. The nets placed in the sea by the marine biologists remained empty. Increasingly, their chosen strategy began to wobble. Were the nets placed on towlines indeed an obligatory passage point for the anchorage of scallops?

What is more, the marine biologists soon faced another challenge. The actors, who were convinced to stick to their roles during the *interressement* stage, started to dissent from their commitments. Not only did the scallops refuse to anchor themselves, but a series of other mutinies took place. Most notably, the key actors were betrayed by some of their crucial accomplices, the fishermen. As vividly described by Callon (1986, p. 220):

“In the two years following the first (and only) anchorages, the scallops hatched from the larvae ‘interested’ by the collectors, after being regrouped at the bottom of the bay in an area protected by a concrete belt, are shamelessly fished, one Christmas Eve, by a horde of fishermen who could no longer resist the temptation of a miraculous catch. Brutally, and without a word, they disavowed their spokesmen and their long term plans. They preferred, as in the famous aphorism of Lord Keynes, to satisfy their immediate desires rather than a hypothetical future reward.”

Over the course of time, the agreed action programme was challenged, and the goals and beliefs of the implicated actors started to fluctuate. The displacements of the previous stages were brought into question. Furthermore, in light of the growing scepticism, the three marine biologists felt compelled to change their strategy and undertake a vast campaign to designate new spokespersons for the fishermen. However, while the newly elected representatives raised their voices, the previous ones had lost their authority. As a consequence of this fresh round of

displacements, the other actors were also diverted from the initially devised obligatory passage points. At the end of the scallop story, the controversy over this experimental project in St. Brieuc Bay was closed. The group of three marine biologists, although they had made remarkable early gains, were ultimately betrayed by other actors. They ended up being denounced; their translation attempt had failed (Callon, 1986).

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Yet what happened to the “scallops” in the Dutch Open Access story? The novel Big Deal–inspired agreements extended with prepaid Open Access publishing quotas were lauded with much revolutionary zeal as “a great step forward to an OA world” (VSNU, 2016b, p. 15), where “the Netherlands is even considered a change agent, paving the way for other countries with open access ambitions” globally (ibid., p. 4). At the same time, paradoxically, such *deals* could be arguably seen as reinforcing the dominant positions of the very same commercial publishing giants whose power such Open Access initiatives were supposed to curtail. Instead of changing the current publishing system and fixing its deficiencies, as proclaimed in Dekker’s letter and reasserted by VSNU’s negotiators themselves, they rather seemed to reproduce the status quo, trapped in institutional logics and a myriad of entangled interests.

This observation is an illustrative example of the many ambivalences to be found in the Dutch Open Access journey. In particular, the arguments presented in Dekker’s letter to justify the proposed problem-solution definition entail numerous inconsistencies. For instance, with a reference to similar efforts in the UK that prioritised the APC-based road to Open Access, one could read in the letter that the “Finch Group’s report sets the standard” (OCW, 2014, n.p.). Interestingly, the expressed preference for this model facilitated by the payment of usually very costly APCs was quickly criticised by another committee in the British Parliament and VSNU itself, at least initially (VSNU, 2013, n.p.). What is more, some long-standing Open Access advocates even likened these recommendations to “a Trojan Horse, [that] serves publishing industry interests instead of UK research” (Harnad, 2012, n.p.; see also *sub-chapter 1.1*). At the same time, these criticisms were not considered in the Dekker’s letter as a potential source of doubt to question the chosen route. Instead, the Netherlands was seen to be in “an exceptional position” as a home country to the biggest scientific publishing conglomerates – and seemed to be determined to make great use of this proximity.

Apart from a discussion over the exclusionary character of such Open Access models as promoted in the Finch Group’s report and, subsequently, in Sander Dekker’s letter – with publishing fees for a single journal article ranging up to several months’ salary for most researchers in the world – one will quickly discover yet another set of non-problematized issues. Although, according to VSNU (2016, p. 12), the “Dutch bargaining model made it possible to create momentum”, its future prospects were seen as dependent on another circumstance. Namely, “to make progress, it is essential that other countries and individual institutions make similar arrangements with publishers as in the Netherlands” (ibid., p. 19). That is, the momentum created before by the

Dekker's letter and the events shortly afterwards still had to be *sustained*.

In other words, ensuring collective action at an international level became yet another, if unspoken, necessary pillar for the success of the "Dutch approach" (VSNU, 2016b, pp. 12–13). However, whether the costly implementation model chosen by the policy and decision-makers in the Netherlands will be prioritised in other (European) countries, remained to be seen. Not least because the preference for the Golden road to Open Access, defined as based on the payment of APCs in Dekker's letter, was grounded in the fact that the Netherlands is "home to a number of major scientific publishing houses" (OCW, 2014, n.p.). Whether fellow policy-makers in countries without a considerable publishing industry would be as keen to offer the latter "a good business case" as in the UK, Germany, and the Netherlands (*ibid.*), remained to be seen.

Here again, the dominant position of these publishing companies, along with the central role ascribed to established journal brands in their portfolios, was underscored in the letter. This was also formulated as one of the basic premises for the national Dutch Open Access transition (OCW, 2014). Until the subscription-based journals would be ultimately converted to fully Open Access ones, in the meantime, research institutions would already need to start adjusting to paying for the publishing fees instead of subscriptions. That is, the hybrid model was seen as a temporary solution during the transition period only, after which all journal articles were to be published solely in Golden Open Access (*ibid.*). As a consequence, this trajectory – if successful – would eventually eliminate the subscription-based model itself.

Asking the question "how could it be otherwise?" turns attention to *the roads not taken* in the Dutch Open Access transition – namely, alternative non-APC and other models as well as community-led publishing initiatives, carried out by other actors and not the multi-national publishing giants (see also comments on more radical solutions, as described in sub-chapter 5.2 *Defining Open Access and its many (sub-)species*). Contrary to the claims of setting up a new, radically different academic publishing system, the choices made in Dekker's letter and immediately afterwards rather point to an overall intention to preserve many of the elements of the current publishing landscape, while keeping familiar prestige proxies and big commercial publishers in the loop. These blind spots stand conspicuously as sites of discursive silence (Clarke, 2005) in the letter, signifying the wish of Dutch science policy-makers to only partially tinker within the margins of the old system – without the risk of shaking up its anchors of stability or jeopardising the privileged positions of dominant research institutions and publishers alike. Indeed, given that either the payments for subscribing to academic journals or those for covering publication fees for researchers' own articles would end up in the bank accounts of the very same publishing companies, the "switch" from subscriptions to APCs seems to promise little effect in changing the current power relations or the entrenched dependency in academia on major commercial players that command the bulk of scientific literature along with quantitative indicators thereof that are widely used for research assessment.

Furthermore, the public funding argument and the moral imperative to provide public access to scientific publications from publicly funded research projects can be questioned. While this line of

reasoning is routinely evoked in Open Access advocacy, it arguably builds on the premise that publications in scientific journals, by proxy, can be taken as readily accessible and comprehensible manifestations of scientific knowledge (see also Csiszar, 2018). These forms and formats of knowledge representation, accordingly, are deemed suitable for sharing beyond their initial audiences – scientific peers. Here, the only barrier for “accessing” scientific knowledge, supposedly, lies in the physical access to an academic journal article. It bears mentioning that the role of education and skills or training, in order to render this knowledge readily usable in a comprehensible manner, is not discussed in the letter. Consequently, the demands for Open Access to publicly funded research usually target only the formal publishing subset of scholarly activities, and not, for instance, requests to broaden engagement with potential publics or practitioners beyond academic communities (see also Zuccala, 2009, 2010; Solbu, 2018; Hetland, 2019). That is, *the public* invoked in the public funding argument serves rather as a means to justify political demands for Open Access without further consideration of the additional steps that would be required in order to leverage the allegedly “enormous” advantages for these *implicated actors*, if taken seriously.

At the same time, the argument that certain publics and societal groups would benefit most from free access to scientific publications deserves additional scrutiny. As listed in the letter, various practitioners and especially those in the health care sector, small and medium-sized businesses, public authorities and consultancies, and at undergraduate schools were expected to benefit from free access to scientific publications. However, several basic assumptions with relation to these actors and their needs can be questioned, such as:

- the groups named therein have an interest in and need for scientific literature,
- they do not currently have access to it nor alternative means to obtain it,
- scientific knowledge codified in the scientific (article) format is sufficiently comprehensible and directly applicable in extra-academic fields or situations,
- it is a desirable virtue for scientific knowledge to be applicable in practice.

Indeed, after a closer examination of the public funding argument (or the taxpayers’ argument; see chapter 5. *Framing the story*), the moral imperative upon which it is implicitly built seems to be less straightforward than it appeared at first sight. The issue in this matter can be summarised in the following question: should the publications arising from research funded by Dutch public money be made available only to Dutch taxpayers? Or, as argued in Open Access declarations, and echoed in Dekker’s letter, should readers be offered “*worldwide* access to research publications, journals and books free of charge” (OCW, 2014, n.p., emphasis added)?

As it has emerged in the interviews with negotiation team members, this issue presented more than just a hypothetical question. One of the considerations expressed by the interviewees gravitated around the possibility of unfair beneficiaries of the Dutch Open Access efforts and especially potential “free-riders” in other countries. Namely, if other academics and research organisations elsewhere were to choose not to pursue the same Open Access route as in the

Netherlands, they would still benefit from the free availability of scholarly publications from Dutch research institutions. As I will discuss later on, the prospects of other countries pursuing similar national strategies will become one of the principal concerns for VSNU negotiators (see chapter 8. *Re-infrastructuring “openness”*). Promoting an international *collective action*, ironically, will then turn out as a prerequisite to sustain the achievements of local negotiation teams and to secure the overall success of “the Dutch approach” (VSNU, 2016b).

Finally, the list of expected benefits outlined in the letter was repeatedly backed up with an economic rationale, with potential benefits cited not only for various societal actors, but also for certain businesses and industries. Yet the particular role of industrial actors such as huge pharmaceutical companies that maintain their own research & development departments, and which are said to generate some 15% of journals’ publishing revenues as corporate subscribers in STM fields (Ware & Mabe, 2015; Johnson et al., 2018), was not explicated in more detail in the letter. However, this actor group might emerge as one of the main unexpected beneficiaries in the shift from paywalled journal subscriptions to government-subsidised free access to scientific articles (Bach & Ray-Sannerud, 2017; ElSabry, 2017; see also chapter 9. *Key tensions*).

To summarise, although no clear answers can be given yet as for the ultimate fate of the Dutch “scallops”, as well as for the closure of major Open Access controversies, taking a closer look at the four translation moments, and especially the issues that were problematised – and, even more importantly, the ones that were not – reveals a number of basic social issues and competing interests in the Dutch Open Access odyssey. Drawing a parallel with the scallops analogy, once again, and asking the question “Whose livelihoods are to be sustained?” will be at the core of the next chapter, which examines the negotiation steps undertaken before reaching the VSNU-Elsevier agreement for 2016–2018, and the struggles of team members on their way towards crafting this deal.

8. Re-infrastructuring “openness”: Crafting the VSNU-Elsevier agreement for 2016–2018

After having analysed the translation and negotiation manoeuvres by which Dutch science policy-makers attempted to exert power and mobilise action, along with the prescriptions made in Dekker’s letter, I will now focus on how the agreement between the university association VSNU and the scientific publisher Elsevier was crafted. In this chapter, I first discuss specific design concerns that the respective negotiation teams were confronted with. Next, I trace the negotiation processes by building on interviews with members of both teams. This is followed by *de-scripting* the final agreement from an additional conceptual angle (Akrich, 1992). Finally, I provide an interim discussion with an emphasis on changing infrastructural relationships in the proposed transition from journal subscriptions to full Open Access in academic publishing.

8.1 Moving from translations to specific design concerns

As I have shown in the previous chapters, the origins of the recent Dutch Open Access endeavour can be traced back to the letter “Open Access to publications” for the Dutch Parliament, signed by the state secretary for education, culture, and science at that time, Sander Dekker (OCW, 2014). From announcing the intention to draw up such a letter, to debating its ambitious targets at the general parliamentary consultation in late 2013, to mobilising action at the national and international levels, this letter has triggered far-reaching implications for the scholarly publishing landscape in the Netherlands and beyond. To understand the mechanisms of how a particular problem-solution definition was established in the letter, and how the major parties were convinced to act in support of the proposed action programme, I have examined the compilation of this document and the ensuing tactical moves with the help of the sociology of translation (Callon, 1986). Through this lens, we have followed Dutch science policy-makers as the key actor behind this letter and reconstructed the four moments of translation in the initial episode of the Dutch Open Access odyssey.

In the present chapter of the empirical case study, I focus on the next episode in the evolution of the envisioned Open Access transition in the Netherlands. Namely, how the national target to switch to 100% Open Access within ten years as well as the basic parameters set in Dekker’s letter have been translated into specific agreements between Dutch research institutions and some of the biggest scientific publishing companies. By taking the example of the VSNU-Elsevier contract for 2016–2018, I analyse the negotiation processes aimed at customising the older Big Deals and aligning them with the political objectives to achieve full Open Access. For this purpose, we will follow another group of actors in the Dutch Open Access story – the delegates from VSNU and Elsevier who were members of their respective negotiation teams. The empirical materials underlying this chapter mostly build on interviews with members of both negotiation teams.

Indeed, after VSNU had set the scene for the negotiations (see sub-chapter 6.2 *Pulling the strings*), prospective negotiators on both sides of the table were confronted with multiple demands. On the one hand, they had to guarantee that researchers would “continue to have worldwide access to research publications” (OCW, 2014, n.p.). Yet on the other hand, they were instructed “to make firm agreements [that] can expedite this [transition] process and shorten the transition period” (ibid.). Moreover, one of the main measures foreseen in the letter was to equip conventional Big Deals on journal subscription bundles with dedicated Open Access publishing components. Recall that Dutch research organisations, their libraries, and the publishers themselves were expected in Dekker’s letter to sign the next round of Big Deals only under the premise that all subscription journals would be converted to Open Access, or that the licencing fees would be offset against APCs (ibid.).

In other words, negotiators of this new type of Big Deals had to perform a delicate balancing act in order to meet the requirements of state secretary Dekker while keeping the customary access to subscription-based journals. In light of the main theoretical framework in this thesis, the task of fulfilling such partially conflicting goals can be succinctly described in terms of re-infrastructureing.

As suggested by Grisot and Vassilakopoulou (2017, p. 11–12):

“We argue that re-infrastructuring is a special type of engagement with a mature infrastructure during a turn in its life which happens when strategically mandated adjustments to existing arrangements are pursued. In such circumstances, the activities of those involved in infrastructuring, are focused in maintaining the embeddedness of the established infrastructure while renegotiating the connections that make embeddedness possible.”

The *mature infrastructure* in question, that of scholarly communication, and particularly its subset related to publishing research results in academic journals, faced a crucial moment in its evolution. At this point, significant reconfigurations of its inner workings had to be made, or alternatively, previously separate entities had to be associated in novel ways. According to Grisot and Vassilakopoulou, a leap in an infrastructure’s evolutionary trajectory is usually not a linear process but “may also include ‘jumps and turns’” (2017, p. 10). This potential for *a turn* in the life of the academic publishing infrastructure occurred when Dutch research organisations and other major actors were requested to adjust the *existing arrangements* of subscribing in bulk to scientific journals, known as Big Deals. The *strategic mandate* that directed them to do so came from the letter of state secretary Dekker (OCW, 2014). Along with the targets set and the conditions imposed therein, the focus of the negotiation teams in charge of implementing the national Open Access transition in the Netherlands was thus directed at *maintaining the embeddedness* of the established journal subscriptions infrastructure while *renegotiating the connections* in the network of relations between all affected parties in that infrastructure.

As Grisot and Vassilakopoulou (2017, p. 26) explain further, re-infrastructuring is “a strategically directed process, change is coming through purposeful interventions not as pure organic, bottom-up evolution”. Similarly to the aspirations to induce an Open Access transition in the Netherlands, in the case examined by the authors “the work of re-infrastructuring was not driven by locally initiated tailoring, appropriation, or repair interventions, rather it was policy-driven” (ibid., p. 26). These characteristics likewise apply to the present case. That is, it was neither university managers nor researchers (nor publishers themselves or other actors, such as research funding organisations) who initiated a large-scale overhaul of the academic publishing infrastructure in order to fix its shortcomings or to enforce severe changes in prevalent publishing models. Rather, the whole endeavour examined in this empirical case study was initiated in response to the political intervention of state secretary Dekker and his declared aim *to regulate* Open Access (OCW, 2014).

Yet what Grisot and Vassilakopoulou emphasise even more when suggesting that certain “turns” in infrastructure development be distinguished as a process of re-infrastructuring, are particular occasions where this work entails “re-orienting an existing infrastructure according to new logics and directions” (2017, p. 11). In the Dutch Open Access story, the negotiators of the VSNU-Elsevier agreement had to accommodate Dekker’s demands by shifting to a fundamentally different logic. Namely, Dutch research organisations and their libraries used to arrange subscription licences to gain reading access to academic journals for their faculty and students. The new logic, however, required re-orienting the flow of money and corresponding processes to cover the publishing fees

for researchers affiliated with their academic institutions. Therefore, the underlying *modus operandi* of the whole academic publishing infrastructure had to be reconfigured according to this new logic: from paying for journal subscriptions to serve the needs of their readers, to paying for publishing fees imposed on scholarly publications' authors. As a consequence, the sphere of relations between all actors in the academic publishing landscape, and particularly those between Dutch research organisations, their researchers, and scientific publishers, had to be reshaped accordingly.

Such a paradigm shift from a *pay-to-read* to a *pay-to-say* principle has also had far-reaching implications for the work of negotiating teams at VSNU and the publishing company Elsevier. As argued by Grisot and Vassilakopoulou, attempting to adjust an existing – in this case, academic publishing – infrastructure in use brings along with it a set of specific design concerns that need to be taken into account. On the one hand, those engaging in such re-infrastructuring activities have to address the challenge of “bringing novelty without being trapped in the existing arrangements or harming what is in place” (2017, p. 7). While on the other hand, they are tasked with transforming the very same infrastructure that they have hitherto been reliant upon. The manifold challenges to be faced by the designers of such intricate adjustments are succinctly summarised in the following quote (Grisot & Vassilakopoulou, 2017, pp. 25–26):

“Re-infrastructuring is challenging as it entails building on the installed base and transforming it at the same time (Aanestad et al. 2017). This creates a paradox: new developments need to fit and make use of existing arrangements and at the same time transform them. Overfitting on the existing installed base may strengthen its irreversibility and hinder change, disregarding it may limit the initial utility of any initiative and impede growth (Henningsson and Hanseth 2011). Furthermore, staying too close to existing logics can undermine the change agenda but moving too far increases the risk of harming the fragile balance of what is in place by adding new actors or purposes (Langhoff et al. 2016)”.

In Chapter 7, I demonstrated how adjusting the so-called Big Deals towards Open Access goals could be viewed as an “obligatory passage point” (Callon, 1986). On the subsequent pages, I follow negotiators from VSNU and Elsevier and zoom in on the next stage of the translation and negotiation processes that ensued after Dekker’s letter was sent to the Dutch parliament. Here, we shall learn how *maintaining the embeddedness* of the old journal subscription system became the main design concern for the negotiation teams responsible for reaching the VSNU-Elsevier agreement for 2016–2018. Taking a closer look at the paradoxes and dilemmas ensuing from such challenges will be another focus of the subsequent sub-chapter.

8.2 On the VSNU-Elsevier negotiation processes and gaming tactics

Following the letter of state secretary Dekker, negotiation teams at VSNU and major scientific publishers put a vigorous effort into adjusting the customary practice of agreeing to bulk subscription packages. Echoing the terminology of *re-infrastructuring*, even if unwittingly, the novel agreements were positioned as “leverage” to implement the national Open Access transition

in the Netherlands. Here, I first showcase the ways in which the provisions made in Dekker's letter shaped all activities of the VSNU negotiation team, even beyond the actual adaptation of Big Deals with purpose-built Open Access publishing components. Then, in the subsequent section I scrutinise how communicating about the "deadlock" situation was used as a deliberate gaming tactic on the VSNU side – and how getting out of this struggle became possible by embedding the proposed solution within the broader landscape of Dutch national research and innovation strategy. Last, I take a closer look at the emotional dimension and personal involvement of individual negotiators.

8.2.1 Reflecting on the government mandate

8.2.1.1 Using Big Deals as leverage

In the case examined by Miria Grisot and Polyxeni Vassilakopoulou (2017) that served as an empirical basis underlying their conceptualisation of re-infrastructuring, a team within a governmental agency in Norway received a mandate to develop novel healthcare services. Starting from the well-established information system that was previously set up to gravitate around the communication and information needs of health providers, the new "eHealth" services had to be designed to serve the needs of patients. As it emerged, this circumstance alone necessitated turning around a whole series of elements in the existing infrastructural arrangements in order to accommodate this new, apparently reverse logic. To capture the effects of such partially conflicting requirements, the authors followed the project team for more than two years and studied how the events and design decisions unfolded over time, and how the sociotechnical interdependencies and relations were rearranged (ibid.).

Similar to the approach taken by Grisot and Vassilakopoulou, here I follow the activities of a team that was delegated by the Dutch universities association VSNU to conduct negotiations with the publishing company Elsevier. Their task was twofold: to renew a subscription contract to provide reading access to a majority of scientific journals in Elsevier's portfolio, and to find a suitable arrangement to advance the Open Access publishing agenda in line with the ambitious targets set by state secretary Dekker. The personal views and experiences of VSNU negotiators on walking this tightrope will be complemented with interview accounts from their counterparts, i.e. members of the Elsevier negotiation team.

As I have discussed in more detail in chapter 4. *Theoretical framing*, adjusting an infrastructure requires building on the installed base of that infrastructure and constantly considering the compatibility between its old and new elements. Ensuring their interconnectedness becomes an implicit concern that deeply permeates any re-infrastructuring efforts. When examining the work of teams in charge of such tasks, a particular focus is then to be placed on how parts of the existing infrastructure "get re-oriented, what work this entails, and how an embedded infrastructure in use can be re-purposed" (Grisot & Vassilakopoulou, 2017, p. 9).

Indeed, aiming to preserve familiar features of the old subscriptions-based world in academic publishing appeared as a characteristic trait throughout the whole Dutch Open Access endeavour.

On the announcement of the agreement in principle that was reached between VSNU and Elsevier in December 2015, Philippe Terheggen, managing director for journals at Elsevier, commented:

“We welcome the agreement as the continued subscription access to a substantial part of the world’s highest-quality, peer-reviewed research is essential to the Netherlands maintaining its position as one of the world’s most impactful research nations. In addition, increased Open Access publishing options will be available to Dutch researchers to globally share their work” (VSNU, 2015c).

As can be seen from this statement, ensuring continuity and maintaining the status quo in the (academic publishing) world can be understood as one – if not *the* – main motivation for signing this agreement. Despite the claims made in Dekker’s letter that “the new system” will be considerably different from “the current, traditional” one (OCW, 2014), only minor parts of the former arrangements in academic publishing were to be tampered with. Most importantly, the alleged leading positions of the world’s top publisher and a research-intensive country had to be retained. By reaching this agreement, not only were both parties professing to advance mutual goals, but the best parts of the old subscription-based system and the new imagined Open Access world were supposed to be combined.

From this angle, making use of Big Deals as the most suitable tool for attaining such goals then comes as little surprise. Indeed, the idea to maintain this customary practice between academic libraries and the biggest scientific publishers promised to bring along many familiar elements of the “old” system on the way to the proposed new Open Access publishing mode. In terms of re-structuring, the operationally well-trying subscription packages were considered to be “a strong base to build on” in the envisioned transition to full Open Access (Grisot & Vassilakopoulou, 2017, p. 25). Given their ubiquity and interconnectedness with the deeply ingrained workflows in academic libraries, the qualities of such large-scale subscription contracts were now treated “as accomplishments to be retained and *leveraged* not as obstructions to novelty” (ibid., p. 24, emphasis added).

Quite tellingly, portraying “‘Big deals’ as [a] lever” (including a visual illustration of a steel lever) has also been employed in VSNU’s own language. In its electronic magazine detailing the then current state of negotiations with the top eight scientific publishers, a whole section was dedicated to explain the idea of harnessing Big Deals to help implement Open Access targets:

“In their struggle for open access, universities make use of the negotiations they are conducting with the big publishing houses regarding magazine subscriptions, which are also known as ‘big deal’ negotiations. For around ten years, these subscriptions have been offered by the publishers in package deals. VSNU negotiators have indicated that universities will only extend expiring contracts under the condition that publishers are willing to take serious steps towards open access” (VSNU, 2016b, p. 7).

In this vein, the key features of this widely practiced publishing and business model were positioned as a *strength* and not as a structural constraint of the current system. Therefore, they were to be retained and further utilised for the envisioned transition to the new Open Access

publishing mode. Yet sticking to the practice of acquiring bulk subscriptions to journal packages has proved to be not just a rhetorical device used by VSNU to help persuade scientific publishing companies. Indeed, maintaining the many traits known from the old subscription-based days and embedding them in the novel agreements has implicitly become the guiding principle and “a concern that shaped all team activities beyond the ones that relate to adaptations to existing components” (Grisot & Vassilakopoulou, 2017, p. 25).

Similarly, Grisot and Vassilakopoulou note that adjusting an existing infrastructure in use while “balancing novelty with continuity” (2017, p. 26) was characteristic of the work of the project team that had been charged with implementing the government mandate in the Norwegian case. In the VSNU-led negotiations tasked with reaching dedicated agreements with the biggest scientific publishing companies, the negotiation “team[s] opted for using embeddedness as a resource and embeddedness became ‘someone’s work or problem’ (Star 1999)” (ibid., p. 25). For the VSNU negotiators, making this choice and embedding new elements in the regular functioning of academic publishing infrastructure bore several advantages. Not only could they directly respond to the request in Dekker’s letter to tackle the upcoming Big Deals and adjust them by incorporating Open Access publishing components, but targeting such large-scale agreements for licencing the majority of academic journals would also address a considerable chunk of Dutch scholarly publications that appeared in those very same journals.

Moreover, designing new types of agreements on the basis of the former Big Deals offered a familiar terrain for Dutch research organisations and their libraries. Similarly to the development of novel healthcare services in Norway, making use of the embeddedness of the existing journal subscriptions system was possible because it was “intimately intertwined with [the] organizational structures and work practices” of these actors (Grisot & Vassilakopoulou, 2017, p. 24). On the one hand, this approach allowed the negotiators to draw on extensive experiences with these types of contracts that had substantially defined the relationships between academic institutions and scientific publishing giants over the past decades. On the other hand, the idea to adhere to well-attuned cooperation patterns and internal workflows promised to “facilitate [a] quick deployment and circumnavigate the bootstrapping problem” (ibid., p. 25), rather than having to set up a radically different scheme. Further, focusing on eight major scientific publishers, as prioritised in VSNU’s negotiation strategy, seemed to be a pragmatic approach in light of the decision to upgrade the authority level and to delegate the chief responsibility for this task to a small group of the highest-level university managers (VSNU, 2016b; see also 7.3.3 *How to define and coordinate the roles: “enrolment”*).

Yet there was a catch in the proposed marriage between Big Deals and Open Access, as requested in state secretary Dekker’s letter and elaborated further in VSNU’s agreements. As observed by Grisot and Vassilakopoulou (2017), maintaining embeddedness between old and new elements created the need to enrol private software companies in the design and development process. Since they were responsible for the functioning of a crucial interface in the current application, modifying infrastructure arrangements with this element at its core meant that these companies had to adjust their own products. Although the project team kept the responsibility for developing

other features of the new services in-house, it also became reliant on the collaboration with these commercial players. As a consequence, in the case explored by Grisot and Vassilakopoulou (2017), even designing brand-new features of these novel healthcare services could not be addressed independently. Rather, this work necessitated accommodating vendor-specific requirements and different work practices, if only because of the handling of the existing provider-controlled parts (ibid.).

Numerous parallels to the present case can be discerned. While the university delegations at VSNU were in the lead and could decide on their own how to carry out the mandate received from the Dutch government, they were still dependent on private publishing companies. On the one hand, the expressed preference for “the golden road” to Open Access, as defined in Dekker’s letter, meant that “prestigious, highly-ranked journals” – often in the control of major scientific publishers – were expected to be shifted from subscription-based to a fully Open Access publishing model (OCW, 2014). On the other hand, calling for the adjustment of Big Deals as one of the main measures to implement the national targets required that talks be sought with the *vendors* of these journal packages. In effect, this meant that prospective negotiators at Dutch research organisations found themselves locked-in to a situation with conflicting goals and interests: they had to both collaborate with commercial publishing giants and to simultaneously combat against them.

When asked in the interviews to comment on the positioning of Big Deals as a vehicle to implement the Dutch Open Access transition, most of the negotiators on the VSNU side seemed to endorse the chosen pathway. For one, the practice of bundling a huge number of journals into one subscription package was seen as the most effective approach to curb increasing costs for academic libraries. As explained by one interviewee, who referred to an analysis of expenditures at the Dutch library consortium UKB, subscription fees for standalone journals had risen by 25% over past few years, as compared to just an 8% increase for those included in Big Deals. “So I always use this example to make very clear to everyone that Big Deals are a very good instrument to keep pressure on prices” [int_2:199]. Therefore, extending regular Big Deals with Open Access publishing components for a slightly higher fee was described as receiving *added value* within these deals: “maybe it’s true, maybe in the end we have to pay more, but we get more value” [int_2:97].

8.2.1.2 Why we don’t (want to) talk about Green Open Access

Since the letter by state secretary Dekker contained a number of prescriptions for how the transition to Open Access was meant to take place, this document was regarded, at least to some extent, as presenting “a given fact that this is [what] the government want[s]” [int_3:32]. At the same time, the negotiation teams at VSNU were granted flexibility to make their own design choices. In the words of another interviewee, formulating a national vision and actually implementing it were seen as clearly separated: “because that’s what politics did for us, they told us what they wanted, not how to get it, how to reach this, that was our role” [int_10:423].

Considering the task outlined in Dekker’s letter to combine Big Deals with dedicated Open Access

components, VSNU had already taken measures in the run-up to the upcoming regular negotiation cycle, such as shifting the leading role from academic librarians up to the heads of universities (see also chapter 7. *Zooming in on the micro-dynamics of the letter*). Interestingly enough, an *upgrade* of authority level took place on the side of the publisher negotiators as well, although to a lesser extent and later in the negotiation process. Here, the regular sales staff was reportedly representing the publisher at the beginning of negotiations, and “only in later stages, when we didn’t manage to get the real [breakthrough], then higher staff up until the Vice-President of Elsevier were in meetings, but not initially – we started off with the usual sales staff” [int_3:92-93]. Since this time the demands of university managers and librarians were said to be “out of the normal questions that they [publishers] ever expect to see” [int_3:245], this led the negotiation team at VSNU to ask for “strategic partners from publishers as well” [int_10:303].

At the same time, the high-level involvement on both sides of the table meant that the necessary skills and room for manoeuvre for extraordinary negotiations were also in place. As explained by one of the negotiators, “if you get a customer who wants something totally different, it is difficult to cope with [it] in a normal negotiating team”, because, also on the publisher’s side, “there is a very strict procurements [process], negotiating teams, they know exactly what they can give and what they can’t, and what they need to achieve” [int_10:300-301]. Therefore, as argued by the same interviewee: “it doesn’t help if you bring the normal lower-level teams together, because one will step in with the mandate, the other [as well], there is no creativity, no strategic opportunity, they want a chance to look ahead because, you know, that’s at least how publishers work” [int_10:297-299]. However, the interviewee continued, “if you need to escalate, if you need to bring in the strategic alliance, then it helps to make the team more high-level, that’s basically the thing” [int_10:294].

Beyond the imminent power play, the negotiators on the VSNU side could foresee even more challenges in the forthcoming bargaining season. Some of the potential difficulties were rooted in the complexities and intricacies of different manifestations of Open Access publishing itself. Departing from the two basic implementation models, known as the Green and the Golden roads to Open Access (see also chapter 5. *Framing the story*), the interviewees were asked about their opinion towards these two siblings as well as any alternative models for putting Sander Dekker’s ambitions into practice. One of the respondents expressed his dislike for Green Open Access in a markedly clear way: “we don’t want to talk about embargoes, we want to talk about the *real thing*, which we consider the article on the website of the publisher” [int_3:55, emphasis added].

It is worth noting, though, that in the exact wording of the letter, the state secretary spoke solely of his “preference” for the Golden road, while the idea to keep the door open for the Green model was not discarded from the outset. This can be seen in this quote in the section about Dekker’s aspirations for Open Access in the coming years:

“Those disciplines in which there are few opportunities to publish in open access journals can opt for the green road to open access, in other words by having authors self-archive their articles in a repository” (OCW, 2014).

However, when they were further prompted to consider this option, there was little enthusiasm towards the Green Open Access route among negotiation team members. One of the reasons for setting this model aside from the negotiation table (as well as any other models and variations in the Open Access colour spectrum) stems from the expected reaction on the publishers' side: "because once you say that Green is a possible alternative, publishers may not want to explore the possibilities of offering Gold to the end" [int_3:45]. Therefore, the priority for negotiations was to demand free access to scientific articles immediately after their publication – a condition that is normally not granted under the Green Open Access model and was thus seen as dependent on the *good will* of subscription publishers. For these reasons, considering the Green Open Access model as an eligible alternative was regarded as not helpful among the attempts to change the current system, since it would imply keeping the old subscription model alive and would hence perpetuate this unsatisfactory – for many – situation. As explained by another peer on the VSNU negotiation team:

"Because you always have to subscribe [to journals], and then you get the derivate from that situation, you get a copy into your own [repository], and they [publishers] don't have to change any of their methods of working, etc." [int_4:348].

Keeping in mind such concerns, most VSNU negotiators agreed with the preference for Gold Open Access as expressed in the letter of state secretary Dekker. Moreover, making scholarly publications freely available via institutional or other electronic repositories was perceived as complicating matters. Aside from the subtleties of different versions that are allowed by publishers, as well as copyright restrictions that one would have to obey under the Green Open Access model, the golden counterpart had to offer some further advantages. As summarised by one of negotiators, "the finished work, the actual end-format of the article is the gold, the article on the website of the publisher; we don't want to go for second-best" [int_3:48]. Or, in the words of another interviewee, the librarians should "stop talk[ing] about problems at a local level or Green Open Access; there is room enough, there is space enough within the budgets of most publishers to get the prices down, to get more value – so why not?" [int_2:205].

As for the perspective of the publishers on the other side of the negotiation table, the idea of rolling out Open Access via the Green road seemingly didn't appear to be an improper suggestion. As recalled by another member of the VSNU negotiation team:

"Elsevier did tell us time after time that we are sort of calling in the desert now: we are so strange with our demand for Open Access, Gold Open Access, while so many other countries are going for Green, so why don't we go for Green. They really wanted us to buy Green; they offered us an automatic procedure for all the articles in Elsevier journals to be delivered to us in Green by them ... so we want immediate Open Access, we are not interested in Green, so we put it more or less aside, but they, there was a reason for them to want it, to push us in the Green [direction], and they were referring to Denmark, that they had a Green contract with [them], etc., etc. ... and that is something I am still trying to get my brains working on, why are they so interested in Green I think, it is because they see that with Green, they can more easily keep up their own subscription system" [int_4:333-345].

While mulling over potential reasons for Elsevier's negotiators to promote the Green road to Open Access as a possible solution, this interviewee further remembered some of the recurring arguments used by their counterparts: "they didn't stop [telling] us that countries like China and US are not at all interested in Gold, and in every round of negotiations they told us 'you have to accept that when you want to go for Gold, it's always more expensive', they did not stop telling us that" [int_4:351-352]. Representatives from Elsevier, in turn, compared the zeal for the Golden road to Open Access with "a little Gold rush" [int_p1:23] that was only pronounced in a small number of countries and national Open Access strategies at that time. From a global perspective, according to one of the interviewees, the Open Access world was painted in mixed colours, if not even more verdant:

"Gold Open Access is, you know, I think, is very much on the agenda in the minority of countries, I think, in the majority of countries, if they are advanced and have an Open Access policy, it's usually green, the US – mostly green, the federal funding agencies – green, Denmark – green, Southern Europe – green, China – green, so, you know, who is gold? The UK was gold, but now they are tracking back a bit on that, Sander Dekker was gold, and he is now colour-neutral, so ... the EU is also colour-neutral" [int_p1:18-24].

As can be seen from these interview excerpts, agreeing on the preferred model and its (colour) label for implementing the Dutch Open Access strategy wasn't a straightforward task. Yet this was not the only issue that negotiators from VSNU and Elsevier had to wrestle with. After all, their first and foremost job was to find a suitable arrangement on how to adjust the next Big Deal in order to comply with the targets set in Dekker's letter. In this respect, narrowing down the choices to be made was seen by the negotiators as a welcome focus that should somewhat simplify the already complicated matters. This also applied to considering only journal articles and no other publication types to be tackled at this time. Or, as described by another interviewee in view of the still ongoing negotiations with scientific publishers: "after ten years of talks about Open Access, if it is not going to be proved with articles, then probably it won't work in any fields at all" [int_10:156]. Therefore, it seemed as if the ultimate battle for Open Access was about to come.

8.2.2 Getting into and out of a "deadlock"

8.2.2.1 On framing and communicating strategically

The strategy chosen by VSNU to implement the targets set out by the Dekker letter built on quite a simple idea. Namely, through reaching dedicated agreements with major scientific publishers, switching the lion's share of research publications by Dutch authors to Open Access in due time was deemed possible. For this purpose, VSNU compiled a "Top 8" list of major publishers, with such names as Elsevier, Springer, and Sage at the very top, and started conducting negotiations with them on Big Deals with Open Access components (VSNU, 2016b, p. 5). After setting off in mid-2014, an agreement with Springer was reached within just a few months and was welcomed by state secretary Dekker himself:

“I’m happy to hear that Springer has taken its responsibility seriously and that the ambitions of both parties on open access have taken hold in the agreement. It is of tremendous importance that major publishing firms such as Springer recognise that open access represents the future of academic publishing. The agreement between the universities and Springer is therefore an important step in the right direction” (VSNU, 2014d, n.p.).

While the course of negotiations with Springer allowed the VSNU team to announce a quick success, conducting negotiations with the first publisher on this list proved to be rather difficult. As we shall see, this situation prompted the negotiators to choose more sophisticated and strategically wise communication strategies. Recalling the initial meetings, one of the interviewees explained that the VSNU-led delegation and Elsevier’s representatives promptly found themselves in incompatible positions:

“When we started negotiating in June 2014, ... after 15 minutes we almost said ‘well, we don’t have to talk to each other, we just split up now, because ... what you want to, what you ask from us, is so far from what we want to do’. So that’s where we started, that we didn’t even want to talk for 15 minutes with each other, because they wanted – I don’t even want to remember – I think, what they asked us, was about 30% more [price increase] over three years, thirty percent!” [int_4:271-273].

The situation seemed not to improve over the months that followed and several press releases were issued by VSNU announcing a “failed” state of negotiations with Elsevier (November 2014), negotiations reaching a “deadlock” (June 2015), and Dutch universities starting their Elsevier “boycott plan” (July 2015). When asked about this apparently notorious “deadlock” phase, one of the interviewees responded: “well... a deadlock is... *A deadlock is a framing*, because usually there [is] still communication between the two parties, who are in a deadlock, that was our case as well” [int_10:348, emphasis added]. As it turns out, communicating about the progress of negotiations formed a central part of a deliberately chosen strategy on the VSNU side in order to put collective pressure on Elsevier: “But that’s, of course, these press releases were *part of the game*, when we say to the outside world, that we are, that we think we are not reaching a deal, and we hoped that Elsevier would feel the pressure from different sides” [int_4:256-259, emphasis added]. The importance of keeping good public relations was thus attributed a crucial role: “Elsevier understood this very well, and that would harm their image and position, if they would permanently step away, they, of course, didn’t have an interest in that” [int_10:361].

Interestingly, the communication strategy during this “deadlock” phase was further enhanced by negotiators actively contacting newspapers and science journalists. As testified by one VSNU negotiator: “we like to be quoted in the newspapers about the [Open Access] case and about too-high profit margins in the publishing industry, by things like ‘compare it to this situation...’” [int_10:242]. This carefully considered strategy resulted in numerous reports on the current stage of negotiations as well as explanations about the importance of Open Access to research publications in more general terms. More particularly, as reported by the interviewee, some illustrative analogies from everyday-life were used, such as inviting the readers of these reports to

imagine themselves buying back their own home-grown crops in a supermarket: “So we say, we create it, we safeguard the quality, and then we have to sell it back. If you compare it with a supermarket, that would be the strangest situation, but in publishing we accept it. You see?” [int_10:247]. When asked about the motivation behind choosing these newspapers, the interviewee responded: “Well, because it's one of the easiest ways to reach your community directly ... it is easier to reach every researcher via newspaper on Saturday, than to create your own e-magazine or whatever and then try to bring it into universities, [the] first one is more effective” [int_10:256-258].

Indeed, this communication tactic seemed to work – or at least to help gain attention from high-level figures on the publisher’s side. As testified by one of the interviewees from Elsevier:

“VSNU was relatively quick to go to the press, so this is, of course, something that we want to avoid, because this is actually pointless, it doesn’t help, to the contrary, it rather leads to more confrontation; then, suddenly, our CEO comes around, then CEO at RELX [parent company] comes around, and they say ‘what the hell is that?’” [int_p2:686-691].

It appears that facing an open-ended negotiation stage with an uncertain outlook was reason enough for the VSNU team to justify some of the more mundane or creative communication methods mentioned above. Yet in case their huge arsenal of strategic weapons didn’t help bring about favourable outcomes, a possible *no-deal situation* had to be carefully considered. In the event that no agreement would be reached with Elsevier, the main issue discussed by VSNU team members at that time revolved around one question. Namely, which side would eventually cut off the negotiations. As remembered by one of the negotiators: “We tried to think over our responsibility, of what [a] permanent deadlock would be, and we were asking ourselves ‘*are we the ones that pull the plug?*’ That's what you do in such a situation, if you represent the interest of a larger community” [int_10:353-354, emphasis added]. I shall now turn to exploring these considerations in more detail.

8.2.2.2 Who will pull the plug? Considering a no-deal situation

During the phase of the negotiations when a no-deal situation still seemed to be a likely outcome, preparations to cope with its implications were undertaken. In this case, the subscription agreement with Elsevier wouldn’t be prolonged and users at Dutch universities would be denied access to new articles published in Elsevier’s journals. To estimate the extent of the potential damage that such a state of affairs would cause, VSNU conducted a survey among Dutch researchers. The survey had several purposes: on the one hand, the university association wanted to find out about the needs of researchers as well as explore potential alternative sources for accessing the newest publications. On the other hand, the negotiators were interested to know whether researchers would back the decision to not sign the deal. The results of the survey seemed to be rather comforting, especially those from the younger respondents. As explained by one of the VSNU delegates: “well, the young ones, they didn't see a problem at all, I mean they have

ResearchGate [an academic social network], so many different options, other options that I do not even know the existence of, they have no problem with it" [int_10:187].

Simultaneously, Dutch universities were busy preparing to avert a calamity, and especially "the staff of the libraries [were] getting very nervous about [it]" [int_3:234]. This arduous period of the negotiation process was also confirmed by a fellow negotiator: "but it is, it is stressing in a certain way, because we were all prepared, all the libraries were prepared for the black hole, you could say, that we were not going to renew by the 1st of January" [int_4:263-264]. According to another interviewee, the source of stress was primarily rooted in the lack of experience with such a situation. Whatever the conditions of the resulting Big Deal, it seemed, the no deal would have been even worse: "I'm happy with the fact that we still have an agreement with Elsevier, so I think the alternative of not having an agreement with Elsevier, we have no experience with that, but that would have been a nightmare" [int_3:277-279].

However, the objective to make progress towards Open Access goals appeared to remain firm:

"And that's actually what we said, if there is no deal with Open Access in some form, there will be no deal at all, which is a big risk for ourselves as well, because these are monopolists: they have content which you cannot get anywhere else. It will be a bad news for our researchers if they don't have access [to] Elsevier; that was a risk we were willing to take" [int_3:257-258].

Paradoxically, such a principled stance – which has also been described as one of the signature features of "the Dutch approach" by VSNU (2016b, p. 13) – seemed to contradict the findings of the above-mentioned survey, at least among some of its respondents. However, the projected worst case didn't come about and the then current Big Deal contract was extended for another year until the end of 2015. When interviewees were asked about the reasons for this turn in negotiations, they suggested that this step wasn't taken consciously. The course of events at this stage was sketched out by one of the VSNU negotiators in the following way:

"We had the fortune that we had a clause which automatically renewed the contract, if we had not cancelled it, I think, until before the 1st of September. We forgot all about that, because we took [away] all those automatic renewal clauses, all our licenses, a couple of years before that, because we didn't want that, we want our contracts for a specific period of time, and then, if we do nothing, then they automatically end. But somehow, nobody mentioned, nobody thought that we would have to do that with Elsevier as well, so we forgot about that, and all of sudden Elsevier said 'well, you can't cancel, because we already renewed the license', which was actually a blessing in disguise, because it gave us another year. And you see, we actually took the full two years to get Elsevier to do this; now we are going much faster with others, because they know more about what is expected of them and they see that others have signed up [for such] deals" [int_3:265-276].

Yet what happened in between these stages, when negotiations were swinging back and forth between a supposedly failed state and then resuming several times? What helped the negotiation teams find a way out of the crisis and construct a feasible solution for both sides? Apparently,

when forced to choose between pursuing ambitious initial plans, at the risk of coming away empty-handed, versus relenting to a well-founded and face-saving compromise, the latter seemed to be the lesser evil. After all, although VSNU had some leeway on how to implement the national Open Access targets, having no agreement with one of the biggest scientific publishing giants worldwide didn't appear tempting to most of negotiators. As another interviewee explains:

“So we said, okay, either we boycott completely, because we don't have the best thing yet, we don't have [a] complete 100% open access publishing environment with Elsevier, and we drop the ball, or we accept this as a first starter and see what happens. Ultimately, we did the last thing: we accepted it” [int_5:237-241].

As it will be demonstrated on the following pages, the agreement between VSNU and Elsevier emerged after an intense brainstorming session organised between members of both teams. Here, after the teams repeatedly reached an impasse in negotiations, a number of possible alternative approaches were considered. One of the ideas that was put on the table on that heat-plagued day in the Netherlands happened to be convincing enough to yield broad support – even though both sides had to deviate from their initial mandates. We shall now turn our attention to the origins of this alternative proposal that provided a way out of the long-standing struggle in the final stages of the VSNU-Elsevier negotiations and implicitly became the central pillar of the resulting agreement for 2016–2018.

8.2.2.3 The Dutch top sectors approach: This way out

As it turned out, showing the way out of the stalled negotiations at that time was enabled by an experimental role-play. Here, another *game* played by the negotiation teams – beyond their deliberate public relations strategies – comes to light. Hereafter, I summarise the course of events on one summer day that led to a breakthrough, as reported by one of the interviewed participants on the publisher's side:

On one of the hot days in late summer of 2015, with a non-typical by Dutch standards outside temperature above 30 degrees Celsius, a marathon meeting between the VSNU and Elsevier teams took place in The Hague. After the negotiations had stalled over [the] past months, a different negotiation tactic was put forward. Named “the third alternative”⁸¹ after one of the bestselling guidebooks, the proposition was the following: instead of making compromises on each side of the negotiation table and meeting half-way, which would leave all involved parties with an unsatisfactory outcome, a totally new approach should be taken, hence, the third alternative. The key to this problem-solving method lies in swapping the roles for a moment and exchanging the views between the opposite sides. That is, each of the negotiating parties should slip into their counterpart's shoes and speak out what they believe that the opposite side think of them. In this way, false assumptions should be discovered and debunked, and, most importantly, learning to understand and respect each others' views and principles facilitated. As a result, a fresh perspective on the situation can be taken and a mutually beneficial solution shall be generated.

81 See https://en.wikipedia.org/wiki/The_3rd_Alternative [last checked on 26/07/2021].

As further explained by this interviewee who represented Elsevier, “the art of the third alternative lies in an imperative to convince my counterparts that they need to completely deviate from their mandate – and I will do the same, by the way” [int_p2:601]. This precondition, according to this interviewee, had to be fulfilled on both sides. However, achieving a breakthrough in VSNU-Elsevier negotiations appeared to entail a certain trade-off. Namely, most lower-level team members had to be excluded from the final talks. As experienced by one of VSNU negotiators:

“The last stages of the negotiations [were] very much ... shielded from most persons from the negotiation team, I think, only *** and *** actually knew what was going on, possibly the president of the VSNU as well ... but we, simple people from the negotiating [team], [didn't know] what [was] actually being discussed”, leaving only the ones “most willing to talk, to talk again” on both sides of the negotiation table [int_3:236-241].

Although some of the high-level negotiators on the VSNU side participating in this *role play* were said to be not particularly delighted with this exercise, the negotiations between both parties were reported to have quickly taken on a constructive shape afterwards. Or, in the words of one of the Elsevier negotiators, only then could the actual negotiations take place:

“Because usually, customers from academic and government accounts have a mandate that we need to comply with, but this is not a negotiation; they are asking us to send a new proposal, but this proposing is always limited to reducing the price once again This is nonsense, this is not a negotiation; I want to negotiate, we want to talk to each other. This makes negotiations in these academic and government settings extremely difficult. They cannot negotiate, or, I should put it differently, they have a different understanding of a negotiation. For them, a negotiation is ‘I will tell you what I want and you will make me a suitable offer, and as long as this offer doesn't suit, we will not agree on it’. But this is not a negotiation, both sides need to listen actively, they need to talk to each other, evaluate options, otherwise they will soon reach an impasse where everyone starts sulking” [int_p2:668-683].

So what was *the third alternative* between switching all Dutch scientific publications to immediate Open Access within the regular budget, as initially demanded by VSNU negotiators, and translating this requirement into a substantial price increase for the next Big Deal, as proposed by the negotiating team at Elsevier in response? As reported in the interviews, the key for a way out from the notorious “deadlock” situation was found by focusing on a number of research domains prioritised by the Dutch government. These so-called “top sectors” were said to not only help narrow down the focus of both negotiating parties in a productive way, but also to design a gradual transition to full Open Access with a predictable and confident pace. As another interviewee on the Elsevier side recalled:

“In the summer of the year that we signed an agreement, we had a brainstorm session, and there, we essentially, together, explored all the different ways to go, yeah, to achieve Gold Open Access and [there were] many things we put on the table [that] VSNU was not so happy about, but they did like the domain approach, and then, I think, in the end, we decided to choose domains by certain criteria, and they were

domains where the Dutch are good at, where Dutch researchers are good at, where Elsevier journals are very good at, and where also, I would say, that there is a readiness for Open Access” [int_p1:83-87].

That is, the terms of the contract between VSNU and Elsevier for 2016–2018 emerged from one of the ideas that was put forward during this brainstorming exercise in the summer of the breakthrough. As explained by the same interviewee, after negotiations moving back and forth several times, a list of journals in Elsevier’s portfolio that were deemed suitable to participate in the pilot Open Access agreement under this contract were compiled together with VSNU’s representatives, and final specificities were then quickly defined. This selection was performed with the above-mentioned criteria in mind, paying particular attention to important research domains and their estimated willingness to adopt Open Access models. Through prioritising publications from these domains, all related scientific articles could be rapidly switched to Open Access: “then we decided, in those sectors, all articles would be Open Access, so 100% Open Access in those sectors” [int_p1:101]. The overall share of openly accessible articles among all Dutch publications, in turn, was expected to comprise 10% in year one, and to increase to 20% in year two and to 30% in year three over the upcoming contract period. In the end, the resulting agreement has been described as one that was “loosely aligned with the top sector approach which is supported by both [the] Ministry of Economic Affairs and the Ministry of Science and Education [OCW]” [int_p1:100].

Apparently, the use of national interests and research priorities as an alternative point of departure in the difficult negotiations proved to be capable of mobilising common interests and finding a solution after a series of struggles. But what exactly are these *top sectors*? The information box below offers a short explanation.

The Dutch top sector approach

“In 2010, with the onset of Cabinet Rutte II, the Dutch Ministry of Economic Affairs and the Ministry of Education, Culture and Science launched their Enterprise Policy. The primary goal of this ongoing strategy is to strengthen the competi[tiv]eness of the Dutch economy. Apart from generic measures like reduction of regulatory burdens, SME funding and (existing) major R&D tax schemes, the Enterprise Policy also included the newly conceived Topsector approach. This policy approach is commonly seen as the successor of the Innovation Program approach (2006–2010). Whereas the latter was selective because of an industry-specific policy strategy (i.e. the 10 key domains were appointed top-down), the Topsector approach started with an open call. Over the course of 2011, firms and research institutes had the opportunity to unite themselves in so-called topteam. A total of nine topteam were finally selected for becoming a Topsector. Later, also three cross-over domains were added” (Janssen, 2019, pp. 84–85).

Various indicators related to the selected top sectors are regularly monitored by the Dutch office for statistics (Centraal Bureau voor de Statistiek, CBS). As one can learn from the CBS’ reports, the nine sectors designated through this process cover the following research and business branches:

- *agriculture & food* – with a focus on the primary production of food and its processing in the food industry;
- *chemistry* – consisting of petroleum processing, the chemical industry, and the rubber and plastics industry;
- *creative industry* – including arts, cultural heritage, media and the entertainment industry, and creative professional services (such as those offered by fashion workers or architects);
- *energy* – with companies in conventional energy production and supply, as well as those that are active in developing sustainable energy sources and related activities;
- *life sciences & health* – with subdomains that include pharmacy, medical instruments, and research & development, particularly in the areas of biotechnology and nutrition;
- *logistics* – which includes transportation of goods, warehousing, and other supporting businesses;
- *high-tech systems & materials* – which is mostly focused on the metal industry and the mechanical engineering of machines and appliances;
- *horticulture* – with primary production and supporting services around the cultivation of seeds, vegetables, and decorative plants;
- and the last top sector, *water* – which includes the maritime industry such as shipbuilding as well technologies for supplying drinking water and maintaining delta areas in the Netherlands (CBS, 2018, pp. 11–34).

The last top sector appeared to be particularly important in the Dutch context. As explained during the interview with one of Elsevier’s representatives:

“So a good example is water management. We as a country, [I mean], look out of window, we are good at water management, there is the very managing of water as we speak ... we are also very good at doing research in water management, and Elsevier has the leading journals in water management, so very high quality journals, and the awareness of Open Access is also okay in water management” [int_p1:92-93].

The resulting selection of applicable journals in this area included such titles as *Advances in Water Resources*, *Agricultural Water Management*, *Journal of Water Process Engineering*, *Utilities Policy*, *Water Research*, *Water Resources and Economics*, *Water Resources and Rural Development*, and *Resources, Conservation and Recycling* for the first contract year of 2016.⁸² That means that researchers affiliated with Dutch universities could choose to publish their articles in Open Access at no extra fee when submitting their manuscripts to those journals. Especially in the case of the water management sector, the selection of these particular domains and their corresponding scientific journals in the agreement with VSNU was considered by the interviewees at Elsevier to be “very specific for the Netherlands” [int_p1:204].

82 A complete list of applicable journals in the VSNU-Elsevier agreement and the start date for when a given journal title was included in this list is available online at: https://www.elsevier.com/data/assets/pdf_file/0004/155425/VSNU-NL_applicable-journals.pdf [last checked on 26/07/2021].

As Janssen (2019, p. 85) further explains, the top sector approach can be described as a policy mix that entails “a varied package of agenda-setting and networking interventions” designed to incentivise innovations in selected areas and steer techno-economic development towards new promising trajectories (such as energy transition from fossil fuels to renewable sources). Because of this steering function, this kind of “transformative policy” is usually characterised as being selective (rather than supporting a whole spectrum of R&D activities), process-oriented (for continuously adapting relevant policies), and multi-instrumental. Furthermore, in the case of the Dutch top sectors, “policy makers, science representatives and industry captains” (ibid., p. 2) of these sectors meet together to determine which instruments should be implemented to stimulate technology development and promising economic activities. This might also include such measures as launching new public–private partnerships or adapting education curricula (see also Janssen, 2016).

Since implementing the idea of top sectors in the midst of the financial crisis, according to Janssen, this approach has become “the core of the current national research and innovation strategy in the Netherlands” (Janssen & Den Hertog, 2016, cited in Janssen, 2018, p. 79). Although the businesses and other actors in selected top sectors do not receive direct subsidies, “a substantial share of funding for fundamental research got redirected exclusively to Topsector topics” (Janssen, 2018, p. 85), e.g., through the allocation of grants via the Dutch Research Council NWO. As a result, research activities at non-university applied research centres in particular were shifted to address topics relevant to top sectors. Private firms and businesses were also said to “benefit from the fact that Topsectors are used to boost the profiling of the Dutch scientific and economic strengths, which helps to attract funding from European R&I programs as well as international trade” (ibid.).

It is then hardly surprising that focusing on the research domains in these top sectors was chosen as a way out of the struggle between Elsevier and VSNU. After all, if no blanket switch from the subscription model to Open Access seemed to be possible, paying particular attention to the priority areas of the Dutch government must have been a justifiable compromise and a workable solution that would please at least some politicians behind VSNU’s mandate. Yet, the initial selection of research fields and corresponding journals in Elsevier’s portfolio for the first year of the new agreement appeared to leave some crucial interest groups behind. As recalled by one of the interviewees on the VSNU side:

“What we did was [look] at the fields that, where people already published in Open Access, and fields with highest impact, so we made a combination of the fields, and it took some time before we were ready to find really the best selection, and then [Elsevier] made a selection, and our medical faculties, they said ‘no, that’s not representative; we should have more medical articles, because medical is 60% of what we publish in Elsevier’, so that’s what we did, we did [add] more medical [journals]” [int_4:302-306].

That is, after consulting with university boards, the list of applicable journals had to be adjusted to reflect current publishing patterns and include more journals in the medical sciences. In this way, 141 journal titles were selected to participate in the Open Access pilot agreement in the first year of

the next Big Deal, starting in 2016. For the following years, the list of journals was to be revised and extended with further titles – resulting in 276 and 398 journals offering APC-free Open Access publishing options to eligible researchers in 2017 and 2018, respectively (Elsevier, 2016, 2017, 2018).

However, while the top sectors approach played a crucial role in resolving the deadlock situation between both negotiation teams, it is questionable whether selected domains with an outspoken orientation to economically viable knowledge applications and market formation were truly relevant for academic researchers at the 14 Dutch universities represented by VSNU. This issue can be illustrated by the fact that the research activities within top sectors are jointly performed in the so-called “Topconsortia for Knowledge and Innovation (TKIs)”, for which, among other criteria, involvement of small and medium enterprises is required (Janssen, 2018, p. 86). Therefore, the actual research domains in top sectors are largely served by non-university applied research centres and universities of applied sciences (ibid.). Paradoxically then, although it can be argued that sharing results from applied research more openly could bring the biggest economic and societal benefits, as envisioned in Dekker’s letter, while also putting the Dutch top sectors approach at the core, applied research institutions were largely excluded from the resulting VSNU-Elsevier agreement (see also sub-chapter 8.3 *De-scripting the VSNU-Elsevier deal* for more details).

It bears mentioning that drawing boundaries between research domains and types of institutions, as well as defining inclusion and exclusion criteria in the VSNU-Elsevier negotiations, was not restricted to the national border itself. Some of the proposed ideas that were put on the table by Elsevier negotiators were also designed as “European” Open Access models. By taking an example of visa-free travel regulations within the Schengen area, a similar solution was proposed. As explained by one of the negotiators on the Elsevier side:

“So during the negotiations, we also introduced a Schengen model ... [this] means that within this group of European countries, all the Europeans will have access to all the European articles, so it’s like Open Access within Schengen, but then, if you come from out of Schengen, you won’t have access, you need the subscription model ... and then, you know, you could start, say, only in the Netherlands, and then everybody in the Netherlands will have access to all Dutch articles. It’s a start, but then, it’s 2% of the world [scientific publications output], right, and then we do Benelux, and then we do again, maybe some other European countries involved, and then, in the end, you know, you will have 30%, and it’s Gold Open Access” [int_p1:330-337].

The proposed Schengen model was considered by publishers to be a sensible solution that would support Open Access transformation in a flexible way and allow the group of participating countries to be enlarged, or allow a country to leave the club, “like Brexit” [int_p1:340].⁸³ However,

83 The idea to explore “alternative access models tailored to geographical needs and expectations” was taken up and promoted by Elsevier once again some time later. For instance, in a short article in September 2017, Gemma Hersh (Elsevier’s VP of Open Science), suggested the following: “[Given that] no international consensus exists that any single open access model is best ... one possible first step for Europe to explore would be to enable European articles to be available gold open access within Europe and green open access outside of Europe. In this way, Europe could move forward to achieve its goals without waiting for international consensus. And if this approach could be shown to deliver benefits to

while representatives at Elsevier came up with a full-blown proposal “with prices and everything” [int_p1:341], their counterparts were not interested in exploring it further. As commented by the same interviewee, and maybe as a return to the core principle of Open Access as cost-free access to scholarly literature for readers worldwide, this proposal was rejected by VSNU negotiators: “but if you are religious about Open Access, you don’t like that idea” [int_p1:338].

Beyond comparisons of strong (ideological) convictions about Open Access with religious feelings, the lengthy negotiation process between representatives of the Dutch university association VSNU and the scientific publishing company Elsevier were said to be richly marked with emotional moments. Indeed, discussing emotions and personal involvement during the negotiation process turned out to become the biggest code group in my coding of the transcripts of interviews with members of both negotiation teams (see also chapter 3. *Materials and methods*). Here, not only were the character traits of Dutch national identity and reasons to be proud of certain research and economic domains simultaneously negotiated, but the strong military rhetoric also employed by some interviewees suggests a highly charged battle atmosphere over the course of negotiations. Therefore, in the next sub-chapter, I aim to capture these aspects and convey the prevailing mood among negotiation team members at that time. After gathering reactions about the allegedly unique Dutch approach, as well as specific challenges of conducting negotiations with this particular publisher, I turned to a more intimate dimension and asked delegates on both sides about their personal views and satisfaction with the outcome of negotiations and the resulting agreement.

8.2.3 Emotions and personal involvements

8.2.3.1 On Dutch unique(ness) claims

One of the topics addressed during interviews in this empirical case study concerned the question of whether the negotiations between VSNU and Elsevier contained something *very Dutch*. Given the fact that this publisher has its headquarters in the country’s capital – as well as the company’s roots going back to a 19th century Dutch publishing house – one of the assumptions was that this special domestically anchored position might also be reflected in the negotiation process itself. Moreover, the main ingredient of “the Dutch approach”, as promoted by VSNU (2016b), was described as the unique bargaining model wherein selected delegates were chosen to negotiate with major scientific publishers on behalf of all academic institutions in the Netherlands. This, in turn, was said to be largely facilitated by the relatively small size of the country and just some dozen universities united under the roof of VSNU, making it possible for university managers to meet in person regularly and to coordinate mutual actions in a direct and straightforward way.

Europe, then it would create a persuasive evidence base from which to encourage other regions to follow Europe’s lead. At the same time, such a regional approach would have the advantage of enabling different parts of the world to move at their own pace and in line with their own needs”. Retrieved from <https://www.elsevier.com/connect/working-towards-a-transition-to-open-access> [last checked on 01/08/2021].

When asked about the claims of a unique Dutch approach, publishers were a bit more sceptical, though. One interviewee compared different kinds of agreements that Elsevier had in place with other countries to come to a conclusion about a self-projected image rather than any truly unique features:

“I think this is all marketing of the VSNU, I really don’t see such anything very unique here, and if I compare as globally, the fact that university presidents were involved, we had another countries, some kind of agreements, you know, with Open Access and subscriptions [already] ... Discussion about Gold Open Access is also not unique, right, that happened in the UK much earlier. So no, I think, that’s how the Dutch universities like to view themselves, as unique guides [who] guide others on their mission, but I would say that’s more propaganda than reality” [int_p1:210-215].

My probing further into potential logistical advantages with a view towards the country size and its interconnectedness resulted in a renewed objection from the interviewee. Once again, the Elsevier representative replied:

“Yeah, but... [sighs] if you negotiate in the UK, everyone is in London, if you negotiate in Paris, I’m sorry, in France, everyone is in Paris, so, you know, I mean, Germany is a good example, where the things are distributed and you have a federal state, so you always have differences between Berlin and the Bundesländer, so that’s a counter-example [laughing]” [int_p1:218-220].

From the perspective of the Elsevier representatives, aligning the resulting agreement towards the Dutch top sector approach, as described above, as well as selecting applicable journals in related scientific domains, was the only feature that could be seen as specific to these negotiations. In contrast, when the same question was asked of VSNU negotiators, opinions were rather divided. At first sight, no strong “typically Dutch” distinctions were usually identified. But on second thought, many interviewees offered a handful of possible clues. For example, with a reference to ongoing discussions about whether to cancel the next Big Deal with Elsevier, some of the participants involved reportedly warned that it would be “very *un-Dutch* to act this way” [int_10:205, emphasis added]. Upon a request to provide more details, that interviewee continued:

“I don't know if there is a good international translation, but we are proud of our polder model ... Polder refers to a typical Dutch landscape, and the way that it's used is to sort of articulate, a specific that politics, social groups, employers, all different groups, representative groups in the Netherlands, solve their problems; you have countries, where only this happens – where, you know, the government reveals another idea, then you immediately have strikes all over the country. Such a thing will not happen in the Netherlands; it used to, until the sixties, but then we introduced the polder model, which is a way of communicating, of solving the problems, bring[ing] them all together, find[ing] in the middle a solution. It's a more soft approach, so that's what basically makes our culture today. Most of the researchers, they do not solve a problem by taking a position and fighting till the end – it's not a strike, no way, I mean, it's the last resort” [int_10:207-215].

Such a pragmatic, consensus-oriented approach in decision and policy-making, where extreme positions are only taken in exceptional cases, was said to characterise the negotiation process between VSNU and Elsevier as well. Similar to the functioning of dikes that enclose tracts of land and keep high floods at bay, *the polder model* is often described as being based on the foundational principle that all actors can achieve more together if they cooperate towards a mutual goal.⁸⁴ As confirmed by another colleague, “I think, one of the most important things in our model ... is that all the boards of the universities stick together” [int_4:195]. That is, the fact that VSNU was able to mobilise board members at all Dutch research universities and to speak in one voice in the course of Open Access negotiations, at least officially, was repeatedly named as one of the main success factors of the Dutch approach.

Despite these qualities being described as part of the national character, not all team members on the VSNU side seemed to be willing to proceed with a storybook-like sense of tact or to dampen their own enthusiasm about these negotiations. From the perspective of one of the Elsevier interviewees, the lead negotiator at VSNU at that time, Gerard Meijer, was very passionate or even *fanatical* about the idea of Open Access. Here, his aim was perceived not just as that of achieving better conditions for publications from the Netherlands, but also of fundamentally changing the business model of the whole publishing industry. As explained by an Elsevier interviewee:

“Gerard Meijer has been travelling around the world prominently and did not restrain from disclosing almost every detail about our negotiations, although there was a very clear agreement about what we are allowed to talk to and what not, but he was so bullish, he said even, he is looking toward a sequel in court with Elsevier, but he is going to tell this and that any way” [int_p2:837-841].

One meeting in particular revealed the emotional dimension of the negotiations between VSNU and Elsevier. During this encounter, representatives from Elsevier were said to be attacked with words and accused of lying by the lead negotiator. In reaction to their objection, the team of publishers was offered a short salutation instead of an apology:

“... for which I responded, this is not a good ground for continuing this conversation. I will break this up now, I don't have to acquiesce in this, this never happened to me before, and the reply was just – ‘Welcome to the Netherlands!’” [int_p2:928-933].

Interestingly enough, the delegation at Elsevier included some Dutch members as well, who were said to immediately “leap from their seats” and object to this salutation. In retrospect, this interviewee at Elsevier considered this situation as a potential strategy on the VSNU side for attempting to provoke their counterparts. Nevertheless, some of the team members among the

84 In an essay titled “The Dutch Polder Model in science and research”, José van Dijck and Wim van Saarloos (2017) of the KNAW describe “interconnectedness, collaboration, trust, and interwoven research and education among the quintessentially Dutch factors that paved the way to the success” in the research achievements of Dutch researchers, universities, and institutes that “allowed the Netherlands to punch above its weight”. See <https://www.knaw.nl/en/news/publications/the-dutch-polder-model-in-science-and-research> [last checked on 28/06/2021]. See also Van der Meulen (2010), who refers to this characteristic in Dutch science policy-making as a mediation approach.

university delegation seemed to feel uncomfortable with such a confrontation as well. As recounted by this interviewee:

“This was super emotional, and I think that many people on the Dutch side didn't feel well with that ... especially librarians, that was certainly low down for them, the way we [Elsevier] were treated, I am sure for this, you could recognise it by a blush of shame on their faces, although they were not actively involved in the negotiation at that moment, but they were sitting there at the table, watching the things going, they didn't like it, but they couldn't say anything” [int_p2:910-918].

Although some of the VSNU negotiation team members appeared to feel ashamed of such emotional moments, according to the Elsevier interviewee, others seemed to be rather pleasantly surprised when noticing a great deal of confusion on the publisher's side for the first time in their negotiation careers. As explained by one of the universities' negotiators, the main advantage of having high-level managers lead the negotiation teams at VSNU was that “they can get straight to business, they can separate the nonsense from the things that make sense, and also, what is important, they do not have an automatic respect for Elsevier” [int_3:144-145]. Beyond providing a *refreshing* experience, according to this VSNU interviewee, “it was good to see that at some point, their [Elsevier's] line of defence was broken, they were totally confused about what they were hearing” [int_3:170].

Another area where a pioneering ambition was marked in the Dutch Open Access story goes back to state secretary Dekker's letter to the Dutch parliament of late 2013. As envisioned in this national Open Access transition plan, the Netherlands was expected to become a trailblazer and a test case for other countries to follow suit when initiating similar negotiations (OCW, 2014). Soon after announcing his “ambitious targets”, Dekker's personal engagement in this matter culminated in designating it a priority area for the Dutch Presidency of the Council of the European Union in the first half-year of 2016 (Amsterdam Call for Action, 2016). This was followed by a period of intense political mobilisation and a number of joint political declarations (see also chapter 7. *Zooming in on the micro-dynamics of the letter*). Given this high-level of attention, “clear political support” was further identified by VSNU (2016, p. 12) as one of the four success factors of “the Dutch approach”.

The importance ascribed to the backing from politicians like Sander Dekker and his European counterparts was also addressed in the interviews with negotiators in this empirical case study. The question asked on both sides was whether putting Open Access in the spotlight during the Dutch Presidency of the Council had played any role in VSNU and Elsevier reaching an agreement in late 2015. Almost unanimously, though, the opinion among members of both negotiation teams was “no”. Yet being able to refer to concurring international developments was still seen as having carried considerable weight, which helped to put more pressure on major scientific publishers, according to VSNU negotiators. Since adjusting the conventional Big Deals with Open Access publishing components was a novelty at this scale, this job required a great deal of persuasion. As explained by one of the interviewed VSNU team members:

“I don’t know, not in the negotiations, of course, we mentioned that [the Dutch Presidency of the Council] and Sander Dekker [had] put it on the agenda, but it’s very hard to determine whether it played a role ... in my experience, for some publishers it took some time until they realised [that] we actually mean what we say ... it isn’t just a joke, it isn’t just these crazy Dutch, and perhaps, that may have played a role, or especially, if you know how it works with marketing, if we were the only ones giving this message, that would be not so good, given the fact that you can relate to what the government is doing, what everybody else is doing, that puts them [publishers] back to the table and makes them realise, this is actually what they want, so that worked, yeah” [int_3:216-234].

In contrast, the publishers were more sceptical in this respect as well. The fact that Open Access was made a strategic priority of the Dutch presidential term at the European Council was described by them as an example of politicians making use of a *fashionable topic* that had beneficial effects for their political careers, rather than a matter of international importance. As commented by one of the Elsevier interviewees, demands for universal access to all publicly funded research results is “a trendy topic because one can easily gain acceptance” as long as it is discussed at a high-level but not in details – and, thus, it can be regarded as “a somewhat populist” argument [int_p2:294]. Similarly, another publisher replied:

“I think, the politicians, they wanted to have deals in their pockets, so they could show *what they think is a success*, on our side, it makes no difference, I mean, we are a global company, we have, you know, we deal with different governments all over the world that sometimes change, but we have, we came to an agreement before the presidency started, yeah ... I guess that put pressure on the other side, not on us” [int_p1:53-56; emphasis added].

An open question remained, however, regarding whether the alleged success factors of the Dutch approach (VSNU, 2016b) and the achievements of the VSNU delegation were transferable to other countries. In the end, what was claimed to be unique to the Dutch Open Access negotiations still had to be scaled up and applied further from one country to another. In this way, at least a symbolic unity vis-à-vis major scientific publishers at the EU level, if not world-wide, was supposed to be built.

And still, although having grown into a “global company”, as presented in the quote above, the role of Elsevier's home-base in the Netherlands could not be ignored in these negotiations. As one of its representatives put it, straight to the point:

“We [Elsevier] are a big employer here in Holland. We contribute significantly to the Dutch tax income and we have calculated as well what percentage of the Dutch research budget is funded with our money” [int_p2:976-979].

Therefore, contrary to some assumptions, conducting negotiations between Dutch universities and a Dutch-born scientific publishing giant didn’t promise to be an easy home game. Although the role of Elsevier’s principal office and tax residence in the Netherlands appeared as a minor remark only in the interviews with publishers, it was addressed more actively in conversations with other

negotiators on the VSNU side. I now turn to this delicate matter and take a closer look at the challenges and specifics of VSNU’s negotiations on subscription packages and Open Access with Elsevier.

8.2.3.2 On the specifics of negotiating with Elsevier

A notable feature in the negotiations between the VSNU and Elsevier teams was the strained history of relationships with this particular publisher (see also sub-chapter 1.2 *VSNU-Elsevier negotiations as an exemplary empirical case*). Furthermore, in order to better understand the challenges faced by VSNU negotiators when meeting at the table with representatives from Elsevier, it is important to keep the magnitude of this now-global publishing company in mind. Recall that the strategy chosen by VSNU to implement the goals set out by the Dekker letter was to target the top 8 scientific publishers (VSNU, 2016b). The first name on this list, Elsevier, was not only the biggest of all in terms of the number of scientific journals in its portfolio but also represented the greatest cost in annual spending on scholarly literature at universities in the Netherlands. *Figure 5* illustrates Elsevier’s position in relation to its competitors and the considerable costs to Dutch universities.⁸⁵

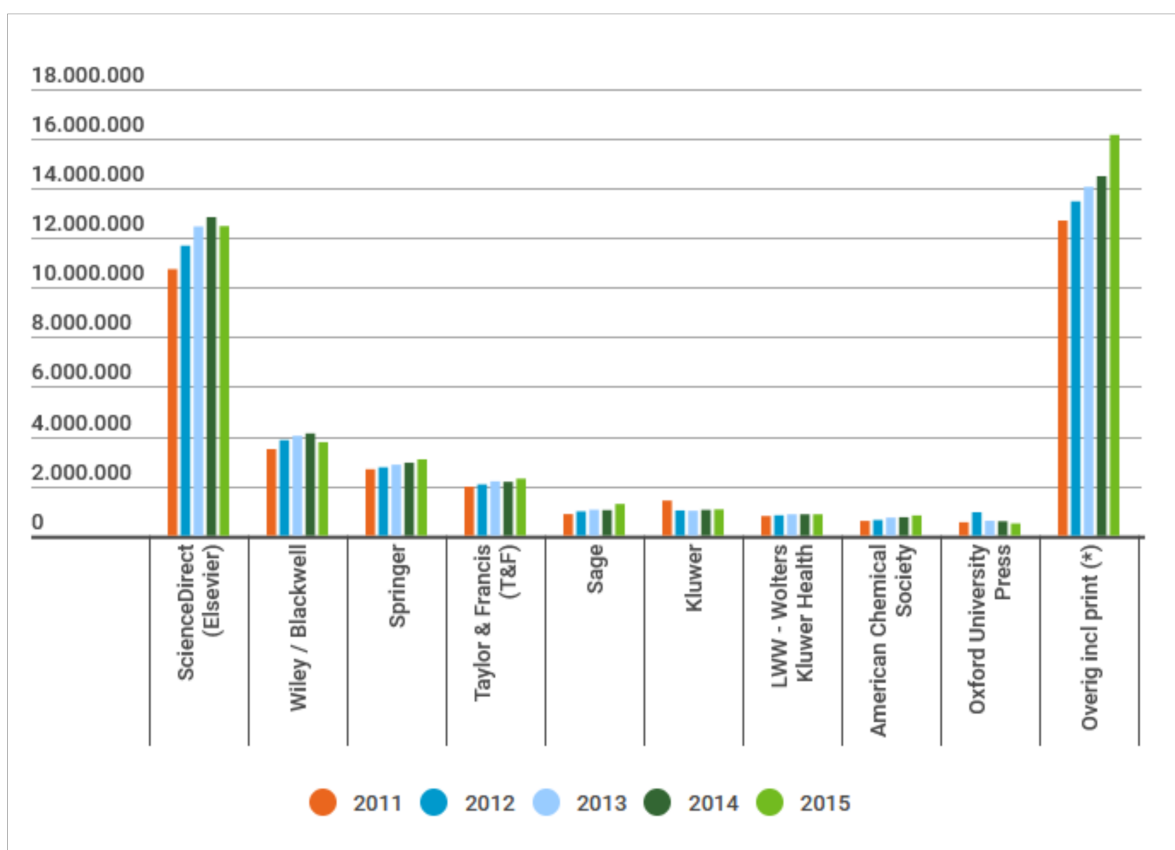


Figure 5: Costs incurred by Dutch universities for books and journals per publisher in 2011–2015 (VSNU, n.d.)

85 Image source: https://vsnu.nl/en_GB/cost-of-publication [last checked on 04/07/2021].

As explained on VSNU's homepage, due to non-disclosure agreements in the contracts with publishers, financial details on universities' expenditure on scholarly literature were usually kept confidential. Yet in April and September of 2016, two legal requests to disclose this information were submitted to Dutch universities on the basis of the Government Information (Public Access) Act (*Wet Openbaarheid Bestuur (WOB)*, in Dutch). In the words of VSNU, this initial WOB request meant that "for the first time, it was possible to gain insight into the size of the market for scientific publications among universities in the Netherlands".⁸⁶ In response to this WOB request, financial records on the total amount of the budget spent on subscriptions to academic journals and the purchase of academic books were collected from 13 research universities in the Netherlands and then made public by VSNU.

What catches one's eye immediately in the resulting data compilation is the prominent first place occupied by Elsevier. As can be seen from *Figure 5*, accessing journals owned by this publisher constituted by far the most expensive subscription package in the annual scholarly literature budget at Dutch universities. For instance, in 2015, the year that the VSNU-Elsevier agreement for 2016–2018 was concluded, the surveyed universities collectively paid about 12.5 million euros to Elsevier, as compared to roughly 3.8 million euros to Wiley/Blackwell (no. 2) and some 3 million euros to Springer (no. 3). Given this massive scale, getting high-level university managers on board was regarded as the most decisive change in the novel negotiation approach introduced by VSNU. This point was repeatedly stressed by the VSNU negotiators "because that's the only level they [Elsevier] would listen to" [int_3:121].

As confirmed during the interviews with VSNU negotiators, especially modifying the composition of their negotiation team was regarded by most of its members as an absolute necessity. In view of anticipated difficulties in demanding concessions from this multi-national publishing corporation, this difference made in "the Dutch approach" (VSNU, 2016b) seemed to be even more paramount. Since "we [the Netherlands] were the first country to negotiate at all with Elsevier on this" [int_12:233], the need to strengthen the bargaining power appeared patently obvious. Yet attempting to stand on an equal footing vis-à-vis such a notorious opponent was not the only challenge that the team members at VSNU were reportedly confronted with. The negotiations were also said to be characterised by some even more unexpected difficulties and tribulations, which I shall now explore in more detail.

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One arduous task in these negotiations, as reported by VSNU negotiators, consisted of *agreeing on facts and figures*. Similarly to obtaining an overview of the costs incurred by Dutch universities, the exact statistics about the usage of individual sources and other related numbers were hitherto hardly known. Having high-level university managers on board was especially appreciated by other members of the VSNU negotiation team to tackle this issue as well. Referring to the lead

86 VSNU (n.d.). Overview of costs incurred by universities for books and journals by publisher. Retrieved from https://vsnu.nl/en_GB/cost-of-publication [last checked on 04/07/2021].

negotiator appointed by VSNU, one of the interviewees admired this new colleague for his evidence-based approach:

“He was very good, but he was very academic, and he said, he just worked for figures, he said, we have these figures, do they match with your idea that these are right. There were some discussions, and then they find that yes, these figures are right, and then [the] next set of figures, and there were figures from our side, from Elsevier’s side, and we try to agree on the figures that we have used, that all the assumptions were based on” [int_4:216-220].

Here, the importance of having a well-founded foundation to conduct negotiations with Elsevier was stressed even more. As the interviewee continued:

“... and a company like Elsevier – that’s what we are talking about now – *you have to fight them on their own territory*, and that means, they know better than you the figures, they know figures about our usage, about, they are just good, they are very very good in their statistics, and what you should try to do, is be one step ahead of them, on your statistics and the things that you know about your own institutes, but also about them” [int_4:227-230; emphasis added].

That is, the art and the means of this warfare between both parties were largely determined by Elsevier’s working methods. As can be seen from these interview quotes, members of the VSNU negotiation team were well aware of their counterpart’s extensive knowledge of relevant usage statistics and its superiority in interpreting these figures. Building on this insight, the VSNU negotiators then applied the same method: armed with their own figures, they went to the meetings with Elsevier representatives, trying to convince the publishers of the truth content and faithful interpretation of the numbers they had gathered. In this way, by adopting the same quantitative approach, the VSNU delegation attempted to stand on a level playing field with Elsevier’s negotiators – even if the rules of this game were essentially defined by the latter.

Recalling the course of events and the tactics used at this negotiating (or maybe rather battling) table, an interviewee from the VSNU team further explained:

“And that’s what [the lead negotiator] did, we compiled figures from our sides, then we compiled figures, as far as we could see, about Elsevier, and we started to compare, do these metrics, ideas [match], *so they could not overrule us anymore* ... and that’s what happens often, that during conversations and negotiations they come with figures or they come with ideas or theories from their sights, and you are ... sort of overwhelmed, and that’s what you should not be, you should state very straight, if they come with [their own] ideas ‘now prove it to me, show it to me’ and, you know, maybe that is in some way Dutch, to approach it that way, but everybody can do that” [int_4:231-237; emphasis added].

The advice given in the interview quotation above – to do one’s homework and to prepare well for tough negotiations – was also shared by other members of the VSNU team. Thinking of library consortia elsewhere, which might be interested in replicating the Dutch experience and conducting negotiations of the same kind, another interviewee issued a similar recommendation. In view of

the experienced challenges, anyone facing a potential confrontation with Elsevier's representatives should be aware of dealing with "you can imagine, probably the best-trained sales staff they have, they have really professional [people], they are really good at what they do" [int_3:160-161].

As it emerges, excelling at statistics and charts was not just a purely "methodological" issue in these negotiations. Rather, the battle over Open Access to scientific publications has become a *battle of figures* that were deemed to represent the usage of those publications in the Netherlands. Here, the supposedly indisputable "facts" first had to be produced – i.e. they had to be collected, compiled, processed, and visualised in order to become visible and comprehensible to negotiators on both sides of the table. Afterwards, these figures could be compared, disputed, or, with some luck, established against an alternative set of figures. For this purpose, the somewhat vague idea of access to scholarly knowledge had to be translated into quantitative indicators and expressed in terms of numbers of journals, articles, institutions, authorships, students, clicks, views, and downloads. When both parties agreed on these basic numbers, a corresponding price tag still had to be found in the following step. Therefore, the party with more fireproof and elaborate figures, and the most convincing and credible arguments to support their interpretation, could be expected to carry the day in the end. Similarly to experiments of the microbiologist Louis Pasteur, who attempted to prove the efficacy of a novel vaccine against the anthrax disease in the late 19th century France (Latour, 1983), the VSNU negotiation team had to perform certain moves. Most importantly, by utilising statistics as a lever to their own advantage, they were able to reverse the asymmetries in power relationships, and the weak now had a chance to become the strong (ibid.).

At the same time, charging highly respected researchers with leading the VSNU negotiation teams was seen as another weapon and necessary ingredient in the Dutch recipe for successful bargaining tactics with Elsevier. Therefore, future delegations were warned to involve higher-level authorities in their own negotiation processes as well:

"Which also would be my warning to others: don't try to do this yourself with Elsevier, get somebody important, because otherwise you will not succeed [and] it's also good to have someone without prior knowledge of this business and look at it [from the perspective of a researcher who] can easily skip a lot of the nonsense that publishers come forward with, and believe me, Elsevier comes with a lot of arguments, but they [have] sort of fallen through from a researcher's perspective, because, so while we look at it from library's perspective, we may have, we may have some [sympathy for] what Elsevier said, that [was] totally, that is lacking with [the lead negotiator] and, you know, these are also the brightest people we have" [int_3:131-140].

Moreover, beyond approaching negotiations with major scientific publishing companies from a somewhat academic or methodological perspective, another advantage of having university heads on board was said to lie in the strong positioning of VSNU in the Dutch science policy-making landscape. In this context, the second challenge with respect to these negotiations comes to light: Elsevier's *attempts to influence the politics*. Once again, the leadership of VSNU was seen as instrumental for handling such affairs:

"I can imagine that they [Elsevier] have tried certainly to influence the [OCW] ministry

in some way, but that's good that we have the VSNU, because they, of course, one of their functions is to, they are very close to the government centre; if you have been to their offices and, you know, actually around the corner is the office of the prime minister, so that's the reason why they are there, to have a direct link, and they have a very good working relationship with the ministry, so naturally the ministry would know that some publishers would try to surpass that" [int_3:184-189].

In this respect, the delegates at VSNU seemed to be well aware of the methods used by their counterpart. One instance in which such lobbying efforts became clearly discernible, according to the negotiation team members, emerged in relation to the company's Dutch home base. As explained by one of the interviewees, the fact that Elsevier paid a sizeable amount of taxes in the Netherlands has become a bargaining chip used by this publisher in an attempt to dampen the ambitious Open Access plans:

"Elsevier is successful in going [through the] back doors in the departments of economics, asking them if colleagues from the ministry for research [OCW] can, perhaps, tone down a little bit, because, you know, that's the public, you know, we bring a lot of money, tax money to the country, can you please [tone down], if not, this is not the climate where we want to have our head offices. So these things happen at the same time" [int_10:229-232].

Here again, positioning VSNU to lead the negotiations with major scientific publishing companies and utilising its well-established connections to the ministries and politicians has been ascribed a decisive role. In this way, not only could lobbying efforts on the grounds of the substantial tax liabilities of the publishing industry be averted, but the ambitious targets set by state secretary Dekker could be upheld. At the same time, while direct links to science policy-makers were apparently utilised on both sides of the negotiation table, VSNU negotiators didn't perceive Elsevier's (implicit) argument to move its headquarters from the Netherlands as a real threat. According to another interviewee, it can be assumed that this strategy would be – or maybe indeed has been – not successful:

"I think, the element which counts for Elsevier, is that this [mandate] was coming from the government, so although I am not aware of that, I am sure that they have tried to influence the government directly as well, and I think, they have failed in that, because, of course, they can threaten, they can easily say 'well, if you go through these plans, then we may decide to take away our head office'. I don't think that that would have worked, because that would have been blackmail" [int_3:178-182].

Interestingly enough, attempts to draw on some sort of national sentiment for this multi-national publishing giant didn't seem to strike a chord with Dutch politicians, at least at the OCW ministry. In a way, despite its noteworthy tax contribution to the Dutch public purse, Elsevier's "Dutchness" was somewhat degraded. Or, as commented by another interviewee, who was involved in preparing the letter for Sander Dekker, Elsevier's status was rather debatable: "so then somehow it's not anymore a Dutch company, but it's just a company with a Dutch branch as well" [int_16:317].

Finally, the third big challenge reported by VSNU interviewees in these negotiations can be described as *countering the confusion tactics* used by Elsevier. Although VSNU was chosen to act as a single body for all Dutch research universities, and to speak on behalf of them, attempts to circumvent this proxy role were noticed by negotiation team members. Even for such a well-positioned body as that of a national university association, VSNU negotiators referred to the difficulties they experienced when attempting to uphold their joint argumentation line. Apparently, the tactics used by Elsevier's employees were not limited to seeking direct contact with politicians at Dutch ministries. Even individual universities were approached in the background to elicit their own, perhaps deviant, views. As explained by one interviewee at VSNU:

"The first and foremost role that politics have is to create a unified voice, unified demands, which is exactly what happened in the Netherlands, I mean, we have fourteen universities, publishers would tend to say to us 'while you can say that you want open access, but at Wageningen University or Leiden University, I hear different opinions and sounds', well that may be so, but our state secretary was very clear on this: all universities, all publicly funded money, and the outcome of which should be openly available by 2020. I mean, this is the case for the Netherlands, so *stop creating fuzz*. We need to negotiate on open access, so there is a reference, that is very, sort of an anchor, and it helps extremely; I meet a lot of other negotiating teams ... they usually see it as a problem, that they are not unified, they cannot speak as one voice. Their mandate is not so tight and close as it should be" [int_10:305-312, emphasis added].

It seems that speaking in one voice – one of the declared success factors of the Dutch approach (VSNU, 2016b) – still had to be actively defended against attempts to prove otherwise in negotiations with Elsevier. Here, a certain *divide and conquer* strategy used by Elsevier representatives was observed. As reported by another interviewee:

"What usually is done by publishers is, when they, when they are negotiating, and they feel that they don't get a grip on us as a party, or they just don't think that, they just can't get what they want, they start calling individual universities on the board level, and strangely enough, these board members always seem to want to talk to each [of the] publishers, you never know why, but they do that, and then it happens that university board members say ... to us as negotiators 'oh, look at it from this way, mm, shouldn't you do [it] that way', so they are able to, this, how to say that, disrupt the process, by talking to everybody personally, or they meet people in conferences and *they start to create confusion*. This is what they do, and we explicitly told all the board members 'you are not going to talk to the publisher, you are not open for telephone calls, you are not, etc., etc.'" [int_4:202-209; emphasis added].

Yet what message did Elsevier's employees want to get across, in their purposeful efforts to have a word with individual board members? Building on responses received from several universities, negotiators at VSNU suspected that Elsevier was making attempts to unsettle the official government's position and to cast doubts on the measures set in Dekker's letter. As this interviewee continued:

"Now [it] is funny, but this is how Elsevier works, or maybe you already heard that,

but one of the negotiators on our table, he is the guy who is with, I think, it's called, I think his function is academic relations, something like that, he's Dutch, he started to talk to all the chairs, chair people of the boards, the chair men and chair women of the boards again. He wanted to talk to them, and then we got reported back that what he was wanting to talk to them about was the fact that they see that our authors do not use Open Access options, in other words, 'why are you so eager to have Open Access when your authors do not use it?'" [int_4:307-311].

While these were not baseless claims, as we shall learn more about in the following chapters (see especially chapter 9. on *Key tensions*), negotiation team members at VSNU perceived such manoeuvres on the publisher's side as illicit dealings that violated the rules of the game. As one of the negotiators at VSNU liked to re-emphasise, it bears repeating how invaluable the decision to involve university presidents and to task them with leading the negotiations with the biggest scientific publishing companies has been for this purpose:

"They [the lead negotiators] are not impressed by Elsevier, and believe me, they [Elsevier] use all the tactics to impress you and to say 'you are nothing to us, we don't need you', that doesn't happen with this, they tried to, they tried to ... because they were not getting through to us, they were not, we were not buying what they were telling us initially" [int_3:146-149].

As can also be recognised from the quote above, these negotiations were characterised by a strong combative spirit for which (almost) any measures appeared to be justified. Indeed, it seems that a variety of methods were applied *by all* involved parties to help advance their respective goals. Starting from state secretary Dekker, his staff, and other science policy-makers, who actively mobilised relevant actors in and outside of the Netherlands to win broad support for the proclaimed Open Access goals. To the university association VSNU, which deliberately adapted the negotiation strategy for confronting major scientific publishers as well as briefed various newspapers on the progress of the negotiations. To representatives at Elsevier, who made the impression of well-seasoned professionals in applying their own powers of persuasion in reaction to the novel political demands.

Yet after this lengthy trial of strength – where negotiations between VSNU and Elsevier delegates took more than one and a half years, apart from the regular jobs and responsibilities of involved individuals – interviewees on both sides expressed feeling a great relief after reaching a principle agreement in the autumn of 2015. A certain battle fatigue in the final stages of this exhausting procedure was also clearly perceptible in the interview accounts of many negotiation team members. We shall now take a closer look at this more personal dimension of the negotiation process and its emotional toll, while also asking the interviewees how happy they were with the outcome of the agreement that was meant to fulfil the official mandate commissioned to them.

8.2.3.3 On military rhetoric, battle fatigue, and "the happiness question"

One of the questions posed to the interviewees on the VSNU and Elsevier negotiation teams related to the issues that they considered to be particularly difficult or controversial throughout the

negotiation process. Given that this task to adjust Big Deals with Open Access publishing components carried a certain test-case character of being among the first of its kind, these negotiations received detailed attention from science policy-makers, media outlets, library consortia, and negotiation teams in other countries (VSNU, 2016b). Indeed, with VSNU's press releases at every major negotiation step, many details of this usually not-so-spectacular procurement procedure came into the limelight. For these reasons, the pressure to reach a satisfactory result placed an additional burden on the already charged atmosphere between the designers of the VSNU-Elsevier agreement.

Since there were ambitious goals but no extra funding foreseen in the list of measures by state secretary Dekker (OCW, 2014), it could be assumed that tough financial conditions had been a delicate subject in the VSNU-Elsevier negotiations. Yet when negotiation team members were asked about this in the interviews, it appeared not to be the hardest nut to crack. With regard to the most difficult aspects in this negotiation process, one of the VSNU delegates replied:

“No, it was because we had so many struggles, and sometimes, we left each other angry and then we didn't speak to each other for a while, so that's what [was] happening, and what's always happening with any negotiation is the end of year is important, because the salesmen from the publishers want to get in the sales before the 31st of December, to count for their past year, and they always tend to be more, how do you say that, because they want to close the deal before the 31st of December, there is more pressure towards the end of December” [int_4:240-243].

That is, the principal difficulty for reaching an agreement between both parties seemed to be located at the level of interpersonal communication. In the words of another interviewee, “if emotions played a role, and [they] certainly did, that's how we got to this deadlock” [int_10:362]. This impression seemed to be congruent with reports about the negotiation process from the other side of the table as well. Once again, some of the most remarkable moments in these extraordinary Big Deal negotiations were linked to the involvement of high-level representatives among VSNU negotiators. As experienced by one of the interviewed publishers, the behaviour of VSNU's lead negotiator was “close to the borderline” at times, prompting Elsevier's delegation to consider asking the VSNU to exchange this lead role with a different person [int_p2:913]. To illustrate some of these agitated feelings, this interviewee continued:

“Many of my colleagues then said, they are not going to go there [to these meetings] anymore, but then I said, we still need to reach some result, 'no, I am not calling that guy any more', okay, so I will call him ... then I said, we still have a common goal, it's not just a goal between two people, but it is something that should benefit the whole scientific community; I cannot gamble with this, just because two people cannot reconcile with each other, or if one is a bit too bold ... so he's not angry with me, but with the whole system, how it works, and as I am representing this system, I need to tolerate some of these allegations ... of course, I could yell back in the same way, but it doesn't help us further, because under these circumstances, we should rather break up. We came to you to negotiate, not the opposite, but you treat us like murderers or criminals, then I would rather have no contract with you, I better prefer that than being

insulted all the time, mind your language. Then they [VSNU] came back and said, 'it's fine [sorry]', okay, accepted, we move on" [int_p2:951-973].

As can be discerned from the quote above, not all members of negotiation teams were prepared to resume conversations after such intense disputes. Here, the interviewee quoted above appeared to act as a mediator in between hardened fronts, and remained one of the few people who were *still willing to talk*. But this person had to reportedly pocket his pride and overcome his own inhibitions to be open to meeting again at the negotiation table. At the same time, VSNU's decision to intervene in this interpersonal conflict and to delegate an additional high-level university manager to help lead the negotiations was praised as "a smart move" by the same interviewee [int_p2:948].

The meeting session in late summer of 2015, during which the participants flipped their roles and exchanged views on each other, was then described as a welcome intermediary exercise that helped ventilate a mutual sense of frustration after a the repeatedly stalled negotiation stage. According to an interviewee at VSNU, the relationship between both negotiating parties was at its lowest point: "at that time, we were almost frantic about calling it a negotiation, it shouldn't be a negotiation, so brainstorm [laughing], so an important step, so that's what we [did], but it gave a great relief, even some energy and fun" [int_10:370-371]. When asked to explain how the idea to try this role-playing game came up, the interviewee explained:

"We were so frustrated about the way that we negotiated, that we communicated it, so there was awareness on both sides that we weren't doing right, but we couldn't help ourselves, and then, I don't know, it was just a, suddenly it was there, how can we help each other brainstorm, and how do you conduct a brainstorm, what do you do during a brainstorm. I mean, we cannot just sit, and then, we should be, we should keep far from what we did [before], and then this idea came up, it just came up, but it makes sense, if you are honest and true about, you believe that you should, need [to], keep listening, because maybe you didn't get things right, then you must give it a try. Well, it helped, it helped, it was funny, yeah" [int_10:383-391].

Apparently, there was an element of remorse about certain episodes over the course of these negotiations, at least on the VSNU side. Therefore, to conduct renewed talks in a constructive way, and to help thaw relations, it was decided during the brainstorming workshop to "not bring in all conditions condensed, [because] then we will be fighting within half an hour" [int_10:376]. Instead, different challenges were broken down to be treated separately: after solving "the social engagement challenge" at first, i.e. getting over old wounds and agreeing to continue the negotiations, the delegates turned to "the technical challenge", during which the possible implementation of selected ideas was explored further. Only then, returning "to the more hardcore activities of the negotiation" [int_10:373] and assessing the financial conditions ensued in the following steps. As explained by this negotiator, the finances were deliberately excluded from the brainstorming exercise, "so we came back about to discuss the financial conditions two and a half months later" [int_10:380]. However, even if the monetary side of the emerging agreement was put aside for that moment, which helped to relieve tension between members of both teams, it was nevertheless said to have been a "very difficult" part of the negotiations [int_10:381].

Judging from the interviews with Elsevier representatives, the financial aspects of the Open Access transformation seemed to be an issue that kept the publishers very busy. Even more so, the question of “*who will pay the bill?*” for switching the business models in scientific publishing emerged as a golden thread that ran throughout the conversations with both of the interviewees representing the publisher. For instance, recalling the position of the ministries and universities in the Netherlands, with no extra funding earmarked to fulfil Open Access targets, one of the interviewees considered this as a somewhat hypocritical standpoint:

“But I think, fundamentally, I thought, in the Netherlands, it’s very interesting, so you are for Gold Open Access, [but then] *who will pay?* And so it was not the ministry, they were not willing to invest a single euro, [and] it was not universities, they were also not willing to invest a single euro; they put the bill completely on the side of the publishers, and so I challenge a bit, you know, how they truly feel about Gold Open Access. I mean, if I truly feel passionate about something, I would invest in it: if I worry about the environment, I bike home. I do something, not only shout, you know, about my enthusiasm, about Open Access, and maybe that’s why I felt flat” [int_p1:158-165, emphasis added].

Interestingly enough, the claim that shifting to the golden Open Access road instead of the current journal subscriptions model would be inevitably more expensive was vehemently opposed on the other side of the table. Here, one of the VSNU negotiators remembered:

“In every round of negotiations, they [Elsevier] told us ‘you have to accept that, when you want to go for Gold, it’s always more expensive’, they did not stop telling us that ... but that is silly, it is silly to tell that, I mean, I understand why they tell it, but that people believe it, that it’s always more expensive, and that was more or less around the time that [the] Max Planck [society]⁸⁷ came around with their calculations, so we said ‘look, the system has enough money, it is just that you don’t want to shift and to rearrange your money flows’” [int_4:352-359].

As argued by this interviewee, the amounts of money required for the publishing fees (APCs) under this model “are just figures” that the publishers think they can ask for, yet these do not necessarily represent their actual costs. Rather, “it’s just that their shareholders want them to get more out of their shares every year and we are paying for that” [int_4:366]. Yet what was seen as even more disturbing by this experienced negotiator, is that the cost-related argument propagated by scientific publishers seemed to have become firmly established among many researchers and even colleagues at university libraries: “but you see, *that [is] their way of penetrating our thoughts* all the time, with Open Access [it] is more expensive” [int_4:370, emphasis added].

It becomes clear, however, that the representatives of the publisher did not see themselves in a position to accept disadvantages for their current operating model with their accustomed profit

87 What is referred to here is a much-debated white paper by staff of the Max Planck Digital Library (part of the Max Planck Society), where one of the main claimed “insights” stated: “There is currently already enough money in the system. A large-scale transformation from subscription to open access publishing is possible without added expense” (Schimmer et al., 2015, p. 7; see also chapter 1. *Introduction*).

margins. As commented by another Elsevier interviewee: “it is often said that publishers have to bear the costs [for an Open Access transformation], but we cannot do so, and if we have to, this means that others will have to pay more” [int_p2:1193]. That is, a redistribution of costs and money flows would have to occur in some way, yet the bill for publishing in Open Access would likely be passed on from the publishing companies to someone else.

And still, on balance, negotiators on both sides seemed to be pretty much satisfied with the resulting agreement. In the words of the same representative from Elsevier:

“You know, when you work on this for almost two years, it takes a huge effort ... then you also want to accomplish it, not at any cost, it must be fair, we could play along for one more year, okay, that’s why we are here with our jobs, that’s what we are paid for, but I think, the bottom line is that everybody was very happy, and I believe also, at least we had a feeling, that the Dutch were also satisfied with it” [int_p2:883-892].

One of the questions used in my interviews with the designers of the VSNU-Elsevier agreement for 2016–2018 contained a deliberately sentimental slant (i.e. “*How happy are you with the outcomes of the agreement?*”, see *Appendix III*). On the one hand, this question offered an opportunity for the interviewees to relive the experiences of the past months and to take stock of their overall achievement. On the other hand, this “happiness question” also triggered some intriguing reflections and helped draw out some additional twists in the Dutch Open Access story that had not previously come up for discussion.

One of the observations revealed thereby was that some sort of *battle fatigue* could be sensed among all the interviewees. Although the response from an Elsevier representative quoted above already contained overtones of exhaustion, another negotiator on the VSNU side put his conclusion in an even more marked way:

“I’m happy with the fact that we still have an agreement with Elsevier ... so for that I’m happy, I’m happy that there is also some rest, because Elsevier takes a lot of energy in the entire community, and I don’t have just Elsevier to deal with” [int_3:277-286].

Similarly, an interviewee at Elsevier assessed these negotiations as a very elaborate and time-consuming process and decided to withdraw from the negotiating team. With a reference to the subsequent negotiation period after the end of the current contract term, he replied: “they invited me, I said ‘no’ [laughing], good luck, because it took too much of my time” [int_p1:61].

Another common thread that came to light when reflecting on future steps and the legacy of this agreement was the strong *military rhetoric* that was present in most interviews. While it might be considered an eloquent way to describe potentially decisive moments during encounters between the teams, its conspicuous ubiquity suggests a symptomatic feature of dealing with controversial issues in these negotiations. To describe their own (mixed) feelings towards the resulting agreement, an interviewee at VSNU continued further:

“I’m not too happy with the Open Access arrangement, because if, initially, you compare [agreements with other publishers], it’s a very meagre result, but it’s Elsevier.

The fact that we managed to get at least something with Open Access, I think, is a victory, but we are not there yet ... but at least now, we start discussing over two years or so, so it gives us some rest, in the meantime, things develop and, but there are still some battles to be, to come" [int_3:290-303].

Interestingly enough, the response received from another colleague on the VSNU side added even more variables to the happiness question:

"At this moment, for the agreements we have, well, most of them I am really happy with. I tried to think it over some weeks ago, am I happy or am I not, and I think, well, yes, we can be happy, we have a long list of journals, where we can publish in Open Access, the extra cost of Gold Open Access ... it's not going up, we have extra added value within the deals, *but I'm happy for the time, for the period the contract lasts*. So I am very curious for the next steps, if we don't succeed in getting some countries also changing the model, then we are still, I think, a little bit locked-in to the demands of the publishers" [int_2:303-311, emphasis added].

That is, descriptions of one's own feelings as *temporarily* or rather *conditionally happy* made it clear that the personal sense of achievement and satisfaction with the resulting agreement was made subject to future developments in this area. In this respect, it was seen as necessary by the VSNU negotiators to convince negotiation teams in other countries to follow suit and to adopt similar clauses in their own agreements with major scientific publishers:

"It still can fail, if the, if Holland remains the only country and no one else follows, then, eventually, we will have to give this up as well, and I already start noticing that some of the day, so it's, that was good that Austria has this deal with Springer⁸⁸ as well, and I hope, more will follow, because if not, if the rest of, at least the rest of Europe or the EU does not follow, then we cannot keep this up; publishers are not going to make exceptions for very small part of the world. So we started it, we proved that it can be done, [but] you have to be very certain" [int_3:330-338].

Finally, the outcomes of the VSNU-Elsevier negotiations also indicated deep concerns and perceived risks associated with the Dutch approach. Unsurprisingly, the prospect of rising costs was among the main pain points, but the shift of the underlying logic was further expected to deeply affect traditional roles and established workflows at academic libraries. In this respect, another interviewee on the VSNU side commented:

"These open access negotiations will have many changes for all the librarians and the ways they work, and all the consortia that work together, now they stick to the collections [collection development in libraries], but as soon as [journal] licenses are going to be APC-based, then the amount of money we have to add to the total expenditure can be changed dramatically, and there is also a little risk, we must be prepared to have a very different attitude within these consortia, [because] if we stick

88 A reference made to the "Springer Compact" agreement between Springer and the Austrian Academic Library Consortium (KEMÖ) and Austrian Science Fund (FWF), announced in September 2015: <https://www.springer.com/gp/about-springer/media/press-releases/corporate/austrian-scholars-can-publish-open-access-in-more-than-1-600-springer-journals/794476> [last checked on 11/07/2021].

to what we spend now, and it shouldn't be more, we don't win this battle" [int_2:361-364].

As can be seen from these reflections of VSNU negotiators, the pilot arrangements on Open Access publishing in Big Deals with major scientific publishers still had to be expanded on a broader temporal and spatial scale in order *to become* successful. On the one hand, these experimental contractual amendments had to endure the initial contract periods (often limited to three years, as in the case of the VSNU-Elsevier agreement) and to be prolonged in subsequent negotiations. But on the other hand, they also had to be tried and tested more widely in order to become adopted across numerous countries. Until then, the agreement with Elsevier was seen by the interviewed VSNU negotiators as only a partial and temporary achievement, dependent upon its potential for geographical expansion and the subsequent events. Therefore, after building up momentum with Sander Dekker's letter and the ensuing political support, the task faced by the negotiation teams in the Netherlands and beyond was now *to sustain* that very momentum and the overall endeavour in a collective effort over the coming years.

At the same time, a fundamental transformation of the prevailing publishing and business models in the academic publishing world promised to bring about numerous changes for many of its players. Most palpably, academic libraries – as the ones thus far responsible for arranging access to scholarly literature – would have to radically change their ways of supplying users with necessary resources, according to the new logic. But such a shift would also have far-reaching consequences for other actors in the whole scholarly communication network, not least the researchers themselves. In this way, the outcomes of the VSNU negotiations could be also expected to carry a huge potential for frictions in the well-oiled publishing machinery.

Under a scenario where such Big Deals enhanced with Open Access components were to become more common, a particular understanding of science, (scientific) knowledge, and their place in the society would be implicitly inscribed therein. To reconstruct the underlying values, norms, and classification schemes contained in such agreements, I now turn to an analytical level and *de-scribe* the final VSNU-Elsevier deal from a different, conceptually driven angle. For this purpose, I will use the notion of “scripts” and “technical objects” as proposed by Madeleine Akrich (1992) to complement my main theoretical framework.

8.3 De-scripting the VSNU-Elsevier deal

After exploring the details of individual steps and tactics used in crafting the VSNU-Elsevier agreement for 2016–2018, in this sub-chapter I move away from the processual perspective and take a closer look at the outcome of these negotiations. Taking inspiration from the sociology of technology, and particularly Madeleine Akrich's (1992) work, I examine this *deal* from a more analytical perspective. At first, I propose conceptualising the APC model at the core of the VSNU-Elsevier pilot agreement as “a technical object” that carries the thumbprint of its designers and reflects their values and imaginings about targeted users, their organisational relations, and a particular social order. Building on this lens, certain “scripts” that were constructed in these

negotiations about Dutch researchers as the projected users of the resulting agreement will be examined, as well as criteria to be fulfilled by those researchers to become eligible for the gratis Open Access offer. After *de-scripting* or deconstructing the resulting agreement in this way, I explore potential changes in infrastructural relationships in the network of actors in academic publishing as well as a new geography of responsibilities with regard to the envisioned Open Access transition.

8.3.1 Considering the APC model as “a technical object”

As could be discerned from the responses of VSNU negotiators to “the happiness question”, the interviewees representing the Dutch universities in negotiations with Elsevier had a number of reasons to be worried. Not only had they to ensure that their – certainly remarkable – achievements could be replicated and extended further on in follow-up negotiations with major scientific publishers, but convincing other negotiation teams in Europe and elsewhere to adopt similar approaches could also not be taken for granted. The entire effort to translate the ambitious targets set in Sander Dekker’s letter into practice and to induce a large-scale transformation of the scientific publishing system *could still fail*. Therefore, the sustainability of VSNU’s own temporary position was fraught with risks and uncertainty.

One of the main concerns shared by designers of the VSNU-Elsevier agreement for 2016–2018 was rooted in the particular publishing and business model chosen as the vehicle for transitioning to the new envisioned Open Access world. As I have shown with reference to the notion of *re-infrastructuring* (Grisot & Vassilakopoulou, 2017), the central task faced by negotiation teams on both sides was maintaining the embeddedness between the old and new elements of the scholarly publishing infrastructure. The job of negotiators was not only to prolong the next regular Big Deal, but also to find a new workable solution for adjusting the contract between the parties in line with the strategic Open Access goals. The challenges emanating from the hybrid character of the resulting combined agreements even manifested themselves in the ostensibly trivial question of finding a succinct name for them. This *naming struggle* is particularly visible in the following quote from a VSNU negotiator:

“At this time, during the transition, I think... I don't know what name to give it Many, who are involved in Open Access, they would like to know if deals from the Netherlands are – those APC-driven deals – are they Green deals, whatever deals, I mean, there was a lot of creativity, many types of deals derived from literature. We just say what we do, we negotiate for the benefit of Dutch researchers, if their articles are immediate Open Access and it fits in our mandate, the financial mandate, then it's fine, and we do not know what name to give it” [int_10:88-94].

The difficulties in finding an appropriate name for such contracts reflect their problematic underlying features. In a way, extending the usual journal subscription packages with a prepaid amount of Open Access publishing fees has rendered such novel-type Big Deals even bigger – and this has likewise been true of the dependencies of research institutions on a handful of major scientific publishing companies. Although the VSNU-Elsevier agreement for 2016–2018 was

described by VSNU negotiators as delivering “more value” for roughly the same amount of money, a major worry expressed in the interviews was linked to the looming probability of rising costs in future agreements. In this respect, one of the interviewees replied: “because everybody says that when you change the subscription system for what is now known as APCs, the same thing can happen: the publishers can still use it as their cash cow” [int_4:114].

Yet switching from the former journal subscriptions system to an APC-based academic publishing regime was exactly the route that was desired at the political level. Because of the stated preference in Sander Dekker's letter to the Dutch parliament to support Open Access in hybrid journals (OCW, 2014), Dutch research institutions and their responsible negotiators were explicitly asked to put this pledge into practice. At the same time, both in this letter and in subsequent negotiations with major scientific publishers conducted by the university association VSNU, the plans to implement an Open Access transition in academic publishing and to swap journal licensing fees for APCs was mostly considered to be merely a “technical” challenge. To recall the line of argument provided in the letter, the developments leading to the current (unsatisfactory) system of publication were outlined in the following way:

“Subscription fees have increased sharply in recent years and constitute a huge cost item in university library budgets. Since the advent of the Internet, journals have been published both in print and electronically. Readers no longer need to go to a traditional library; articles are available online at the point of use (although access may be restricted). This *technological revolution* has laid the groundwork for open access to publications and books” (OCW, 2014, n.p.; emphasis added).

Echoing this technology-driven view, one of the interviewees explained the standpoint of the university negotiation team in a similar way:

“We do understand that publishing is a commercial business and there can be public money spent on it ... and you [publishers] can trust us – consortia, universities – that we will pay the same amount of money, *we only want a different technical standard*” [int_10:332-334, emphasis added].

That is, the envisioned gradual changeover from paying to read scientific journals to paying for publishing one's own work in those journals was largely treated as a technical matter. Moreover, even the total amount of money spent by research institutions world-wide on the academic publishing system, as claimed by some widely debated (and highly debatable) studies (e.g., Schimmer et al., 2015), was said to remain the same. The only request addressed towards the publishing companies, ostensibly, was to issue invoices for APCs in lieu of the licensing fees.

However, one can guess that the transformation processes that would be triggered in such scenarios might turn out to be a bit more complicated in the end. In particular, neglecting the “social” implications or any collateral side effects of such a large-scale “technological” transformation in the ways in which research results are communicated and disseminated in academia would be somewhat simplistic, to say the least. Fortunately, a whole research branch of the sociology of technology lends further aid for exploring how technologies and their designers

define users and settings of use, while at the same time *inscribing* their own convictions and imaginations of the workings of the world into these objects. To analyse a particular view of Dutch researchers as the main beneficiaries of the resulting Open Access agreements as well as the projected inter-relationships between all actors through this lens, in the following pages I propose a perspective that places the APC model at the core of Dekker's Open Access transition plan and the subsequent VSNU-led negotiations as a "technical object", following Madeleine Akrich (1992).

According to Akrich, when defining characteristics of their objects, technology designers "necessarily make hypotheses about the entities that make up the world into which the object is to be inserted" (1992, p. 208). That is, the role of design choices as prescriptions of certain orders inevitably intervenes into the social fabric permeating that object. Or, in the words of Akrich (*ibid.*):

"Designers thus define actors with specific tastes, competences, motives, aspirations, political prejudices, and the rest, and they assume that morality, technology, science, and economy will evolve in particular ways. A large part of the work of innovators is that of 'inscribing' this vision of (or prediction about) the world in the technical content of the new object."

When applied to the present empirical case, the APC model underlying the Dutch national Open Access strategy and the VSNU-Elsevier agreement displays many features of a *technical object* as proposed by Akrich (1992). To start with, the very fact alone that Dutch universities were instructed to adjust the upcoming Big Deals with APC-based Open Access publishing components already entailed a number of implicit assumptions about the competencies and aspirations of individual actors in the current and future modes of academic publishing. Some of the direct implications of choosing modified Big Deals and not other alternative routes – beyond accepting the legitimacy of this publishing and operational model in first place – meant that the upcoming negotiations would have to take place:

- with major scientific publishing companies,
- on conventional subscription-based journals (that often offer "hybrid" Open Access options),
- and built on the premise that publishers will flip these journals from subscription to a fully Open Access model or offset APCs for individual articles with licensing fees (OCW, 2014).

Furthermore, by conducting negotiations "for the benefit of Dutch researchers", as claimed by the VSNU delegates, the designers of the resulting agreements simultaneously defined how the roles and responsibilities would be (re-)distributed among all actors. While VSNU positioned itself as an official mouthpiece for the whole Dutch research sector, the researchers themselves were expected to accept this representative role and to make active use of the resulting Open Access agreements offered to them. Academic libraries, in turn, were once again positioned as service providers within Dutch universities and requested to re-arrange their budgets and workflows according to the new Open Access publishing logic. Lastly, large commercial publishers were asked to continue to occupy a vital gatekeeping role in the envisioned transition process – and to duly play their part,

as well. Moreover, the evolution of “morality, technology, science, and economy” (Akrich, 1992, p. 208) was assumed to take a certain pathway: that readers of research articles would presumably like to access them on the publisher’s website, by using electronic formats, and that the capacity of the Dutch public purse would be sufficient to afford payments for corresponding publishing fees requested by the publishers. As a result, a particular mode of publishing was imposed.

From a methodological point of view, one of the locations to look for such *scripts* that go hand in hand with technical objects, according to Akrich (ibid, p. 211), are user manuals and contracts. Also in the present case, studying the terms of the contract between VSNU and Elsevier for 2016–2018, and particularly the “Pilot Gold Open Access” section, serves as a rich source of information. Together with the accompanying documentation, and presentations prepared by involved organisations, the contract offers a stage on which the construction of an archetypical Dutch researcher is performed. At the same time, a new *geography of responsibilities* among the affected parties has been drawn along with the steps towards the envisioned Open Access future. I will now take a closer look at selected aspects in relevant documents with the help of this conceptual lens.

8.3.2 *Constructing the Dutch researcher*

Following the first WOB request in April of 2016, after which VSNU disclosed the expenditure data on journal subscriptions and academic books compiled from Dutch universities, another legal request to inspect Open Access agreements with major scientific publishers was received. As anyone interested in this issue could learn on VSNU’s homepage:

“In September 2016, the universities received a second request under the Government Information (Public Access) Act (Wet Openbaarheid Bestuur, or WOB) relating to open access. This request entailed: ‘provision of a copy of the open access licenses purchased by your institution in the past year from various publishers such as Elsevier, Springer, Wiley, Taylor & Francis, ACS, Sage[,] Karger, Thieme, Walter de Gruyter, RSC, Emerald and any comparable licenses, with the essential understanding that the institution shall pay a previously-established fee to the publisher, in exchange for which the publisher will publish accepted academic articles by authors affiliated with your institution open access in licensed journals. My request also entails inspection of all supporting documents and correspondence, insofar as these may be relevant to a commercial evaluation of the licenses in question.’”⁸⁹

An interesting piece of background information about this request can be taken from a short note in VSNU’s open access newsletter of December 2017:

“An important development this year was the request under the Government Information (Public Access) Act submitted by Leo Waaijers, the former Delft librarian, to ascertain how much Dutch universities are paying for the publication of open access articles. In an attempt to prevent this information from becoming public, Elsevier and

89 VSNU (n.d.). Inspection of open access licenses. Retrieved from https://www.vsnu.nl/en_GB/public-access-request [last checked on 31/07/2021].

Springer lodged an objection with the appeals committee. Later in the year, the committee declared that their objection was unfounded and that the requested information had to be made public. The VSNU has compiled a table of the most relevant elements in the requested contracts.”⁹⁰

In response to this request, a similar procedure to the first WOB request was conducted and major elements of the relevant contracts were disclosed. The scanned original copy of the Elsevier subscription agreement including the pilot Open Access arrangement as well as six follow-up amendments to it were then made public afterwards by VSNU.⁹¹ The details about this written agreement are mostly obtained from this source and will be examined in the following.

This agreement entered into force as of 17 March 2016 between Elsevier B.V., with its office in Amsterdam, the Netherlands, and SURFmarket B.V., located in Utrecht, the Netherlands, who was authorised to act on behalf of the Dutch universities consortium and designated as their legal proxy and lawful attorney. Initially, the term of this agreement was set to last for three years, to run from 1 January 2016 until 31 December 2018. Without a separate renewal, this agreement was designed to automatically expire on the 1 January 2019 (yet it was later extended for several times afterwards).

As with a typical Big Deal agreement, this contract laid down the particularities of the subscription access to the journal collections published by Elsevier. The subscribed product under this contract concerned the so-called “Complete Freedom Collection”, which entailed electronic access to the full-text of all articles from the Elsevier journal titles published since 1 January 1995. Thereby, members of participating institutions were entitled to search, browse, and otherwise use individual items from the subscribed products, such as downloading single journal articles for their own research and teaching purposes.

Yet beyond the usual subscription access to scientific journals, this agreement also contained a “Pilot Gold Open Access” arrangement that was the major novelty and the main outcome in response to the Open Access goals outlined in Dekker’s letter. The terms and conditions of this additional clause were explicated in the following way:

“The Authorized Users of the Institutions shall have the right during the term of this Agreement to submit a total of 3,600 journal articles under the Pilot Gold Open Access for publication to Elsevier and, if accepted after peer review, to be published at no additional costs under the Pilot Gold Open Access after which the journal article shall be published under a CC-BY or CC-BY-NC-ND license as determined by the submitting Authorized User. Submitting Authorized Users under the Pilot Gold Open Access shall not be required to transfer any copyright in their work to Elsevier, instead submitting Authorized Users grant exclusive rights to Elsevier in the journal article publishing process. The submitting Authorized Users shall have the same rights to reuse the published journal article as those allowed to third party users of the journal

90 VSNU (2017). Newsletter open access No. 34. See <https://mailchi.mp/vsnu/newsletter-open-access-december-2017> [last checked on 04/08/2021].

91 See <https://www.vsnul.nl/files/documenten/Elsevier.pdf> [last checked on 31/07/2021].

article under the selected CC license” (Schedule 1.1, p. 11).

As explained further on in the same section, “authorized users” – i.e. eligible authors at participating institutions – would not be charged regular APCs when submitting their manuscripts for publication in selected journals. In order to make use of this limited offer, interested authors would first need to identify themselves as being eligible in the course of the publishing workflow. In the next step, their eligibility would be verified by the consortium or their home institutions upon receiving a submission notification from Elsevier.

This arrangement was implemented accordingly in Elsevier’s publishing workflow for prospective authors of journal articles as well as on an equivalent platform for institutions for verification purposes of individual articles. To demonstrate what was to be expected by the authors, one of the supporting “VSNU Workflow Screenshots”⁹² provided by Elsevier showed a dedicated “Open Access Policy” step on the submission form (see *Illustration 1*):

OPEN ACCESS POLICY

Research reported in this article was performed by a researcher of a **Dutch University (VSNU)**. Elsevier has established an agreement with the VSNU (Association of Universities in the Netherlands), UKB (the Dutch Consortium of University Libraries) and the Royal Library to help Dutch authors publishing in Elsevier journals make their research open access.

Authors are strongly advised to publish their article gold OA, in line with VSNU’s requirements and will be able to do so at no additional cost.

- **Gold open access (immediate access to the final article)**
Select this option to confirm research reported in this article was performed by a corresponding author based at one of the Dutch Universities and to ensure that your article will be published Gold Open Access (immediate access to the final article).

There is a fee associated with gold open access and the VSNU – Dutch Universities will pay Elsevier directly from a central fund. You, the author, will not have to pay.

Further details are available at Elsevier’s Dutch Universities (VSNU) agreement page.
- **Green open access (self-archive your draft copy after embargo period)**
I wish to self-archive my accepted manuscript, which is my draft version of the article and which may include any author-incorporated changes from the peer review process. I can post this author manuscript on my institutional or subject-orientated repository immediately for internal use and make it publicly available after a journal specific embargo period has expired.

Please check the embargo list for this journal’s embargo.

More information is available in Elsevier’s article sharing policy.

<< PreviousSave and Continue >>

Illustration 1: Replica of VSNU Workflow screenshot in the course of Elsevier’s publishing workflow: Open Access Policy (as of November 2017)

92 Retrieved from OpenAccess.nl website in November 2017 and reproduced here by the author. Original copy archived by the author.

As can be seen from this replicated screenshot, authors of academic journal articles were presented an *either-or* choice between Green and Gold Open Access options. To help make this decision and reflect the official policy, they were “strongly advised to publish their article gold OA, in line with VSNU’s requirements and will be able to do so at no additional cost”. When selecting this option, the authors were further informed: “There is a fee associated with gold open access and VSNU – Dutch universities will pay Elsevier directly from a central fund. You, the author, will not have to pay” (ibid.). Alternatively, the Green Open Access option was offered to those wishing to self-archive their author manuscript after a journal-specific embargo period instead (at no extra cost in general).

However, there was an essential precondition to be fulfilled before authors were offered the chance to opt in for Gold Open Access under the VSNU-Elsevier agreement and to make their final article immediately accessible to everyone with no author-side fees. As described in the first sentence of this submission page, interested authors were asked to confirm that “Research reported in this article was performed by a researcher of a Dutch University (VSNU)” (ibid.). To learn more about the eligibility criteria used to qualify as “a researcher of a Dutch University” we shall briefly return to the category of *authorized users* as defined in VSNU-Elsevier agreement.

For a first-time reader of this contract, it takes some effort and jumping back and forth in order to get a more detailed picture of all those individuals who were deemed eligible or were “authorised” to use the subscribed products and/or publish their own work in Open Access. To start with, a definition of “Authorized Users / Sites” was given right at the beginning of the document:

“Authorized Users are the full-time and part-time students, faculty, staff, researchers, retired employees, and independent contractors of the Subscriber affiliated with the Subscriber’s locations listed on Schedule 2 (the “Sites”) and individuals using computer terminals within the library facilities at the Sites permitted by the Subscriber to access the Subscribed Products” (ibid., p. 1).

That is, either employees, students, or other affiliates in the above-mentioned categories of “the subscriber”, i.e. the group of institutions signing up to this contract by proxy of SURFmarket, or so-called “walk-in” users who are physically entering their libraries, were granted full-text access to journal articles and other literature published by Elsevier. Secondly, the list of these institutions as well as their respective IP address ranges used for the identification of entitled users has to be consulted in Schedule 2 (“Sites / Authentication / Contacts”, pp. 26–29). Both conditions combined, a student at, for instance, University of Leiden or a research associate at the Rotterdam University of Applied Sciences would find themselves covered by this institutional subscription and, thus, not subject to access restrictions asking them for individual pay-per-view fees or the like in their literature search.

A closer look into the list of participating institutions offers some additional insights. At first, one finds all 14 research universities in the Netherlands, including the Open University with its focus on online part-time studies, united under the roof of VSNU. Next, two dozen universities of

applied sciences (UAS) are named. Last, two other institutes complete the list: the police academy and SURFmarket, the same institution that was authorised to sign this contract on behalf of the others. When comparing this selected list with the overall Dutch academic landscape, a number of remarkable features emerge.

While all of the research universities – that is, those with a focus on academic research and teaching, and entitled to confer doctorate degrees – were to be found on this list, 15 of the 36 government-funded UAS that are affiliated with the Netherlands Association of Universities of Applied Sciences (Vereniging Hogescholen)⁹³ were not. Among the latter, mostly universities of the arts, design academies, the Royal Conservatoire The Hague, and universities for teacher education were missing. Moreover, the four other publicly funded universities, three theological universities, and the University of Humanistic Studies, all members of VSNU,⁹⁴ were not on the list of institutions under the VSNU-Elsevier agreement.

With regard to the UAS, a separate paragraph was added to the contract which explained that, with some exceptions concerning the archival rights and another annexed list of journals (mostly in the medical science fields), they “shall at no additional fee be permitted to have access to the Subscribed Products” (p. 13). Interestingly enough, another distinct user group was singled out next to the UAS – that of “Start up Companies”:

“Only a start up company newly created by an Institution during the term of this Agreement or which preexisted no longer than three years prior to the Effective Date and which remains located at the Site shall at no additional fee be permitted to have access to the Subscribed Products during the remainder of the term of this Agreement. The Subscriber shall inform Elsevier about the start up companies that have been created during the term” (ibid.).

While the exclusion of arts academies and theologically oriented colleges might be reasonable given Elsevier’s focus on STM and healthcare fields (although less so for excluding teacher education universities in these very same fields), the conditions imposed on members of start-up companies, that spin off from academic research and are still to be located at university campuses, appear to be rather restrictive.

Moreover, a few other types of research institutions were conspicuously missing from this contract. Given that Sander Dekker’s letter called on “all the stakeholders”, including, among others, higher education institutions, the Royal Academy, and the umbrella organisations NFU and VSNU, to intensify their collaboration and “devise joint strategies for making publications available through open access journals” (OCW, 2014, n.p.), it is surprising that the research institutes of the KNAW were left aside entirely. Moreover, non-university research organisations⁹⁵,

93 As listed by the Netherlands Association of Universities of Applied Sciences. Retrieved from: <https://www.vereniginghogescholen.nl/english> [last checked on 04/08/2021].

94 Members of VSNU. Retrieved from: https://vsnu.nl/en_GB/dutch-universities.html [last checked on 04/08/2021].

95 Such as, for example, TNO – the Netherlands Organisation for applied scientific research or *Nederlandse*

with their distinctly marked focus on applied research and tackling societal challenges – actually, at the core of the Top Sectors approach and promised the societal benefits of Open Access, as envisioned by state secretary Dekker – were excluded from the agreement between VSNU and Elsevier. At the same time, institutions represented by the NFU, the seven university medical centres (*Universitair Medische Centra* (UMC), in Dutch),⁹⁶ occupied a special position in the Dutch research landscape. Beyond operating as academic hospitals, they are also active in doing research and are affiliated with research universities. For these reasons, although not mentioned explicitly, they were simultaneously covered by the VSNU-Elsevier agreement as part of the VSNU-represented universities. What is more, the share of journal titles in the medical sciences to be included under the “Pilot Gold Open Access” was reportedly increased after consultation with universities, according to VSNU interviewees (see section 8.2.2.3 in this chapter).

Taken together, it seems that negotiators at VSNU and Elsevier, if implicitly, had a particular image of a Dutch researcher in mind when devising the terms and conditions of this contract. Most likely, such an archetypical researcher would be employed at one of the long-established research universities in the Netherlands, performing academic research in some STM field, and publishing their own research results, preferably in international scientific journals. Although there was no reasoning provided in the contract itself for including one type of individual or institution on the list of authorised users and excluding others (or some of them), one might guess that this selection was roughly aligned with the historically most active readers or authors among Elsevier’s journals. Nevertheless, those institutions excluded from the merits of this agreement have committed themselves to actively support the national Open Access ambitions, at least officially (e.g. in the National Plan Open Science, OCW, 2017).

And yet, the question of who was deemed eligible for the pilot Gold Open Access agreement between VSNU and Elsevier can’t be easily answered by studying the terms of this contract alone. Presumably, although random individuals using computer terminals within the library facilities were treated as authorised users to read and save the full-texts of journal articles, while on the premises of one of the subscribing institutions, they would have little chance to get their APCs covered when submitting their own work to be published with Elsevier. Here, some of the supporting materials and documentation addressed to potential authors at Dutch research institutions offer further guidance.

As can be taken from the OpenAccess.nl website, which serves as a central entry page into this topic and provides a detailed overview of relevant developments in the Netherlands, the situation in March of 2017 was the following:

“Surfmarket is involved in the negotiations with the publishers and helps to inform scientists on the practical implications. They made a total list of more than 7,455 journals in which corresponding authors of Dutch universities and academic hospitals

Organisatie voor toegepast-natuurwetenschappelijk onderzoek, in Dutch. See <https://www.tno.nl/en/about-tno/organisation/> [last checked on 04/08/2021]. See also Van der Meulen (2010).

96 See <https://www.nfu.nl/nfu/feiten-en-cijfers> [last checked on 04/08/2021].

can publish in open access for free or with a substantial discount. This list is updated two times a year”.⁹⁷

Another helpful information source can be found among the numerous accompanying FAQ sheets prepared by VSNU, such as one titled “Questions about open access for scientists” (VSNU, 2016e). To clarify the terms and conditions of the recently concluded Open Access agreements within Big Deal negotiations, it presented the following questions and answers tailored to Dutch scientists:

“What changes will open access bring to scientists?

Open access means that everyone can access articles more easily and that knowledge can be shared more effectively. In most cases upfront payment (i.e., when offering articles for publication) is necessary in order to continue facilitating the peer-review assessment system for scientific articles. At the same time, the objective is for scientists not to notice this to any great extent, because as with subscriptions, it will be arranged through bulk contracts. ...

How will open access affect researchers who are not affiliated with a university or medical centre? Will they still be able to publish?

The model of gold open access changes how the publication of articles is paid for: from paying for access to articles to paying for publishing of an article. Researchers who are affiliated with a university or medical centre can follow the agreements as made within the big deal negotiations. Researchers without such an affiliation will be required to pay for the publication of an article. Of course, they too benefit from the open access transition to freely accessible publications” (ibid.).

In the end, as it appears, the APC fees were prepaid in bulk by the university consortium only for corresponding authors affiliated with one of the 14 research universities represented by VSNU or located at a UMC, making all other researchers in the Netherlands *not eligible* to opt in for the Gold Open Access offer under the VSNU-Elsevier agreement for 2016–2018.⁹⁸ But these university researchers, although falling into this privileged category, were only exempted from the regular APC payment obligation when choosing one of the pre-selected applicable journals. As commented by one of the VSNU negotiators: “But they [researchers], of course, like with Elsevier, there are only three or four subject areas where this open access [offer] is valid for [the applicable journals list], so all the others still have to pay; they have to pay if they want to publish in open access, they still have to pay a lot of money” [int_4:286-287].

At this point, I would like to return to the conceptualisation of the APC model as *a technical object* as defined by Akrich (1992). In her words, “technical objects and people are brought into being in a

97 A snapshot of this website taken on 25 March 2017 is available online via the Internet Archive's Wayback Machine at <https://web.archive.org/web/20170325230408/https://www.openaccess.nl/en/in-the-netherlands/publisher-deals> [last checked on 07/08/2021].

98 It is important to note that the terms and conditions of subsequent agreements between VSNU and Elsevier (as well as with other publishers) might vary considerably or take other factors into account. However, a detailed analysis of other agreements is beyond the scope of the present empirical case study.

process of reciprocal definition in which objects are defined by subjects and subjects by objects” (p. 222). In this empirical case under study, the APC model served for the designers of the VSNU-Elsevier agreement as a basis for the “Pilot Gold Open Access” arrangement. By specifying the amount of prepaid APCs, their distribution over the contract period, and the list of applicable journals, as well as the eligibility criteria for participating institutions, researchers, and publication types, this object came to simultaneously define its subjects.

As commented by one of the interviewees on the Elsevier side, the implications of putting the APC model at the heart of such Open Access endeavours can be seen in the following example:

“You want to publish in the best journals, the APCs are very expensive, because you pay for quality there, so, you know, Open Access sounds great, but it’s authors [who] are paying, [and] if the authors can’t pay, would it then mean that Open Access is something for the rich and for the successful universities [only]?” [int_p1:307-312].

That is, via choosing the APC model as a vehicle for transitioning to the new envisioned Open Access world, as requested in Dekker’s letter and duly implemented by the VSNU negotiation teams, representations of researchers that were supposed to make use of it – and of those who were not – were constructed at the same time. In this case, the projected users of the “Pilot Gold Open Access” arrangement with Elsevier were academic authors who have an institutional affiliation with a Dutch university, are quite knowledgeable about Open Access issues, and are willing to select the appropriate checkbox when publishing their research results in one of the selected journals. Contrary to the assertion of some VSNU negotiators claiming that swapping journal subscriptions for APCs would merely be exchanging an underlying “technical standard”, this process brings about a whole array of social issues along with it. In the worst case, as mentioned by the interviewee above, one result of this shift would mean that such “open” access arrangements would allow the participation of the rich and affluent only – whether at the national, institutional, or individual level.

In order “to uncover the links between technical choices, users’ representations, and the actual uses of technologies”, Akrich suggests “go[ing] back and forth continually between the designer and the user, between the designer’s projected user and the real user, between *the world inscribed in the object and the world described by its displacement*” (pp. 208–209, emphasis in original). This approach closely resembles the advice given in infrastructure studies and particularly in relation to the notion of “infrastructural anomalies”. Similarly to the sites and moments of “breakdown” in infrastructure, studying such instances may direct one’s attention to marginalised actors, who find themselves not fitting into predefined categories and users’ scripts, and are thus forced to find workarounds in infrastructural arrangements that are geared towards discriminating against them (Kaltenbrunner, 2015b). Such encounters between *real users* and *projected users* (or authorised users as in the VSNU-Elsevier contract language), alongside my own analytical categories such as “home-made exclusions”, as well as the multiple layers of inclusions and exclusions that are characteristic for this Gold Open Access pilot, will be explored further in the next thesis chapter (see chapter 9. *Key tensions*).

But before that, we shall take a closer look at the new “geography of responsibilities” (Akrich, 1992) that comes to light through the very same Gold Open Access arrangement. Because “like a film script,” every technical object can be said to “define a framework of action together with the actors and the space in which they are supposed to act” (Akrich, 1992, p. 208). That is, when defining a technical object, a particular set of actors and the inter-relationships between them within an actor-network are simultaneously being (re-)defined. In this case, by concluding an Open Access agreement with a fixed amount of centrally prepaid APCs for researchers at Dutch universities, negotiators at VSNU and Elsevier implicitly shaped the relations between APC-based publishing technologies and their prospective users. Or, in the words of Madeleine Akrich: “technical objects define actors, the space in which they move, and ways in which they interact. Competences in the broadest sense of the term are distributed in the script of the technical object” (Akrich, 1992, p. 216). The next section will zoom in on the (re-)distribution of competences among the actors in the academic publishing system in connection with the VSNU-Elsevier negotiations.

8.3.3 Drawing a new geography of responsibilities

As can be observed from VSNU’s list of questions and answers for scientists cited above, the publishing workflow for authors of research articles, who were both eligible for and willing to make use of the Gold Open Access offer, was supposed to function as easily and smoothly as possible. Despite the usual trade-off of free access to one’s work for the payment of APCs, as requested by most commercial publishers, the objective of integrating bulk Open Access quotas within the existing Big Deals was “for scientists not to notice this to any great extent” (VSNU, 2016e). By conducting intense negotiations with powerful publishing companies and spending almost two years of their time and energy to find a suitable agreement in the case of Elsevier, VSNU negotiators believed that they had elaborated a ready-to-go, cost-effective Gold Open Access offer for Dutch researchers. Similarly to the controversies studied by Akrich, where the designers of a photoelectric lighting kit were concerned with “produc[ing] a foolproof kit”, and so “decided not to have a separate switch in the [electric] circuit because this might become a point of illicit entry into the system” (1992, p. 211), Dutch researchers were only asked to tick the right box in order to switch their accepted manuscripts to be published in Open Access, without having to leave the regular publishing workflow.

The familiar convenient features of the conventional journal subscription system, where most institutionally affiliated researchers were well supplied with academic literature and barely had to hit a paywall, seemed to serve as a guiding principle in these negotiations. The aim of reproducing the characteristic features of ordinary Big Deals, ostensibly in everyone’s best interest, becomes even more noticeable in the interviews with VSNU negotiators. For instance, consider the following excerpt from an interview transcript, where an interviewee was asked to describe the recently signed contract with Elsevier:

[interviewee]: ... so a couple of weeks ago I thought it was good to call it ‘an institutional prepaid Open Access deal’, which is what we now have, institutional meaning that we pay from a central budget; there is no consumer-type of market for

researchers, it's not that the author who has to decide on quality, title, price, it's not that type of market that we are creating, it's like with the mobile, you know the prepaid bundles?

[interviewer]: Not that much.

[interviewee]: You can buy a mobile phone and you can buy a bundle of minutes to call and to text, right, so this is the situation: we have a son or daughter, I am the father, I am buying the prepaid bundle for my daughter or son, he is using [it], you know, to text and to call. He doesn't know about the full cost of it, but he has to communicate, that is what he or she does. So this is the same thing: universities from a central staff and a central budget buy Open Access in order for our researchers, so that they can publish in Open Access, no markets, they do not have to decide on their research budgets or their grants, whether to spend it on Open Access, and *it's funny, [the] thing is, it was the same before Open Access, because the type of deals that were then in place were subscription models, so you were entitled to read [journal] titles and many have, many authors perceived this as the air that you breathe, the university building, that's just there, no one was actually aware of the cost of it* [emphasis added].

[interviewer]: As an infrastructure in a way?

[interviewee]: And it could be a good thing ... [int_10:98-110].

That is, utilising conventional Big Deals and making them even bigger with prepaid Open Access bundles appeared not just to offer “more value” for (almost) the same amount of money as in the old days, but this approach would also inherit many familiar traits that were apparently cherished by academic librarians and researchers alike. This relates to one of the most prominently discussed aspects in the body of literature on infrastructure studies: that readily usable infrastructures, by definition, should be almost “invisible” or “transparent” when functioning well (Star & Ruhleder, 1996; Star, 1999; Star & Bowker, 2006; Karasti et al., 2018). In other words, the value proposition directed at Dutch researchers in the VSNU-led negotiations was to opt in to publish their journal articles in Open Access as seamlessly and as conveniently as possible, without demanding much additional effort or resources from their own budgets.

However, to deliver such a compelling offer at the free disposal of scholars at Dutch universities and to ensure its smooth operation, much *invisible* work had to be organised, too. At the same time, acting on a maxim of researcher's convenience also meant that a number of crucial decisions were anticipated in advance and forestalled by the designers of the Open Access agreement. Here again, looking at this arrangement between VSNU and Elsevier through the lens of a technical object offers some illuminating insights. As observed by Akrich in interactions between technical objects and their users, the “technical device reduces negotiations between the two parties to a minimum because it directly suggests a pre-negotiated agreement” (1992, p. 212).

That is, with the Open Access agreement presented as a result of the VSNU-Elsevier negotiations, where a fixed number of APCs were prepaid for authors at Dutch universities, all these decisions had already been made in advance. From this it follows that Dutch researchers were assumed to be

interested (or otherwise obliged) in publishing their articles in Elsevier's journals *and* in Open Access, that the publisher would likely accept many of those manuscripts for publication, that research organisations (or their funders) would be able and willing to cover associated fees, and that their own libraries would be in a position to handle related workflows and administrative procedures.

Furthermore, as explained by Akrich (1992, p. 207), the technical objects, once in place, can be said not only to generate forms of knowledge and moral judgements, but also to distribute competences and responsibilities. In her original wording:

“If most of the choices made by designers take the form of decisions about what should be delegated to whom or what, this means that technical objects contain and produce a specific *geography of responsibilities*, or more generally, of causes. To be sure this geography is open to question and may be resisted. Nevertheless, it suggests that new technologies may not only lead to new arrangements of people and things. They may, in addition, generate and ‘naturalize’ new forms and orders of causality and, indeed, new forms of knowledge about the world” (ibid., emphasis added).

Through the extension of regular Big Deals with an Open Access publishing arrangement, with an APC model at its core, all involved actors were assigned a particular role. To make the resulting Open Access offer work in practice for Dutch researchers, numerous procedural steps had to be swiftly and competently taken care of. Starting from the authors, and assuming that they opted in for the Gold Open Access offer in the publishing workflow, their institutional affiliation and eligibility for this choice had to be verified. This step was to be performed by the staff of their library or the implementation team at the university consortium on a special online platform, provided by Elsevier. For this purpose, the names, institutional email addresses, and the IP ranges used for submitting the manuscripts had to be matched and the article-level data checked. If all conditions were met, Elsevier would not levy an APC invoice on the corresponding author at one of participating institutions under this contract, but would charge this publication to the “Pilot Gold Open Access” quota. Hence, each technical object comes with and produces social relations, along with it.

Obviously, as argued by Akrich (1992), things could, in general, always be arranged differently. For instance, one can think of allotting each researcher at a Dutch university their own APC budget, to be spent at their own will, or abandoning the APC model altogether and choosing to go for fully subsidised partnership programmes instead, or cancelling Big Deals with multi-national scientific publishing giants altogether. What would an alternative distribution of roles and competences look like then? Borrowing from Akrich, taking a different course of action would imply “delegating a whole series of tasks to additional (legal, human, and technical) structures” external to the technical object in this current agreement (1992, p. 212). That is, choosing another problem-solution understanding and exploring the *roads-not-taken* in the Open Access negotiations (such as taking into account non-university researchers, smaller publishers, or non-APC models) would also mean that a different kind of relationship between the object and its users would be necessary.

Yet, in the present empirical case, these considerations remain a sort of thinking out loud at a hypothetical level. The APC model was not abandoned, and Big Deals with major commercial publishers have been expanded and made even bigger. As in the old days of the (still dominant) journal subscription model, many of the aforementioned responsibilities have remained essentially the same. Researchers still prefer to submit their work for publishing with a handful of major scientific publishers, their manuscripts still need to undergo a critical peer review arranged by journal editors and based on the voluntary work of other academics, and the libraries still need to make this literature accessible to their users and discoverable in their indexes and search catalogues. Contrary to the claims and aspirations in the letter of state secretary Dekker (OCW, 2014) and VSNU's promotional materials (VSNU, 2016b, 2017), the Open Access agreements resulting from these politically driven negotiations do not appear to have yielded a radically disruptive innovation in the world of academic publishing. Instead, they seem to resemble another salient feature of infrastructures, that of being fixed in "modular increments", not all at once or globally (Star, 1999). As observed in the VSNU-Elsevier negotiations, an incremental tinkering within tightly delimited margins of manoeuvre takes place, preserving many elements of the continuity and stability of this infrastructure (see also Delfanti & Pitrelli, 2015).

Having said this, there was one major difference that affected all actors to a greater or lesser extent and that started to reshape the whole geography of responsibilities as compared to the prior workings in academic publishing. Following Akrich, by *naturalising* the APC model as the core element of the "Pilot Gold Open Access" arrangement, for which authors were to be charged a fee when publishing their work in Open Access, a new form and order of causality was entrenched. Through this orchestrated transition from a *pay-to-read* to a *pay-to-say* regime, a jolt through the whole systemic logic towards this new causative (in the sense of "polluter pays") principle would ensue.

While it may have made little difference, whether to book revenues for licensing fees or for APCs for established commercial publishing companies, or in words of an interviewee at Elsevier, it differs little whether the money is put into "the left pocket or the right pocket" [int_p2:543], some actor groups are likely to experience more far-reaching implications due to this switch. Most notably, researchers excluded from the list of eligible authors would have to find alternative means or venues for how and where to publish their work under an extensive APC regime. Moreover, academic libraries, which traditionally cared for the needs of their readers and spent decades if not centuries building up local collections on their premises, whether physically or digitally, would have to undergo a structural change. If required to shift their budgets from content acquisition to covering APCs for affiliated authors instead, catering to the needs of students or other user groups at these libraries would inevitably be pushed to the background. I shall return to these questions when examining the particular challenges faced by academic libraries through the lens of infrastructural inversion in *Chapter 10*.

Clearly, the potential consequences of the proposed shift to the new Open Access world via this particular implementation model require more careful consideration and a more nuanced view than is often the case in advocacy materials propagated by either side of the negotiations. But we

might also expect a whole array of frictions to emerge when confronting the new Open Access logic via the payment of APCs with the deeply rooted missions of affected actors in the various subsets of the academic publishing infrastructure and their typical workflows. Examining key areas of tensions in this field in light of these structural changes will be the main focus of the next chapter. Before moving further, the following few pages will provide a short commentary on the proposed transition from journal subscriptions to Open Access and the self-confident positioning of Dutch science policy-makers as studied here.

8.4 Interim discussion: Lost in translation, stuck in transition?

After some years of negotiations between VSNU and major scientific publishing companies, following an ambitious Open Access policy announced in Sander Dekker's letter to the Dutch parliament (OCW, 2014), another letter to update the MPs on related activities was due. In his renewed address to the House of Representatives in January 2017, titled "Progress of open science", the state secretary provided an overview of achievements in Open Access and other areas, as well as what would be the next step in the near future. Looking back at some of the milestones, Dekker explained:

"In 2013, open access to publicly financed scientific publications was put on the national political agenda with the goal of drastically changing the system of scientific publication and making the transition to open access. I called on the universities to include the aspect of open access in their negotiations with publishers and their communication with the academic community. Talks were also held with major publishers regarding their role in the negotiations. ... By 2018, the current contracts with seven of the major publishers will enable that at least 57% of Dutch publications published by these companies will be available via open access." (OCW, 2017, p. 4)

Beyond praising the "successful negotiations" with these publishers, Dekker further cited some honourable mentions of Dutch efforts in international news articles. Without hiding his pride, the state secretary continued:

"With this, the Netherlands has set an example for other countries. Our success has inspired countries such as the United Kingdom, Finland and Austria in their recent and upcoming negotiations with scientific publishers. In this way, our country has made itself a leader in the field of open access" (ibid.).

Dekker continued by arguing that in order "to fulfil the Netherlands' reputation as a leader in open science and to benefit as quickly as possible from the advantages that open science provides", it was necessary to quickly take further action and "for all parties involved to play their part" (OCW, 2017, p. 1). Yet this call was not limited to domestic "stakeholders" alone. Instead, the state secretary spoke of "international challenges" and endorsed "the *European* objective to make open access the default by 2020" (ibid., p. 8, emphasis added) – which, *nota bene*, was brought about during the Dutch Presidency of the EU Council in the first half of 2016 itself.

At the same time, the theme of taking collective action has become ever more prominent in VSNU

communications as well. While its first electronic magazine (e-zine) detailing the Dutch ambitions and related developments bore a markedly self-confident title, “The Netherlands: paving the way for open access” (VSNU, 2016b), followed up by an emphasis on “Greater impact with open access!” in the year after (VSNU, 2017). The next e-zine was dedicated to outlining the “Roadmap open access 2018 – 2020”, in which “international collaboration” has become one of “the five pillars of open access” (VSNU, 2018a, p. 11). Finally, the last e-zine in this series was even titled “Open access – International alignment” (VSNU, 2019a), suggesting that taking collective action internationally was now seen as an absolute necessity.

For those wishing to learn more about importance of international collaboration, a more detailed description of this and other *pillars* was offered. Once again, it started with stressing the Dutch pioneering role: “Although the Netherlands remains one of the pioneers in the open access arena, steps are also being taken outside the Netherlands towards full open access for scientific publications” (VSNU, 2019a, p. 8). A quick “tour” of recent developments in various world regions was then given, with a compulsory stop in Europe:

“Most of the open access developments come from Europe. The *UK is hot on the heels of the Netherlands* in terms of the number of articles which are published on an open access basis” (VSNU, 2019a, p. 9, emphasis added).

This statement was rounded up with some updates on recent negotiations with major scientific publishers in Scandinavian countries. Among others, readers were informed about the termination of an agreement with Elsevier in Sweden and a new subscription agreement with an Open Access pilot programme with the same publisher in Finland (*ibid.*).

The eagerness of Dutch science policy-makers and negotiators to popularise their own approach to opening up access to scientific publications was also evident in the regular Open Access newsletters sent out by VSNU. In its 20th edition on 5 July 2016, subscribers of this newsletter were even presented with a map detailing the travel route of VSNU’s delegates on their roadshow through Europe (see *Figure 6*). Under the headline of “International: open access *for the rest of Europe*” (emphasis added), a short text prepended the visual illustration:

“The Netherlands is at the forefront of open access and is eager to share its knowledge in the field with other countries. In the past months, the members of the negotiating teams of the VSNU and UKB have travelled through Europe to share knowledge about open access. The map below shows where they have done so.”⁹⁹

99 See VSNU Open access newsletter Nr. 20 (5 July 2016). Available online at: <https://vsnu.nl/files/documents/FocusAreas/Research/OpenAccess/Newsletter%20Open%20Access%2020.pdf> [last checked on 07/08/2021].



Figure 6: Negotiators' travels through Europe (VSNU, 2016)

One of the countries colour-coded on this map seemed to play a particularly important role for Dutch negotiators. As testimonials and news from the UK were routinely included in VSNU's communications, it appeared to also serve as a certain performance benchmark for many actors in the Netherlands. For instance, the comparison of the number of Open Access publications between the two countries over the past years (as cited from the VSNU e-zine above) almost reads as if it were written with the zest of an adventure. But even more importantly, the Finch Group's report (2012) that served as a basis for the national Open Access strategy adopted by the UK government was repeatedly quoted in Sander Dekker's letter to the Dutch parliament as its guiding light (OCW, 2014; see also sub-chapter 7.1.2).

Interestingly enough, reports on experiences with combining journal subscription Big Deals and APCs for Open Access in one bundle contained less cheerful overtones in the UK itself. As described by Liam Earney, director of Jisc Collections which is responsible for the licensing and negotiation of agreements for digital content on behalf of UK universities, roughly equivalent to the SURFmarket organisation in the Netherlands, such agreements have become “increasingly contentious with institutions, advocates and publishers” (Earney, 2017, p. 11). In particular, UK research institutions have concluded a number of “offsetting agreements” with scientific publishers “that explicitly link subscription and APC payments, seeking to reduce one as the other grows”. In other words, these agreements seek to *offset* APCs paid against subscription fees, in order to avoid the double-dipping issue of paying twice for publishing Open Access articles in licensed hybrid journals (ibid.; see also sub-chapter 5.2 *Defining Open Access and its many (sub-)species*).

On the one hand, such agreements were said to “represent a pragmatic response that

acknowledges the current primacy and persistence of the big deal, but does not accept it as the end-point or any type of ideal” (ibid., p. 18). Yet on a less positive note, they were criticised for creating *a bigger Big Deal* and implicitly accepting the flaws in and dependencies on a few major publishers in the subscription-based state of academic publishing. As explained by Earney (2017, p. 14, emphasis added):

“The preponderance of these status quo publishers is another of the issues with hybrid [journals] and offsetting [agreements]. A review of the publishers receiving the bulk of the expenditure on APCs suggests that *far from posing a threat to those status quo publishers, it is a very profitable additional revenue stream* and the same publishers who dominate the subscription journals market dominate the OA market as well. ... this has been used to argue that the current incarnation of the market for APCs is displaying the same market dysfunctions as the traditional market for scholarly journals.”

Similarly to the situation in the Netherlands, newly compiled data on subscription revenues for ten large publishers from UK research institutions was marked by Elsevier’s dominance (albeit multiplied by a factor of 2 to 3). Yet even more notably, the APC expenditure for responding institutions was shown to have rapidly increased. For instance, APC payments to Elsevier skyrocketed from roughly 0.6 million GBP in 2013 to almost 1.8 million GBP in 2015 (JISC et al., 2016, cited in Earney, 2017, p. 14). In light of additional criticisms such as the lack of transparency of the true cost of APCs in various mixed agreements as well as frustrating administrative burdens with different schemes, Earney (2017, p. 21) concluded:

“Increasingly, I have come to believe that the major failing of offsetting agreements lies in their assumption and continuation of the norms that govern the negotiation and implementation of existing big deals. Having been conceived as a genuine attempt to undermine and move beyond such arrangements, it is unfortunate that they have far too easily come to be regarded as ‘business as usual’ and even contradictory to the objective of open access”.

In summary, these novel agreements have received criticisms more broadly, despite their increasing presence. There are arguments to be made that they are neither transitional, as is commonly stated, nor are they particularly transformative, as they tend to reinforce rather than challenge the incumbent structures of power within academic publishing. To be sure, it is important to note that a major factor for the pronounced upwards trend in APC expenditure among UK institutions was identified as the introduction of the Open Access block grant in 2013 (ibid., p. 12). This fact had already been lamented in Dekker’s letter:

“The British Government has accepted the Finch Group’s recommendations and earmarked GBP 10 million for open access. Initial indications are that this investment has not accelerated the switch to open access but instead prolonged the transitional phase” (OCW, 2014, n.p.).

Therefore, “drawing on lessons learned abroad”, which indicated that “making extra funding available for open access has not speeded up the transition elsewhere”, Sander Dekker and his

advisors chose to implement the Dutch Open Access transition within regular budgets for scholarly literature and guided by “a clearly defined target” instead (ibid.). Keeping with these provisions, the resulting agreement between VSNU and Elsevier for 2016–2018 was described by VSNU negotiators as receiving “more value” for only a slightly higher amount of money than was previously spent on subscriptions alone. As commented by one interviewee, “we pay a little bit more, but it’s the lowest percentage for many years, and we get Open Access as an extra” [int_4:307].

That is, this Dutch Open Access agreement was not about offsetting APCs against subscriptions, but about incorporating a limited allowance for Open Access publications within the total sum to be paid by Dutch universities to Elsevier. To capture the variations between different kinds of such contracts under the umbrella term of “transformative” agreements, other names and schemes for combining journal subscriptions and Open Access publishing fees into one bundle have emerged over recent years, including such labels as “read and publish” agreements. Based on a recent analysis of three dozen such agreements that were recorded in the registry of the “Efficiency and Standards for Article Charges” (ESAC) initiative run by the MPDL together with other partners¹⁰⁰, a group of researchers concluded:

“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” (Borrego et al., 2021, p. 216).

While the ESAC initiative insisted on transformative agreements being “temporary and transitional” (ESAC, n.d., cited in Borrego et al., 2021, p. 226), “including the renaming of offsetting agreements to ‘transitional’ to emphasize that such agreements should become unnecessary as soon as possible and should not be considered a permanent feature of the negotiation landscape” (Earney, 2017, p. 18), there is little confidence that they have answered the intended purpose so far. Furthermore, one could argue that such agreements often lack any “transformative” elements in general.¹⁰¹ Taking as an example the “Pilot Gold Open Access” agreement under the VSNU-Elsevier contract for 2016–2018, while researchers at Dutch universities were allowed to publish their articles in Open Access in selected hybrid journals, there was no objective to be found in this contract to actually *transform* those journals from a subscription to a fully Open Access model after reaching a certain threshold.¹⁰²

As observed by Earney (2017, p. 18), the “fact that many [agreements] are billed as ‘pilots’ not only reflects publisher wariness, but that of consortia [of universities and libraries] as well”. On the side of academic institutions, there seemed to be plenty of reasons for being cautious (ibid., p. 21):

100 See <https://esac-initiative.org/> [last checked on 08/08/2021].

101 To illustrate this point, I have applied “the dead horse theory” elsewhere (see Šimukovič, 2019a, p. 15).

102 I would like to thank Andreas Ferus for bringing this point to my attention early on in my analysis.

“Even those consortia and institutions that negotiate offsetting agreements are wary of them and of entering into new ones on account of fears that they will not save any money, are inefficient and costly to manage or implement, and as time goes on seem to offer meagre opportunity for underpinning a widespread transition to OA”.

Some of these fears were also echoed in interviews with VSNU negotiators. With respect to the experimental pilot character of recent agreements with major scientific publishers, one interviewee commented:

“Well, we get a lot of open access and we get it basically on the same financial conditions, and as long as it’s seen as a pilot, you may fear that at some point, participants in this pilot, like publishers, would say ‘*now the pilot is over, we draw our conclusions*’. They may say [the] ‘pilot was unsuccessful, we stop it, no more open access, or you can keep your open access, but then it’s at an extra cost’. [These] types of conclusions make it not sustainable, for sure, but if other countries in Europe would come to similar types of deals, then, at least, the pilot is geographically more widespread and more robust, and we may expect that that would be to our advantage” [int_10:53-59, emphasis added].

Therefore, in order to help sustain their own fragile successes, many members of the VSNU negotiation team argued for the need to mobilise *collective action* on an international (or at least European) scale. From the perspective of another interviewee, this would create a much stronger bargaining position for negotiators in the Netherlands and beyond:

“If the 200 top universities of the world [would] collectively decide [that] on January 1st 2018, we all go, we only publish in open access, and we will have provided, we will force all the publishing houses to make every publication open access available, then it will be a completely different situation” [int_12:84].

However, as one might guess, there seemed to be little chance that such a consolidated approach would emerge in the near future. And even if so, from the perspective of this interviewee, some publishers might still attempt to resist switching their business models to Open Access:

“But, I think, to a large extent, some publishers will refuse this, because they see also our collective action problem; they will gamble that universities will not sufficiently collectively organise themselves across the globe, to make this happen, and as long as they, as we can’t do that, they may think [that] we won’t go any further. Well, we’ll see, we’ll see, it’s an interesting game, it’s an interesting negotiation game, yeah” [int_12:273-276].

At the same time, some negotiators showed their understanding of the difficulties faced by the publishers themselves. As commented by another member of the VSNU negotiation team:

“We shouldn’t bring these two [positions] where [there is] the mean, awful publisher, that tries to make as much money as possible from universities; that doesn’t do justice to their situation. I mean, they, of course, face many, many customers in many countries, with so many different open access policies, that they do have an argument

when they say ‘well, it’s difficult to find out how we can service universities with open access, some favour Green, others Gold, Diamond [models], whatever, but this doesn’t work if there is not one standard’” [int_10:327-329].

Nonetheless, all interviewees on the VSNU side seemed to agree that ensuring a collective and, if possible, unified action from consortia of universities and research institutions around the globe was a crucial condition for solidifying earlier achievements. Because, in the words of another negotiator, “if nobody is able to get the same results as we did, then it will not fly, we will just fall back in our old situation” [int_4:191].

At the same time, there was a certain fear that negotiators in other countries might lack a reasonable rationale to follow suit or might even gain somewhat unfair advantages by not jumping on the same bandwagon as the Dutch delegation. Referred to as “the free-rider problem”, the issue was the following: if Dutch scientific publications were to become freely accessible to a large extent, as well as those of other neighbours with a Gold Open Access policy, some less-intensive research countries and institutions might start to demand rebates on their journal subscriptions or even cancel Big Deals altogether, without switching their own research “outputs” to Open Access, thus not contributing their fair share to this transition. However, to counteract this argument, which was reportedly used by the publishers, a VSNU team member asserted: “I have asked the Finnish, I have asked the British, I have asked the German negotiators, I said, ‘now that you are negotiating, are you, at this time, asking for a refund, because ... the Dutch output is freely accessible?’ and they said ‘of course not’” [int_10:341].

Even so, whether or not such bigger Big Deals were the most promising route for achieving “the goal of drastically changing the system of scientific publication” in the first place, as proclaimed by Sander Dekker (OCW, 2017, p. 4, cited above), was still an open question. Beyond the criticisms aired by negotiating consortia in the UK and elsewhere, others have argued that attempts to substitute APCs for subscriptions are comparable with a “cure [that] is worse than the disease” (Shulenburger, 2016). A glimpse into the uptake levels of the “Pilot Gold Open Access” agreement with Elsevier in the three years from 2016 to 2018 leaves even more room for doubt.

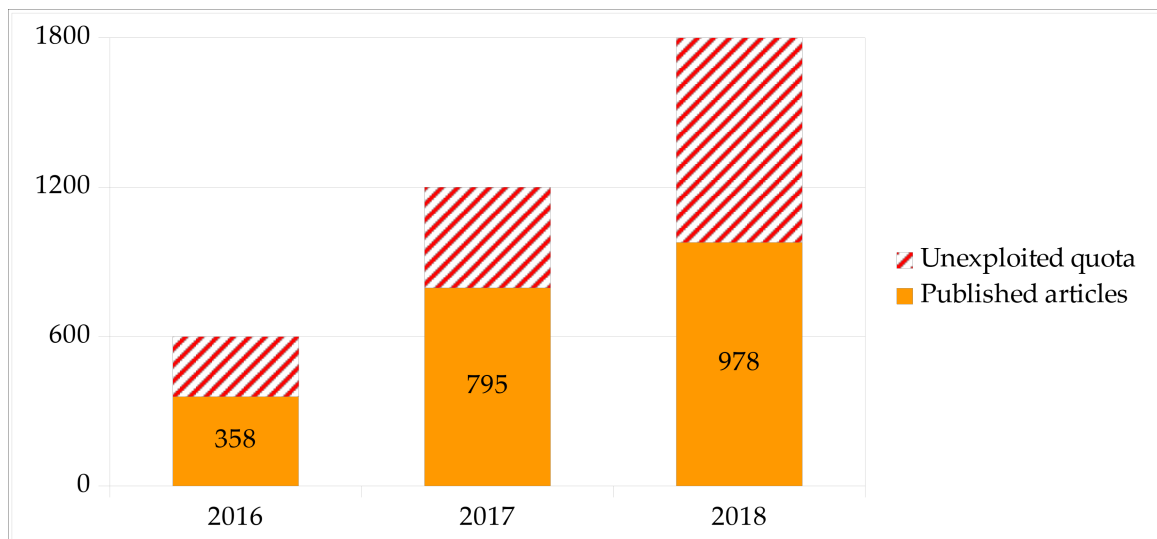


Figure 7: Number of Open Access publications under the VSNU-Elsevier agreement in 2016–2018

As can be seen from *Figure 7*, this extra Open Access publishing offer didn't prove particularly popular with Dutch researchers. Instead of 600 articles that were agreed upon with Elsevier in 2016, 1200 in 2017, and 1800 in 2018, eligible authors opted in only 358, 795, and 978 times, respectively.¹⁰³ That is, the estimated and prepaid quota of scientific articles in hybrid journals that were available to be published in Open Access with no APCs for their authors were only exhausted by less than two thirds, despite VSNU's expectation "to see an explosion in Open Access growth" by the end of 2018 (VSNU, 2015d).

In view of this sluggish response, in May 2017 VSNU launched a promotional campaign, "Open up to open access", to raise awareness about available Open Access options among Dutch researchers.¹⁰⁴ As explained on the blog of the Centre for Digital Scholarship at Leiden University Libraries, the rationale for this initiative was the following:

"On May 15th the VSNU, the association of universities in the Netherlands, kicked off a new Open Access awareness campaign titled 'Open Up to Open Access!' This [is] to promote publishing open access among researchers. The genesis of this new campaign lies in the underutilisation of the Open Access options the VSNU negotiated for in the newly signed big deals, such as the ones with Springer, Taylor & Francis, and Elsevier. Many authors don't realise that they might be able to publish their articles in Open Access and have their article processing costs covered by deals already in place. To combat this situation, the VSNU created the Open Up to Open Access campaign."¹⁰⁵

Yet there were still even more inconsistencies in the Dutch "success" story with Open Access.

¹⁰³ Based on data from the national Open Access monitor, available at <https://www.openaccess.nl/en/in-the-netherlands/monitor> [last checked on 10/08/2021].

¹⁰⁴ See <https://www.openaccess.nl/en/promotional-materials> [last checked on 10/08/2021].

¹⁰⁵ See <https://www.digitalscholarship.leiden.nl/articles/open-up-to-open-access> [last checked on 10/08/2021].

Given this slower than expected uptake, it comes as a surprise that the already ambitious target year to switch to a fully Open Access system by 2024, as initially declared by state secretary Dekker (OCW, 2014), was antedated by several years to 2020 during the Dutch Presidency of the EU Council (Amsterdam Call, 2016). That is, depending on the policy document, the Netherlands appeared to have two different target years for the same goal, at the same time.

When asked about this discrepancy – and specifically regarding which deadline was the ultimate target for VSNU negotiation teams – one of the interviewees responded:

“Our targets derive from the original political target, that is 2024, and so, in our opinion, if that's the target, and there is no specific explanation on how to reach this, then it is simple mathematics, you have to grow linearly 10% each year ... but politics is, in a day, they have, they see things differently. I quite often asked about how the 2020 target relates to the original 2024, the only explanation that I get is ... from those who are involved with working with the minister, is that, they said, ‘well, in the European Union, you just can't set a target on 2024, if it's now 2015, 2016; 2024 is too far away’” [int_10:25-34].

As it turns out, the “Dutch” and the “European” target years had to be consolidated at first, in order to move from a national to an international stage and help mobilise action among European neighbours and EU member states. This layer of translation also meant that, for tactical reasons, Open Access goals had to be aligned with broader issues in EU's science policy-making, such as adjusting the language and putting new emphasis on strengthening the competitiveness of the European research area through Open Access (e.g., Amsterdam Call, 2016). After this side trip to EU politics, achieving full Open Access to scientific publications as the default by 2020 was increasingly marketed as “the European objective” also in domestic debates in the Netherlands (OCW, 2017, p. 8) – if propagated most actively by Dutch science policy-makers themselves (see *Chapter 7.3.4*).

Yet even if politics appeared to be “a different reality” [int_10:32] than the practical implementation of such targets, according to this interviewee, one would quickly stumble upon further irregularities. Most notably, “speaking in one voice”, a feature that was routinely highlighted in VSNU brochures as one of the cornerstones of “the Dutch approach” (VSNU, 2016b), was not also a given among the VSNU members themselves. Despite strong political support for the Gold Open Access road and publications in hybrid journals, many Dutch universities maintained their preference for the Green road and self-archiving of scholarly publications in repositories under their own institutional Open Access policies.¹⁰⁶

106 For instance, since 1 April 2015, researchers at the Eindhoven University of Technology (TU/e) are “requested to register all peer-reviewed journal articles and to submit the author accepted version (post-print) in the TU/e Repository”, which is also a requirement for a publication to be eligible for the Academic Annual Awards. In an accompanying letter to TU/e researchers, explaining the introduction of this policy (dated 25 March 2015), a responsible staff member makes a reference to political targets, yet also distinguishes the university's own position: “The TU/e promotes making research output freely available via the TU/e Repository, also known as green open access. The TU/e Repository is a worldwide freely accessible full-text publication database. There are no costs involved in making your

Finally, this discussion would be incomplete without adding the voice of publishers. When asked to pass their own judgement on the agreement with VSNU, one of the interviewees at Elsevier recalled hearing critical voices elsewhere:

“There are prominent statements in Germany, like at the book fair, they say ‘we are not going to have such a bad deal as in Holland’. They call it a bad deal ... I mean, we were both happy, we even had a dinner to celebrate this agreement a bit [together with the lead negotiator at VSNU]; we clapped ourselves on the back, that we have made it so well, and then somebody comes from Germany and says ‘we don’t want to have such a *** deal like the Dutch’ ... of course, you can want 100% open access from day one, but this is not going to work anyway” [int_p2:830-852].

As commented by this interviewee, it was still to be seen whether such experiments with Big Deals in various countries would prove successful, or whether some consortia had overpaid for their Open Access arrangements. In his words, one might wait and wonder “who will pull a wry face” [int_p2:1240] at the end of the day.

As observed by Earney (2017, p. 21), “Those involved in such negotiations are undoubtedly acting in good faith and seeking the best possible arrangements for the institutions on whose behalf they act”. Yet translating such well-meaning intentions, as can be seen in this particular case, might also produce a whole array of less favourable unintended (or, sometimes, indeed, deliberately intended) consequences. Therefore, as reflected by another interviewee, even for Open Access advocates, their relationship status with this topic is rather complicated:

“Well, I struggled for ten years now, or more than that, am I pro or con open access, and to what level, and it’s very difficult... sometimes I say ‘*you can’t be against open access*’, but at the same [time], if you look at all the consequences it can have, then it’s getting more difficult” [int_2:357-359; emphasis added].

To sum up, in this empirical case under study I have shown how the seemingly polar opposites of the deficient journal subscription system and the promised new Open Access world resulted in – at first sight – a very unlikely marriage between the two. Instead of abandoning the much-criticised practice of bundling journal subscriptions into packages, the agreements between universities and publishers in the Netherlands led to expanding such Big Deals into even bigger constellations that would now combine journal subscriptions and a fixed number of Open Access publishing fees into one bulk prepayment.

When taking a closer look at the routes chosen by science policy-makers and the negotiators commissioned by them, and, more importantly, those who were not, these arrangements seem to indicate a deeply conservative approach. First, by *doing business* for Open Access with major legacy publishers, they did not address the routinely lamented power imbalances between individual research institutions and multi-national publishing giants. Instead, such expanded prepayment

articles open access via the Repository TU/e.” See <https://www.tue.nl/en/our-university/library/support-by-the-tue-library/scientific-publishing/open-access/comply-with-open-access-policies/tue-open-access-policy/> [last checked on 08/08/2021].

agreements appear to have further consolidated the powerful positions of and increased dependency on the journal portfolio of a few mighty commercial companies.

Second, prioritising major publishers in such negotiations leaves an ever smaller share of the cake for everyone left behind. This includes not only smaller, non-profit or specialised publishing houses that often serve less-resourced research fields, but also scholar-led journals and publishing collectives run by academics themselves, which rely on different funding sources other than the extensive exploitation of an APC model while often operating at substantially lower costs. Ironically then, the party entrusted by decision-makers with bringing about a better publishing world was the one that was most interested in keeping the status quo and its incumbent role therein. Moreover, outsourcing this responsibility to legacy publishers suggests trusting them even more than the research communities (or academic libraries) themselves, despite their backbone function in supplying new manuscripts and doing the actual quality assessment and peer review work. Finally, targeting established and “prestigious” academic journals, mostly operated by major publishers, further implies the deployment of citation-based metrics as a proxy for esteem and the quality of research work in institutional evaluation practices.

Taken together, despite the revolutionary rhetoric of such allegedly trailblazing agreements, more elements of the old publishing order seem to have remained stable than were modified. The discursive silence with regard to the effects and repercussions of academic capitalism (Slaughter & Rhoades, 2004) and audit cultures (Strathern, 2000) in academia suggest their acceptance as the cornerstones of the “new” Open Access world yet again. Examining the promises and actual implementation of the transitional scenario will therefore help to relate the empirical case study to the *bigger picture* in my further analysis and research work. What elements were to be preserved and what would be exchanged (and why)? Whose livelihoods were to be sustained (Callon, 1986)? Or, quite bluntly, what was ultimately at stake?

Borrowing from Madeleine Akrich once again, it is “only in the confrontation between the real user and the projected user” that the importance of various design choices comes to light (1992, p. 210). Technical objects – such as the APC model at the core of these Open Access agreements – not only “may change social relations, but they also stabilize, naturalize, depoliticize, and translate these into other media. After the event, the processes involved in building up technical objects are concealed. The causal links they established are naturalized” (ibid., p. 222). That is why it is important to open up this black box and shed light on the curiosities and serendipities in their making. By analogy, a promising realm for getting closer to the underlying values and basic social processes beyond the surface of Open Access negotiations is to take a closer look at the often conflicting lines of argument that are used in regard to these agreements, and particularly in confrontations between imagined or projected Dutch researchers and actual researchers in the Netherlands who were interviewed for this PhD thesis. Exploring these key areas of tensions will be the main focus of the next chapter.

To be fair, the fact that the importance of the neglected and overlooked characteristics of a technical object “only became evident in the interaction between designers and users was not the

result of chance or negligence. Each decision actually taken made sense in terms of design criteria” (Akrich, 1992, p. 210–211). Likewise, in this empirical case under study, Open Access agreements between university consortia and major scientific publishers – with the APC model at their core – seemed to make sense in light of the circumstances and framework conditions that they were facing. Therefore, as an analyst, I must be conscious of my own epistemological-methodological advantages of being able to peer back into time and look at the negotiations with the acuity of hindsight. As argued by Akrich (ibid., p. 222), “We are ourselves no more innocent in this respect than anyone else. For we are able to say that technical objects changed, stabilized, naturalized, or depoliticized social relations only with the benefit of hindsight”. Or, in the words of the interviewee who was involved in writing the initial letter for Sander Dekker at the beginning of this story, the preference to go for Gold Open Access and to rely on agreements with major scientific publishers “was, of course, partly thought [up] from the world as we knew [it back] then” [int_16:341].

9. Infrastructural “anomalies” and moments of “breakdown”: Key areas of tension

Triangulating viewpoints: A conceptual-methodological note for this chapter

In the foregoing chapters, I have taken an empirically dense tour through the first stages of the Dutch Open Access odyssey. From the making of Sander Dekker’s letter, to the dynamics it has triggered, to finding an agreement between VSNU and Elsevier, I have analysed the manoeuvres involved in these processes and their characteristic features. This was followed by an examination of the outcome of these negotiations through the conceptual lens of “a technical object” (Akrich, 1992) and a closer look at how an archetypical image of a Dutch researcher was constructed and a new geography of responsibilities between various actors (re-)drawn.

Since I have primarily focused on the design and translation processes that took place ahead and during the making of the VSNU-Elsevier agreement, my analysis has predominantly dealt with the empirical materials collected from and the interviews with its *designers*. In the current chapter, in turn, I consider the reception of this agreement among researchers themselves, and particularly examine their views and deliberations with regard to (not) making use of the Open Access options pre-arranged for them. Most notably, while the VSNU negotiators claimed to act on the behalf and for the benefit of Dutch researchers, reactions among academic authors as the projected or actual *users* thereof were not necessarily euphoric, to say the least. To the surprise and disappointment of VSNU negotiators, only about two-thirds of the contractually agreed and prepaid Open Access quota in the arrangement with Elsevier were used during its initial period in 2016–2018. The relatively low uptake level of this gratis Open Access offer thus appears to be symptomatic of the ambivalent standpoints and mixed reactions among many interviewed researchers in the Netherlands.

To examine these discrepancies between the official reading of a success story of the VSNU

negotiations with major publishers, and this rather sobering result of the agreement with Elsevier, I conducted more than 20 interviews with researchers in various fields and at different career stages. The interviewed researchers included both those who did make use of this Open Access pilot arrangement as well as those who didn't (see also sub-chapter 2.2 *Materials and methods*). My main objective was to learn more about their reasons and motivation for (not) opting in to this offer which was cost-free to them, as well as their general views on claims about making scientific knowledge and publications more openly accessible to broader publics. Since some of the issues discussed by the interviewed researchers emerged as overarching threads that were partially also addressed by the interviewees at VSNU and Elsevier, excerpts from the interviews with the latter groups will be considered in this chapter, too.

The theoretical backdrop underlying this part of the empirical analysis is largely guided by the overall (re-)infrastructuring framework. Following the common advice given in STS and infrastructure studies to look for controversies or points of friction, my task was to find a distinct site or moment of “breakdown” that would expose the logic and implicit rules of the academic publishing infrastructure. However, when studying (information) infrastructures ethnographically, as Karasti et al. (2018, p. 272) suggest, “the ‘breakdown’ is never as simple as a light not turning on as you flip a switch”. Instead, “you may need to ‘fix’ the public, individual identities, social groups as much as technical artifacts” (ibid.). Or, as in this particular case, the many human and non-human elements present in the workflows and negotiations in and around academic publishing might need to be “fixed” at first for such special Open Access arrangements to work.

My answer to this challenge is precisely to conceptualise the underexploited quota of Open Access publications under the VSNU-Elsevier contract for 2016–2018 as a moment of *breakdown* in the present empirical case.¹⁰⁷ Taking a closer look at the configuration of actors, their inter-relationships and other characteristics in this breakdown serves as a crucial entry point for addressing the otherwise invisible features of the academic publishing infrastructure. Furthermore, exploring the particularities in such breakdowns helps to “defamiliarise” some parts of an infrastructure and interrupt its transparency, while unearthing the social norms, marginalisations, and classification schemes inscribed therein (Kaltenbrunner, 2015b). However, as argued by Karasti and Blomberg (2018) and other scholars (e.g., Larkin, 2013), dealing with the issue of invisibility when studying infrastructures might be a tricky task. For when these are “short of breakdown, infrastructures tend to remain invisible at the level of use and experience” (Harvey et al. 2017, cited in Karasti & Blomberg, 2018, p. 250). This is particularly relevant for capturing the reasons behind the low uptake of Open Access publishing options among Dutch researchers as their users – an offer which, at first sight, appeared to have only beneficial effects for all involved parties, and which therefore left the designers of the VSNU-Elsevier agreement somewhat puzzled about this unexpected outcome.

As explained by Penny Harvey and colleagues, infrastructures tend to fail “due either to internal

107 I would like to thank Wolfgang Kaltenbrunner for initially suggesting this point.

disruption or because of a breakdown in the relations between the infrastructure and the domain of activity it is expected to sustain” (Harvey et al., 2017, p. 5). They further stress the importance of a tension between “engineered” (i.e. planned and purposefully crafted) or “non-engineered” (i.e. unplanned and emergent) activities in infrastructural work. In their words, such tensions introduce new complexities “because an engineered system might break down, or fail to deliver as intended, yet continue to give rise to emergent effects” (ibid.). When applied to the present case, such a mismatch is clearly discernible between the way that eligible researchers at Dutch institutions were *supposed* to act, when offered the chance to opt in for a gratis Open Access option, and how they *actually did* act, presumably guided by different forces and logics. A broad range of possible (un-)intended consequences, such as establishing the APC model as the default in the Open Access publishing landscape at the cost of other alternatives, as well as giving rise to novel social relations and behavioural patterns among academic authors, had already started to emerge during my fieldwork for this empirical case study.

Methodologically, to approach such issues and “to uncover the links between technical choices, users’ representations, and the actual uses of technologies”, Akrich suggests “go[ing] back and forth continually between the designer and the user, between the designer's projected user and the real user, between *the world inscribed in the object and the world described by its displacement*” (Akrich, 1992, pp. 208–209, emphasis in original). Therefore, my proposition is that examining such encounters between *real users* and *projected users* (or “authorised users” as in the VSNU-Elsevier contract language) of the “Pilot Gold Open Access” arrangement can lead us to the source of such discrepancies, i.e. to the gap between the expected uptake levels, as estimated by its designers, and the modest interim results by the end of the initial pilot period.

For this purpose, I move from identifying the low uptake levels of the Open Access pilot as a moment of *breakdown* in the VSNU-Elsevier agreement to examining some of the most salient *tensions* that I observed in my interviews and other empirical materials. To structure responses received from the interviewees, as well as to sort out main arguments used in favour or against a certain proposition related to Open Access, I have teased out four key areas of tension. Next, to help advance the analytical process, I carried out an interim exercise and complemented the contrasting pro and contra juxtaposition in each tension area with an additional perspective. The purpose of this exercise was to bring in a more nuanced view on a given point of contention and to illustrate cases in which such apparently incompatible standpoints were not perceived as mutually exclusive (i.e. beyond either-or choices) or in which someone might inhabit an ambivalent position (e.g., a case in which both views are possible at the same time).

While positioning the arguments and different standpoints into extremes helped me analytically as a good starting point, adding a third perspective into this juxtaposition allowed me to consider the complexities in-between the two opposing poles and to depict the variety of diverging opinions found in each spectrum. Given the abundance of often false dichotomies throughout my empirical materials (such as open/closed, public/private, Green/Gold models, Global North/Global South, heroes/villains, success/failure, etc.), as well as inconsistencies between the proclaimed goals and their implementation in actual practices, this approach has proved to be very fruitful in such

analyses. It helped me not only to avoid the pitfalls of common binary categorisations, but also to elaborate a more profound assessment of underlying issues while finding a pathway to navigate between the particularities of each standpoint. In this way, I was able to render the contours of major frictions in the academic publishing infrastructure and their many variables more visible.

In this respect, I once again take inspiration from the rich insights in studies of infrastructures and (re-)infrastructuring. More specifically, I draw extensively on the idea of infrastructural “anomalies” (Bowker & Star, 2000; see also Kaltenbrunner, 2015b), i.e. cases where certain actors find themselves not fitting into predefined classification schemes or even corresponding to multiple categories simultaneously. For instance, external PhD students in my interview sample, who were not employed by universities to conduct their doctoral research, often considered themselves to be both insiders and outsiders of the Dutch science system. Looking at their personal experiences and the workarounds that they had to find in order to navigate the novel Open Access publishing agreements, which were reserved for *proper* members of the Dutch academic community only, this approach opened a window into studying a broad range of issues and underlying values entrenched in such arrangements. These include basic social processes of inclusion and exclusion of eligible or non-eligible members of certain groups as well as more far-reaching questions, such as conceptions of scientific work or construction of the identities and interests of typical scientists. Examples thereof are clearly recognisable in projections made by science policy-makers and other actors behind Dekker’s letter and various Open Access advocacy materials issued by VSNU.

Furthermore, a detailed scrutiny of such infrastructural anomalies, deviant positions, or non-fitting situations serves as a superb analytical tool for eliciting “*naturally occurring inversions* in which various exigencies make infrastructural operations abundantly visible to some people, or that induce new forms of practical engagement, tinkering, or sabotage” (Harvey et al., 2017, p. 4, emphasis in original). Or, in the words of Akrich (1992, p. 208), “we cannot be satisfied methodologically with the designer’s or user’s point of view alone”. That is, addressing the relative in/visibility of certain features of an infrastructure – which might be painfully visible to *some* actors only, but not to all others – requires deliberate efforts to include their perspectives into one’s analytical grid.¹⁰⁸ As a reward, these extra efforts help with enriching and strengthening our own generation of explanatory hypotheses by urging us to take into account a broad spectrum of experiences and circumstances, and pointing towards a number of revealing, if often neglected, underlying issues and complexities (Clarke, 2005; Timmermans & Tavory, 2012; see also 3.2 *Conceptualising a case study, or “constructing the field”*).

As argued by Karasti, Blomberg, and others, ethnographic approaches that incorporate various information sources and analytical methods are well-suited for this purpose since they facilitate the examination of a phenomenon of interest from multiple perspectives (Blomberg & Burrell 2007, cited in Karasti & Blomberg, 2018). According to the authors:

108 For a discussion of epistemic advantages of marginal and insider-outsider standpoints, see also Wylie (2004) and other contributions in Harding (2004). See also comments by John Leslie King on Star’s customary approach of triangulating from the margins (King, 2015).

“This [ethnographic] triangulation of methods (i.e. interviews, observation and document analysis) and/or points of view (i.e. people differently positioned with respect to the phenomenon) can contribute to rendering aspects of infrastructure that are invisible to some actors or difficult to ‘see’ using certain methods more discernible” (Karasti & Blomberg, 2018, p. 251).

That is, the guiding principle for exploring various tensions and frictions related to Open Access in this thesis chapter can be also described as the *triangulation of viewpoints*. Beyond helping to tackle the typical features of (and to counteract) the transparency and invisibility when studying infrastructures and (re-)infrastructuring processes (Star, 1999; Karasti & Blomberg, 2018; Grisot & Vassilakopoulou, 2017; see also Kuorikoski, & Marchionni, 2016), the idea of triangulating not only methods but also viewpoints is closely aligned with the basics of Grounded Theory. As a “theory/methods package” (Charmaz, 2006), the situational analysis offshoot developed by Adele E. Clarke (2005) was particularly instructive for this purpose as it pointed in the same direction. Here, Clarke’s positional maps (ibid.) delivered further inspiration for the idea of exploring divergent standpoints within a system of coordinates rather than just in terms of binary categories. Also in this light, following S. L. Star’s relentless pursuit of asking “Cui bono?”, or “to whose benefit?” (Bowker et al., 2015), in studying various arguments and socio-technical arrangements in my own research, this approach seemed to pair well with an attempt to amplify the under-represented, silenced, or marginalised voices and disadvantaged positions. Against this backdrop, the triangulation of viewpoints has proved to be a particularly promising and suitable method for this chapter, especially when considering the “situatedness” of the claims and observations when encountering them in my research.

Lastly, this conceptual-methodological approach helps broaden the perspective from seeing *users* of the Open Access pilot agreement between VSNU and Elsevier as passive recipients or consumers of an APC-based publishing technology towards seeing them as active participants in developing the academic publishing infrastructure instead. Here again, the overall framing of this case study in terms of re-infrastructuring helps to connect various elements and constituent parts of related analytical threads. As Grisot and Vassilakopoulou (2017) pointed out:

“Recently, attention has been given to a processual perspective on infrastructures that aims to foreground the design activities of infrastructures in-the-making. Research shows how the design work to infrastructure is not confined to a delimited design phase but unfolds over long periods, in a constant ‘becoming’ mode where the boundaries between design and use are blurred” (Karasti & Syrjänen 2004, cited in Grisot & Vassilakopoulou, 2017, p. 8–9).

In this particular case, the active role of (some) Dutch researchers in the adaptation and appropriation of Open Access publishing options is clearly discernible. Some of the actions taken by these researchers have ranged from demands towards VSNU negotiators to include more medical titles in the list of applicable journals under the pilot agreement with Elsevier, to finding ways to circumvent novel APC barriers, to starting to adjust their own publishing behaviour along with changes to Open Access policies and strategies. Therefore, to pay proper attention to such

forms of tinkering and practical engagement, and to enhance the theoretical backdrop underlying this thesis chapter, the analysis will be complemented with some further sensitising concepts. Beyond Akrich's notion of scripts that come along with technical objects, for which their designers anticipate skills, interests, and preferences of prospective users (Akrich, 1992), I include additional insights from the sociology of technology. More precisely, studies on complex inter-relationships between a technology's designers and its users will be of great importance (e.g., Oudshoorn & Pinch, 2003; Wyatt, 2003). The lessons learned from this strand of literature will contribute to a better understanding of how different types of users are defined or configured (and by whom), how they might switch positions and become active co-developers of socio-technical innovations, and how, in the end, users and non-users matter in designing and modifying certain technologies.

In view of this theoretical backdrop, in the following I explore four key areas of tension that arose during my interviews with researchers in the Netherlands and with some of the negotiators. First, I deal with the two opposite standpoints that argue for the urgency to take action and expedite an Open Access transition in response to the ambitious goals set by the Dutch government, versus the rejection of any political interventions in this realm. This juxtaposition is complemented by a third perspective where the stance taken by a particular interviewee appears to depend on the manifestation of the chosen publishing model and Open Access transition route.

Second, I examine the tension between the alleged usefulness versus uselessness of Open Access. Here, we find claims of the nearly universal benefits of making research publications more openly accessible, as opposed to a large amount of scepticism and emphasis on constraints that prevent (potential) authors and readers from making active use of freely available scientific knowledge. The third perspective in this area is set to address unspoken variables in such interview accounts that arguably play an instrumental role in the standpoint taken, and includes reflections on further issues such as "access bubbles" and (un-)expected beneficiaries in Open Access endeavours.

Third, I turn to perceived dilemmas when aiming to advance science versus one's individual career. Here, I explore beliefs that more openness in conducting scientific research would ultimately benefit all branches of science and facilitate scientific progress. On the opposite side, interviewed researchers were reportedly stuck in the "e/valuation gap" with research assessment mechanisms seemingly acting as obstacles to more altruistic, non-competitive behaviours. To complement both, I take a closer look at a number of ambivalences and adaptation strategies as expressed by the interviewed researchers.

Fourth, I investigate ideals and idealisations of openness versus drawing boundaries and setting limits on the supposedly "open" academic publishing world. This includes telling examples such as strong reactions against propositions to open up or make the peer review processes more transparent. The third perspective, this time, deals with how enacting closed-ness sheds light on usually neglected "home-made" exclusions and other blind spots.

9.1 Key tension area I: Urgency to act vs. no need for government intervention

The first key tension area mostly concerns the problem-solution narratives used to justify the Dutch government's intervention into the customary workings of academic publishing, as well as the main arguments adduced in favour or against it. On the one hand, one can find forceful pleas to take immediate action, addressed particularly at Dutch research institutions and academics, in order to achieve ambitious Open Access targets. On the other hand, there were plentiful arguments brought forward especially by the publishing companies, claiming that there is no need to intervene in the well-functioning sphere of relations between the authors, readers, subscribers, and publishers of academic works. In addition, an intermediate perspective complements the two opposing standpoints and contributes a more nuanced view to the debate.

9.1.1 Urgency to act: When, if not now?

The first pole in this area of tension coincides with the starting point of the Dutch Open Access story examined in this case study. For although there were at times some supportive voices to be found among interviewed researchers, calls urging all relevant parties to act immediately towards 100% Open Access target were mostly present in Dekker's letter to the Dutch parliament (OWC, 2014) and related advocacy materials. Unsurprisingly, as this document served as an initial trigger to mobilise action, it had to make a compelling case for the ambitious goal of switching to full Open Access within ten years and to convince all directly addressed or otherwise affected parties (see also the detailed analysis of the letter in *Chapter 7*). But the claims made therein were also echoed every now and then in the interviews with members of the VSNU negotiation team who had been charged with fulfilling the very same goals.

The line of argument encountered in the letter starts with a diagnosis of failed previous attempts to reform the academic publishing system, undertaken by Dutch universities, their libraries, and other institutional actors. Because of this failure, as the letter contends, the Dutch government felt compelled to intervene and to ascribe itself a central role in orchestrating a switch away from the prevailing journal subscription mode in academic publishing (OWC, 2014). By setting the pace and guiding the journey, science policy-makers anticipated being able to accelerate and simplify the envisioned transition to "a single system" of Open Access (*ibid.*). As one can read in the original wording of the letter (OCW, 2014, n.p.):

"Government must provide direction so that the parties know what to expect and can make arrangements with one another. If the transition period is too long, the costs will rise unnecessarily because the research community will have to pay both subscription fees and article publishing charges (APC). Taking a clear decision to switch to open access can expedite the transition process, shorten the transition period, and thus avoid such unnecessary extra expense."

Here, the urgency to act cannot be overlooked. Only if all parties agree with the proposed problem-solution definition and start to act now, according to the letter, can the switch to a full Open Access system be achieved in due time. Borrowing from the "sociology of expectations"

(Brown & Michael, 2003), such a heavy emphasis on promises and possible threats shows “how the future is mobilized in real time to marshal resources, coordinate activities and manage uncertainty” (p. 4). In such cases, related uncertainties are usually expressed only in private, whilst “they are often accompanied by forceful public expressions of promise and potential” (p. 16) and accompanied by “dual discourses of risk and opportunity” (p. 6).

Quite remarkably, such dual discourses are clearly recognisable in the present empirical case, wherein opening access to scientific publications, or research results more broadly, was said to carry both a huge untapped potential for science and society as well as considerable risks, if not managed properly. Even more tellingly, the narratives cultivated by science policy-makers were adjusted to move from a domestic to a European level in the course of follow-up events. Initially, there was a strong emphasis in Sander Dekker’s letter on coordinated government-led action in order to save additional expenses, help businesses and other societal actors to apply scientific knowledge, and, ultimately, to “contribute to the Netherlands’ innovative capacity” (OCW, 2014, n.p.). This emphasis on domestic benefits was shifted to cater to EU-level topics and priorities soon afterwards. As early as in spring of 2016, in the “Amsterdam Call for Action on Open Science”, released during the Dutch presidency of the EU Council, the introductory pages explaining the need for “a speedy transition” provided the following rationale:

“For Europe to remain at the forefront and to ensure sustainable growth in the future, open science holds many promises. Reality, however, has not caught up yet with the emerging possibilities. The majority of scientific publications, research data and other research outputs are not freely accessible or reusable for potential users. Assessment, reward and evaluation systems in science are still measuring the old way” (The Netherlands EU Presidency, 2016, p. 4, emphasis added).

That is, in the event of delayed and diverging actions, not only were the Dutch or the European public purses said to risk doubling their bills for financing scientific publications via subscriptions and APCs, but respective governments were also warned against missing out on anticipated opportunities to increase knowledge uptake and valorisation by their citizens and businesses and “to achieve societal impact alongside scientific impact” (ibid., p. 8). The possible gains of a competitive advantage vis-à-vis other world regions by utilising the promised benefits of Open Access and Open Science were stressed once again in the conclusions of the Council of the European Union (2016) just some months later. Also here, fuelling knowledge-based innovations through Open Access to scientific publications was expected to “ultimately contribute to growth and competitiveness of Europe” (ibid., p. 3).

At the same time, essentially the same narratives, already familiar from Dekker’s letter to the Dutch parliament, were basically repeated in the Amsterdam Call for Action (2016). For instance, in a section explaining proposed actions for “mainstreaming and further promoting open science policies”, “the problem” was described in the following way:

“The transition towards open access has been a lengthy process thus far, resulting in a lack of clarity for all parties involved and increased costs. Policies are numerous and differ between organisations and countries. There is no clear pan-European target.

Besides, there is little comparable information on the status and development of open access in the various countries, and on the costs of access to academic publications. Although some information is already being collected and exchanged at various levels, the overall approach is fragmented and data cannot always be compared" (Amsterdam Call for Action, 2016, p. 30).

The corresponding "solution", according to the authors of this document, entailed reinforcing and aligning "open access strategies and policies at the national level and [facilitating] their coordination among all Member States" – which, most importantly, required formulating "a clear pan-European target": 100% Open Access starting in 2020 (ibid.). As commented by one of the interviewees, who was involved in writing the letter for Sander Dekker, "the idea is that, if you don't set a goal, then everybody will think [there is] no need to act now, so I think, it's a way to push [them] ... so the ambition has nothing to do with 2024 [or] 2020" as such, but with a certain period needed to pursue this transition [int_16:252-256]. Otherwise, "if there is no goal, then there is no urgency or push to change" [int_16:247].

In line with the sociology of expectations by Brown and Michael (2003), choosing a certain year as the goal on the horizon and attaching ambitious promises to it was described by many interviewees as a powerful tool to mobilise action as well as human and financial resources. Following Brown and Michael's observations, "future expectations and promises are crucial to providing the [necessary] dynamism and momentum", especially in cases "where practical utility and value has yet to be demonstrated and where investment must be mobilised" (2003, p. 3). It appears that building up momentum and inducing immediate (re)actions, as quoted above, was the main function ascribed to politicians and science policy-makers in this target-setting exercise.

As further testified in the interviews with members of the VSNU negotiation team, most interviewees seemed to be quite delighted about such "a sudden political interest" in this topic [int_10:295] as it helped to fill a decade-old debate with renewed enthusiasm. Even so, the negotiators at VSNU were reportedly taken by surprise when the initial target to reach 100% Open Access by 2024, whilst ambitious enough, was antedated by fully four years during the Dutch presidency of the Council of the European Union. When asked about their outlook on the situation in that year, one of the interviewees responded:

"Probably in 2020 or 2024, you will have many articles in Open Access, but it didn't change the underlying system. That's my question in this respect. But so far, I am very happy that somebody started to put [these] kinds of views or visions forward, because otherwise we [will] never move [forward]" [int_4:155-156].

One of the strategies employed by the government-directed approach of VSNU involved narrowing down the focus to scientific articles in journals of major publishers, as this was said to help channel attention and resources from all involved parties and streamline the negotiation process. At the same time, this limitation also meant that all other publication types, such as academic monographs and edited books as well as different publishing models, were left out of scope. In this respect, a touch of impatience with the allegedly sluggish pace of previous efforts to

establish Open Access as a default mode in academic publishing also made itself noticeable in a comment from another negotiator at VSNU. When asked about this exclusive focus on journal articles, this interviewee replied:

“Probably, the simple answer would be, there is one thing at a time. We indeed focused on the articles, but it was, there open access is a standard, and I think that after ten years of talks about open access, if it is not going to be proved with articles, then probably it won't work in any fields at all, so it makes sense to start with scholarly articles and then [move on to] the books” [int_10:153-157].

In a way, setting a particular target year to reach full Open Access – whether 2024 or 2020 – seemed to play a largely symbolic role, since the main function of this future-making effort was to mobilise the necessary resources in the *present time* (Brown & Michael, 2003). Borrowing from Peter Miller, making Open Access measurable and, in the next step, comparable across European countries has become a way of “governing by numbers” (Miller, 2001), related to activities at academic institutions, commercial publishing companies, and individual researchers. According to Miller, it is worth taking a closer look at such calculative practices that make certain phenomena or activities quantifiable and, thus, visible. For these reasons, he called on sociologists to study “the ways in which new calculative practices alter the capacities of agents, organizations, and the connections among them”, but also “how they alter the power relations that they shape and are embedded within, and how particular calculative practices enable new ways of acting upon and influencing the actions of individuals” (ibid., p. 379).

As observed in the present case, setting a national or, somewhat later, a “pan-European” target to publish scientific articles in Open Access only, required specific actions from and altered relationships between numerous actors. Yet the displacements in this actor-network (cf. Callon, 1986) and attempts to influence the course of action didn't occur as a blanket switch all at once. Rather, such shifts can be characterised as a complex and multi-faceted process in which each actor group displayed specific interests and strategic foci, each distinguishable into several steps. For instance, after the Open Access goals set in Dekker's letter were announced (OCW, 2014), especially research universities in the Netherlands were prompted to instantly change their previous negotiation strategies and to devise suitable agreements with major scientific publishers. Then, *Amsterdam Call for Action* (2016, emphasis added) was issued and entailed a set of “recommended actions” for implementing even more ambitious goals. This time, the main addressees were national authorities and officials of the European Commission, as well as policy and decision-makers at other (European) research funding and performing organisations, who were now expected to alter their own policies and take specific actions towards implementing 100% Open Access by 2020 (ibid., p. 30).

The negotiation team members at VSNU, who were in charge of translating Dekker's political ambitions into concrete contract terms with scientific publishing companies came to express their expectations towards other actors as well. In particular, the VSNU negotiators turned their attention to individual researchers, stressing the need to raise their awareness about claimed

deficiencies in the current state of the scholarly publishing system and the consequences of academics' everyday publishing choices. In the words of one interviewee, it was seen as critical that academic researchers urgently alter their behaviour and start acting more consciously of the publishing infrastructure supporting their work:

“I think, one of the main collective actions should be within the academics themselves, they should [become] aware that, what they are publishing, what the publishing system costs, and they should start think[ing] about other ways to derive impact from the work that they are publishing and, of course, together with the boards of the universities, etc., and the system itself, but it starts with them, it all starts with them. They should be more aware what they are paying [for] and why they are paying it” [int_4:120-125].

In summary, there were numerous impassioned pleas urging for immediate action towards a wholesale switch from journal subscriptions to Open Access to be found especially among science policy-makers and administrators who had been charged with accomplishing ambitious political goals. In their written and personal statements, these actors often touted their chosen implementation models, portraying these as a unanimous resolution to the current unsatisfactory situation in academic publishing, and associating them with huge promises and undreamt-of possibilities. At the same time, major scientific publishing companies were said to be interfering with the desired course of events and to be attempting to undermine such efforts. In this dispute, counter-narratives used by the publishers, as well as by some interviewed researchers, can be located on the opposite pole in this area of tension. Next, I explore such arguments in more detail.

9.1.2 No need to intervene: Researchers don't want this!?

In the previous section, I have shown how in the interviews with members of the VSNU negotiation team, as well as in instrumental political documents, appeals for action to shift from journal subscriptions to Open Access in academic publishing were permeated with a great sense of urgency. Because it had taken so long already, and huge opportunities for science and society were being missed, according to these narratives, the time had now come to speed up this process and finally accomplish an Open Access transition. Unsurprisingly, beyond the main protagonists of this storyline who promoted the idea of a bulk switch to full and immediate Open Access by substituting journal subscriptions with APCs, opinions among other institutional and individual actors were more divided. These ranged from moderate remarks towards the limitations of preferred implementation models to outright rejections of any attempts to meddle with academic publishing affairs.

The principal counter-narratives against the ambitious plans to switch to full Open Access, as expressed in the letter by Sander Dekker and pursued in the course of VSNU negotiations with major publishers, came from the ranks of the same publishing industry. In this regard, interviewees from Elsevier continued to stress the allegedly isolated standpoint of Dutch science policy-makers and to emphasise that there had been no obvious consensus among Open Access advocates worldwide. Further emphasis was put on anticipated or actually expressed resistance

from Dutch researchers. Moreover, the interviewed researchers themselves often highlighted a strong inertia and persisting hierarchies as guiding principles of their work and life-worlds in academia. Because of a perceived clash between these two competing logics, the political ambitions to reach 100% Open Access within a certain period of time, and especially the active role played by state secretary Dekker, were often described as an unwelcome artificial intervention into science's otherwise (allegedly) autonomous internal workings.

One of the main lines of reasoning used by representatives at Elsevier to dismiss the arguments of Open Access proponents was grounded on the low uptake levels of their pilot Open Access agreement with VSNU. In the first year of the initial contract period, starting in January of 2016, only one out of three corresponding authors ticked the appropriate box when offered the free Open Access option, according to Elsevier's internal monitoring statistics. After several reminders were sent and that allowed authors to switch their articles to Open Access retrospectively, this number reportedly increased to one half. Drawing on these results and using them as evidence for a low degree of interest in Open Access among research communities, both interviewees at Elsevier questioned the need to intervene in the scientific publishing system and challenged calls to change its mode from subscriptions to Open Access.

Such an outcome was hardly a novelty to negotiators at Elsevier. Speaking from experience with earlier agreements, they reported having frequently observed extensively prepaid yet never exhausted publication budgets [int_p2:758]. In the case of the Netherlands, such an interim result was further seen as a proof for the stark discrepancy between the official rhetoric at VSNU and the needs of researchers on whose behalf such negotiations were conducted. In the words of one interviewee:

"I was surprised, because when you would listen to Gerard Meijer [chief negotiator at VSNU], you would say, every university, I'm sorry, every researcher is dying to publish Open Access, and that's the only model acceptable, but reality is different; it is a good test case ... but that part failed then [laughing]" [int_p1:199-203].

As commented by another interviewee at Elsevier, "the relevance of a journal is crucial" for a modern-day scientist, and not whether it is included in such institutional Open Access arrangements – "when it's on the list, it's fine, if not, also not a problem" [int_p2:816-817]. Such a view seemed to resonate well with many researchers interviewed for this case study. As explained by an assistant professor in psychology:

"When I have a manuscript ready, I choose a journal just based on where it would fit and what would be a nice journal, and I don't choose [based] on checking whether it's open access or not, and I would rather still first choose on the quality and the fitting of the journal, rather than 'oh, is this open access or not'" [int_r4:28].

The common view on the side of the publishers was, thus, that Open Access was not a top priority for most academic authors when choosing where and how to publish their work. When asked whether they had received direct feedback from the researchers themselves on the agreement that resulted from the negotiations with VSNU, one interviewee replied:

“Yes, so they were all worried; they wanted an outcome where they would have access to all international journals, and they would worry if that would not happen, they didn’t, you know, if you would ask them ‘do you support open access?’, they would say ‘yes’, but if you would ask them to rank open access on their list of priorities, it will be at the bottom ... so yeah, they were quite removed from the discussions, I must say” [int_p1:72-76].

A certain “disconnect between the actual [research] practice and the policy-makers” [int_r5:4] was also bemoaned in some interviews with the researchers in this case study. As argued by one researcher-turned-Open-Science-advocate, the statements of science policy-makers calling for huge investments and the need to build a supporting infrastructure for more openness in scholarly communication appeared to be misguided and ill-informed. Commenting on some recent policy initiatives, such as the Dutch “National Plan Open Science” (OCW, 2017b) – a follow-up development “from the robust and ambitious Dutch open access policy which the Ministry called for in 2013” (ibid., p. 9) – this interviewee concluded: “the fact of the matter is that the infrastructure is already there” and “this is a cultural change, it’s not necessarily a policy change that needs to be made” [int_r5:1-6].

Such political debates appeared to be detached from the everyday realities and academic practices according to another interviewed researcher as well. In particular, a gap was felt at the intersection of power structures and publishing cultures within scientific communities:

“My impression, and [that] of most of my colleagues, [is] that nothing is going to change; [if] I want to publish in the British Journal of Sociology, you know, nothing changes that, no Sander Dekker ambitions is changing the reality of certain hierarchies within the [research] disciplines” [int_r2:27].

That is, although VSNU negotiators emphasised the urge to raise awareness among academic researchers about the cause of Open Access to change the publishing system for the better, other (structural) forces steering their choices of publishing venues seemed to prevail by and large. This observation was in line with the arguments used by Elsevier’s representatives. From their perspective, there had been no strong demand for Open Access from most researchers thus far, and thus “no need to convert the publishing system yet” [int_p2:783]. In the words of this interviewee, transforming journal subscriptions into an Open Access publishing model should be seen as a long-term process that will require more time than expressed in related political statements:

“One thing is clear, as soon as there are more open access publications than on the basis of subscription model, it will tip over: there will be less subscriptions, it will become cheaper, and some day, ideally, there will be no subscriptions any more. It will come, and you could try to enforce this, but every pressure generates counter-pressure. The conviction is not there yet, on the publishers side, we observe this very closely; this extreme transformation didn’t set in yet, it will take longer, maybe never. It is kind of crystal ball gazing right now” [int_p2:1097-1106].

Yet whether a weaker than expected demand from Dutch researchers to opt in to Open Access publishing, as supposedly evidenced by the low uptake levels of the pilot Gold Open Access agreement between VSNU and Elsevier, was due to their lack of awareness of this publishing option or to other reasons still remained unclear. Quite possibly, the announcement of this novel agreement between the two parties might have been simply overlooked by a large number of university researchers. As commented by one of the interviewees at Elsevier:

“I was on the negotiation table and also I knew everything, and I was always a bit surprised, they [researchers] said, ‘oh, yeah, yeah, you know, I read this thing newly from the rector, three weeks ago’, and it was like, ‘we get lots of things from the rector, it is one of the announcements’, so you know” [int_p1:77].

According to another negotiator at Elsevier, it was difficult to determine why several countries missed the mark with the actual usage of the pre-arranged Open Access quotas. Here, an emphasis was put once again on the low uptake levels among potential authors of scientific journal articles:

“The budgets are there, but they are not being exhausted, why, I don’t know, I don’t understand it. Also in Holland, I was super surprised to hear from colleagues that we are now [below target], how come, after the whole deal, the whole negotiation, it was in the press all the time, for one and a half years. Dekker was involved, I mean, you couldn’t create more awareness in this country, than what happened in Holland ... and we are not talking about 10,000 publications here and we are now at 5,000; we are starting with really very small numbers, and we cannot get even there” [int_p2:1195-1202].

However, given the heavy-going birth of the VSNU-Elsevier agreement for 2016–2018 and the numerous criteria to be fulfilled to become eligible for the APC-free Open Access offer, the terms and conditions of this arrangement seemed to be far from self-explanatory even despite this huge amount of publicity. The bumpy start of the “Pilot Gold Open Access” featured a belated announcement of applicable journals in March of 2016, after having taken effect starting in January of the same year (VSNU Open Access Newsletter No. 16), as well as affected authors at Dutch universities and medical centres being contacted with an offer to switch their journal articles to Open Access retrospectively, if published during that period.

To disprove such claims from Elsevier’s representatives that there was no need nor interest for Open Access among researchers in the Netherlands, a member of the VSNU negotiation team replied:

“Yeah, in their [Elsevier’s] view, but I asked around here in the library, and they said that well, it’s not that authors do not want [it], but the workflow with Elsevier is so difficult, and so, yeah, there are difficult [terms], it’s not easy to use, [so] authors have just problems in offering their material in open access, but this is how they [Elsevier] work; they will just go to my boss and say ‘ha, please have a look, they don’t even want to publish in open access, so why did we do, why did you bother’, something like that, that’s the way they operate” [int_4:313-318].

This line of argument is supported by a quick comparison of the resulting Open Access publications by corresponding authors from the Netherlands, when sorted per publisher. According to the national monitoring statistics, while there were 358 journal articles published in Open Access under the pilot agreement between VSNU and Elsevier in 2016, similar agreements with other major scientific publishers have led to substantially higher numbers. For instance, there were 2113 Open Access publications with Springer and 1549 with Taylor & Francis, which were covered by VSNU-negotiated agreements in the same year.¹⁰⁹ In light of such sobering results at the outset of this pilot arrangement, representatives from Elsevier claimed to have offered Open Access workshops for authors, “so that, you know, people can learn to publish more easily, and be more successful in the publication process” [int_p1:194]. This offer was reportedly declined, though: “but the universities were not interested ... so I guess, they are also not that interested in getting the numbers up” [int_p1:196-197].

Furthermore, another argument against interventions from science policy-makers and the alleged urgency to switch from journal subscriptions to Open Access in academic publishing was substantiated by the huge diversity in current Open Access policies. The “mixed-coloured” global landscape with regard to the Green versus Gold Open Access preferences of individual governments and research funders, was said to pose huge challenges to publishers and researchers alike. To illustrate this ambiguous situation, an interviewee from Elsevier explained:

“You can make your own articles gold open access, and so for the Netherlands, it’s 2% of the world output, but then, it’s still, what about the other 98%, right, and that is a serious dilemma ... should I go to the American researcher, an author, and tell him or her ‘I am sorry, you have to go gold open access, because in the Netherlands, there is a rector who likes that model’? And that’s not how it works, because that person will say ‘well, I have my own rector, by the way, and I have got money from NIH, so I will put my argument in the green repository called PubMedCentral” [int_p1:138-142].

Such a lack of unity or uniformity among Open Access proponents and related strategies was repeatedly put forward as one more reason to be puzzled over the goals and motivations behind the recent political attention to this topic and the pressure exerted on major subscription-based publishers. Although more and more negotiation teams from various countries started to approach Elsevier’s representatives with demands to include Open Access clauses in their successive Big Deals, the national delegations were said to not be willing “to invest money in this cause” and apparently expected that publishing companies would settle the bill themselves [int_p2:183]. As observed by this interviewee, next to the lack of consensus on existing Open Access publishing models around the world, there had been no strict Gold-only mandate so far. In his words: “even when governments say so, there is not a single government statement, nowhere, that would say ‘you must do gold [open access], *publish in gold or die*’; there is no such thing. It’s either colourless, or they keep it neutral; you can choose the one or the other” [int_p2:1185-1186, emphasis added].

At the same time, this interviewee at Elsevier felt that bolder steps with genuine Open Access agreements had been missing:

109 See <https://www.openaccess.nl/en/in-the-netherlands/monitor> [last checked on 04/09/2021].

“Quite often, these negotiations start with a motivation to do open access, but they end up with a subscription deal yet again, and maybe with some open access share, but I haven’t heard of any *real open access deal* – open access free of charge and we only pay for publishing, for processing a publication – also not with other publishers” [int_p2:1179-1182, emphasis added].

According to this interviewee, it would be an interesting, if somewhat radical, country-level experiment to cancel all subscription contracts and to publish in Open Access only, “just to see what happens” [int_p2:1191]. “Let’s say, we would put 300 million [euros] on the table and see how long we can publish in open access with this amount ... I mean, for a country, it wouldn’t be an enormous amount, but nobody does so, nobody takes this [option] seriously” [int_p2:1190-1192]. Instead, as the interviewee continued further, Open Access publishing fees are usually “co-funded” within research projects, with moderate amounts, or with such transition-branded deals, but not in truly courageous acts [int_p2:1192].

Somewhat ironically, this remark comes from a representative of a legacy publisher – that is, an actor that might be assumed to be most interested in preserving its dominant position even in the post-switch Open Access world. Yet although there had already been large-scale national *deals* in 2015 and 2016 with novel publishers such as Frontiers, whose business model relies entirely on Open Access publishing through the payment of APCs, most agreements with scientific publishers concluded in the Netherlands (and beyond) entailed a combination of reading and publishing components.¹¹⁰ But the suggestion made in the above-mentioned thought experiment also builds on another implicit assumption: that providing free access to scholarly publications has to take place via the APC model. This means, following the reasoning presented above, that an Open Access transition would inevitably require additional funds or “extra investments” to arrange for the upfront payments of article publishing or processing fees. This claim, in turn, was vehemently disputed by representatives from academic libraries on the VSNU negotiation team (see *section 8.2.3.3*).

In the end, it appears that there were even more disagreements and differing opinions among interviewees in this case study. With respect to the researchers themselves, many of them seemed to be caught in the middle of two fronts or could be characterised as ambivalent in parts, adding a more nuanced view to the controversy between VSNU and Elsevier. This third perspective, where most voices expressed their support neither for the Dutch government’s claimed urgency to act and its proposed implementation route, nor for Elsevier’s dismissal of any need for a policy-led intervention, will be now explored on the following pages.

9.1.3 The devil is in the details: Or, more Open Access, but not this way!

The lack of any “real Open Access deals”, as suggested in the previous section, as well as a gap between the declared goals of Open Access and the means chosen to implement them by the Dutch

110 For an overview of current and previous agreements in the Netherlands, see <https://www.openaccess.nl/en/in-the-netherlands/publisher-deals> [last checked on 05/09/2021].

government, emerged as a common theme among the interviewed researchers in this case study. It appears that most interviewees in this group were not uninterested in or against Open Access *per se*, as often claimed by Elsevier's representatives. Rather, they were also critical towards the ambitions of state secretary Dekker and particularly his outspoken preference for arranging Big Deals with major scientific publishers to include Open Access components. For one, most researchers were wary of opting in for Open Access offers in agreements that were pre-arranged and prepaid for them by VSNU, with complicated terms and no evidently clear benefits.

The fact that, following the provisions in Dekker's letter to the Dutch parliament (OCW, 2014), the national Open Access strategy in the Netherlands became to negotiate with the biggest publishing companies on switching journal articles to Open Access – and to disregard all other possible alternatives – provoked particularly severe criticism. Given the variety of Open Access models and numerous scholarly-led initiatives in academic publishing, choosing to spend millions of euros on contracts with major commercial giants raised suspicion of the publishing industry's interests at play. As commented by one of the interviewed researchers:

“There is a lot of things that you would wonder. I wonder why people like the negotiation team of Gerard Meijer [chief negotiator in the VSNU-Elsevier agreement] started out with, indeed, this idea that you have to negotiate with the [major] publishers, and you also have to wonder why the government has this [preferred Gold Open Access route] – I think [it's] lack of knowledge. I simply can put it down to that: lack of knowledge plus ... there is just a very big lobby in the EU from the STM publishers ... so it's lobbying and rhetoric, in the end, so it's politics” [int_r14:36-44].

These circumstances were further criticised as a contradictory strategy to serious aims at bringing about a radical change in the world of academic publishing. Instead, prioritising those publishers that already possessed an oligopoly-like market power was anticipated to keep the status quo as a most likely outcome at best, or as “a recipe for disaster” [int_r1:32] at worst. The frustration with the supposed success story, as promoted by the negotiation parties, is succinctly illustrated in the following quote:

“To call that a gold standard, I mean, that our government is being, pushing for that, is one big betrayal, I think; it's just another way of securing transfer of public money to private business. So I'm not at all one who thinks that our, that VSNU and the state secretary have been heroic in this. They've been completely stupid, they just lack, totally lack the imagination of doing something different with the funding that's there” [int_r7:18].

The decision to complement the regular Big Deals with an additional prepaid Open Access component in these agreements was also the main point of concern for another interviewee:

“Yeah, but they want, but that's 100% open access via the big deal method, so, I mean, these are very lofty declarations but, I mean, if you look at the details, how do you get there from here – by big deals, really? I mean, if you say big deals, you're [going to] pay more” [int_r1:26].

On top of an expressed regret at the “complete acceptance of the existing political economy” in academic publishing [int_r7:45], the disappointments with the course of events were further grounded in the sense of a missed opportunity. After VSNU negotiators withdrew their call to boycott Elsevier and concluded an agreement shortly afterwards in late 2015, one of the vocal observers of the negotiations started asking whether it was “just a bluff – was it just a strategic move to get, to put some pressure on Elsevier during the negotiations” [int_r5:30]. As this interviewee explained:

“Of course, it’s also a bit of the tough guys, but I just found it very disappointing, that the university didn’t see, or the VSNU or the universities or the negotiators didn’t realise the potential of that, how important that very moment could be in shifting the landscape – because the negotiations with the largest of all of the publishers are also the most important [ones], because that is Elsevier, [it] is one of the most resisting ones, so shift that one and then you shift many more. So I’m, yeah, I was disappointed that the potential wasn’t realised” [int_r5:34].

Moreover, another major thread in relation to the efforts to reach agreements on Open Access with commercial publishing companies concerned the use of public funds for this purpose in general. Given that such deals were paid for with public money, the motivation of negotiators at VSNU and research funding agencies seemed to be somewhat confusing: “It’s also a bit strange, if European Union [or] the Dutch scientific organisation says ‘yeah, we allow all researchers to ask for money for publications’, so they are actually just saying like [to] Elsevier and Springer ‘here, you have your money’” [int_r12:36]. Considering the implications of such decisions for research budgets has triggered further thoughts on whether there are better ways to spend this public money:

“The success percentage of getting grants right now is, in the Netherlands, for instance, for ERC [European Research Council], is 10%, so if you could save a bit of money and instead use that to fund more scientists like you and me, wouldn’t that be also [a good thing]? Yeah, I’m very diplomatic, you know [laughing]” [int_r16:58].

Interestingly enough, this critique seemed to be shared by some of the representatives at Elsevier as well, at least to some extent. As commented by one of its representatives:

“Because researchers are smart enough to realise ‘yes, somebody wants me to publish in open access, nobody is going to pay for it. I mean, I have to do it out of my research budget, which means, I cannot send my graduate students to present her paper at a summer conference’, what would you do? You invest in the student, exactly [laughing]” [int_p1:166].

Another line of critique on the official Open Access strategy by the Dutch government, and the problem-solution propositions it presented, concerned the perceived bias against smaller publishing houses, particularly in the areas of the social sciences and humanities (SSH). As pointed out by several interviewees, such publishing venues were often characterised by long-standing cooperation with research institutes, working together on tradition-rich book series or catering to

highly specific needs with regard to publishing formats. Since such labour-intensive (and also less lucrative) projects were usually out of the scope of publishing programmes by scientific publishing giants, some SSH researchers complained about being discriminated against twice by such large-scale policy-backed Open Access initiatives.

In particular, since the explicit strategy in the VSNU negotiations was to tackle major scientific publishing companies from the top down, authors in the fields dominated by scholarly books and monographs felt largely ignored. In the words of one researcher in religious studies, these two populations of SSH researchers and book publishers were simultaneously excluded from such Open Access deals [int_r3:8]. While there have been experiments with applying the APC model to publishing academic books in Open Access via analogous Book Processing Charges, or BPCs, these can range up to 8,000 EUR or even more per single book. Such a price tag was seen as “an impressive amount of money” [int_r3:6], especially for those authors working on part-time contracts or in less generously endowed institutes and research fields than STM.

Moreover, other researchers bemoaned that most of the smaller or novel full Open Access publishers weren't invited to the negotiation table either. This observation caused even greater astonishment in the face of the eagerly promoted narrative of a radical transformation of the academic publishing system [int_r5:65]. In the end, as suggested by one interviewee, this selective approach would mean that researchers in SSH and related fields were forced to publish their work within the limited selection of journals of big publishers, although these were heavily focused on scientific journals and publication formats that were mostly prevalent in STM fields [int_r3:8].

Finally, inspired by a hint in two interviews (independently from each other), I would like to further point out the idea of an *innovation dilemma*. As one interviewee noticed, from the innovation science perspective, any disruptive innovation is more likely to be introduced by new players in the markets and not by their old incumbents, since the latter would rather tend to benefit from the status quo. Through this lens, what the OCW ministry was trying to do, when drafting a letter for state secretary Dekker and attempting to persuade major scientific publishing companies to switch from subscription-based publishing and business models to Open Access, was “to get a radical innovation with the existing companies, and usually, what we see, is that a radical innovation comes from different companies” [int_16:321-323]. “So here, you try to convince old existing companies to radically change, and the question is, whether that ... is possible or has happened before” [int_16:325-326].

In a similar vein, another interviewee was wondering about an apparent discrepancy between the declared goal of the Dutch government to induce a systemic change in scientific publishing and the means chosen to fulfil this aim. In the hope of eventually changing this situation, this researcher was longing for a tipping point to be reached soon with enough critical mass:

“I was like just thinking of problems that we are facing now as sort of *an innovation dilemma* – there is a lot of potential, and a lot of people are thinking in [terms of] the status quo and justifying the status quo, and I'm still waiting for that moment, that the current open access model fits very much into the traditional business model of

publishing, and I think that once we break out of that, there are a lot of possibilities ... and honestly, if we keep incentivising the contrary, then we shouldn't be surprised that we are not getting there" [int_r5:65/17, emphasis added].

Among the main reasons for why the old-fashioned business models are largely being preserved in the Dutch national (and other) Open Access strategies, this interviewee named "a clear clash" of conflicting logics [int_r5:17] and the setup of current incentive structures that "don't reward open access" [int_r5:14]. In addition, sticking to a paper-era publishing paradigm was suggested as a further explanation by another interviewee [int_r9:61].

Moreover, in view of the obvious efforts of science policy-makers behind the VSNU negotiations to preserve the roles of major scientific publishing companies, another interviewee joined the chorus of criticism. Based on the perspective of a different publishing culture in the field of computer science, according to this researcher, there seemed to be an inclination to keep the status quo in the Dutch official Open Access policy and other major initiatives:

"I was surprised by the open access movement still relying so much on [major] publishers. I thought we had already passed the point, but we are very much in it, in fact, all of the negotiations were about keeping the publishers in the loop, and researchers still being dependent on it" [int_r14:33].

When drawing on early experiences with scientific publishing, this interviewee further noted: "In computer science, you've got a lot of friends of open access, because people will often tell you 'well, we had this already, and there were no APCs, so [laughing]" [int_r14:22]. Therefore, calls for a switch to a fully Open Access system have made this researcher wonder about a scenario of "going back to the future", with many proven examples among research domains which have been practising community-based publishing for over 20 years – and which were arguably neglected by science policy-makers and research funders in a consistent fashion [int_r14:30].

To conclude, a major line of critique of the VSNU-negotiated publishing arrangements gravitated around the outspoken priority given to major scientific publishing companies and to the continuing stability of their roles even in the envisioned new Open Access publishing world. Furthermore, the choice to stick to the common practice of wholesale subscription Big Deals between academic libraries and scientific publishing giants has also been criticised. Quite tellingly, these points closely resemble lessons learned from infrastructure studies and re-infrastructure. When the controversy is viewed through this lens, not only can academic publishing infrastructure be described as "embedded" in or "sunk" into other structures, social arrangements, and technologies, shaping and being shaped by "the conventions of practice", and "building upon an installed base" with its inherited strengths and limitations (Star, 1999), but the design concerns faced by VSNU negotiators can also be said to entail numerous ambiguities. This is noticeable especially because they were charged with the task of bringing in novelty and transforming the publishing infrastructure without harming what was in place (cf. Grisot & Vassilakopoulou, 2017). At the same time, the empirical case under study was characterised by ample examples of inconsistencies. Having explored the problem-solution narratives used to underpin the Dutch

Open Access strategy, as well as counter-arguments and alternative viewpoints brought forward to refuse them, we shall now turn to the next key area of tension.

9.2 Key tension area II: Usefulness vs. uselessness of Open Access

The second key tension area deals with attempts to prove the usefulness versus uselessness of Open Access to scientific literature and, as such, mostly examines the envisioned benefits and beneficiaries thereof. Examples of statements in this category include one of the basic tenets in Open Access advocacy: that public funding of research endeavours should generally lead to public access to research results. In addition, as often argued by science policy-makers and research financiers, making scholarly publications freely available would add more “value” for the money paid and would increase the “return on investment” for (domestic) taxpayers. On the opposite side of this debate, occupied mostly by the researchers themselves, such arguments were quickly disputed as overtly naive. Here, interviewees claimed to have no illusions about the lack of broad public interest in the highly specialised topics that they work on as well as seeing no (big) problems with accessing scientific articles for those who wish to do so. Furthermore, the limited comprehensibility of scientific knowledge and writing without an appropriate specialist education was routinely highlighted.

The third perspective in this case mostly comprises critical voices from academic librarians and some researchers. It is characterised by attempts to disentangle the possible effects of Open Access, or Open Science more broadly, and to improve the re-usability of research results as compared to *merely* counteracting unequal access to scholarly literature around the world. What started with a few passing remarks, noted in interviews with a small number of respondents, gave rise to initial steps for examining the *situatedness* of partial perspectives on Open Access. The impetus to follow such – at first – vague hunches (Charmaz, 2006) has subsequently led me to probe deeper into the issues raised here and to the development of my own analytical categories (such as living in “access bubbles” to describe the views of academics in privileged positions). These considerations have then laid the groundwork for the conceptualisation of the key tension area in this sub-chapter.

9.2.1 Projecting the usefulness of Open Access: Good for everyone

Depending on the extent of their own experiences and personal involvement with various scholarly communication topics, the question of the advantages or disadvantages of Open Access publishing has generated a number of *perceived* and/or actually *experienced* benefits among the interviewed researchers. First, having more “open” access to scholarly publications was often seen as a worthy cause in itself and a valuable endeavour since “there is something in it for everyone” [int_r8:32]. This was also suggested as a fundamental principle of doing research by another interviewee, where creators of scholarly works were entitled to expose their ideas to circulation and debate: “I think, as academics, we have the right to share our work and society has the right to receive it, not only society, but also other scholars in the world” [int_r23:67]. In a similar vein, removing access barriers to scholarly literature world-wide was also imagined to be “like having

[an] unlimited encyclopedia at your fingertips all the time” [int_r8:42] – and implicitly echoed the BOAI (2002) declaration’s aim to create “an unprecedented public good”, available world-wide.

When moving from a general level to discussing more specific advantages of free access to scientific articles and other publication types, instead of having to overcome regular subscription paywalls, a certain differentiation of the benefits and beneficiaries quickly emerged. To start with, many interviewees envisioned additional advantages for scientific communities themselves, in first place. As commented by a researcher in the field of electrical engineering:

“If you ask if I see advantages or disadvantages in publishing in open access, I think, for us as researchers, it is clearly an advantage. Why is it advantage, in fact, it’s increasing our impact, it’s also increasing our impact factor, it gets easier cited, it is easier read than if it’s closed” [int_r6:1].

In this regard, the prospect of increasing one’s visibility and citation scores with the help of Open Access was seen as a highly desirable advantage of the VSNU-led negotiations. Beyond having a personal interest in such an outcome as an individual researcher, this interviewee continued further by pointing out complementary beneficial effects for his scientific peers in other countries:

“Especially, you know, the world is divided into rich countries and also less rich countries, or poor countries, and not everybody has access to these journals, so open access is making it much easier to share the knowledge and to get also high impact” [int_r6:2].

As can be seen from these quotes, some researchers followed a similar argumentation line as presented in Dekker’s letter and VSNU advocacy materials. According to this line of thinking, switching publications from established subscription-based journals to Open Access would result in a win-win situation for all parties. Not only would researchers in the Netherlands and elsewhere fulfil their moral obligation and give the fruits of their research back to the societies that fund them, but they could also increase their chances of making a bigger societal and scientific impact. Moreover, thinking of researchers who were located in “poor countries”, freeing one’s publications from access paywalls was seen as a good deed to help colleagues in less wealthy places benefit from the knowledge and resources available in the rich ones.

This reasoning seemed to be the main motivation for another researcher, who decided to opt in to VSNU’s Open Access offer in one of the pre-selected Elsevier journals:

“Well, I believe, with open access, I will be able to reach a lot of people, as much as possible, and one of the reasons I actually did it [switched my article to open access], is because my research is focused on Africa; a lot of African universities don’t have free access to online papers itself, so that is one of the reasons that I wanted to do it” [int_r20:26].

At the same time, while the outlook of potentially boosting visibility and citations to one’s own publications seemed to be highly promising, a particular understanding of “impact” quickly becomes salient in such deliberations. What is striking in the previous quotes is that this notion is

being used synonymously to the Journal Impact Factor (JIF) – a bibliometric indicator for measuring the relative citation rates of an average article published in a given journal (Cronin & Sugimoto, 2014; Sugimoto et al., 2019; Biagioli & Lippman, 2020). That is, “increasing one’s impact” with the aid of Open Access – i.e. by facilitating more views and downloads, and, thus, more chances of getting cited – is defined in relation to such quantitative indicators as JIF and similar metrics that build upon counting citations in scientific publications. In this respect, as Ruth Müller and Sarah de Rijcke (2017, p. 157) have demonstrated, the intense usage of quantitative performance metrics in academic evaluations has sometimes led to a situation where “the worth of research activities becomes increasingly assessed and defined by their potential to yield high value in quantitative terms”. Especially in research fields characterised by highly competitive academic labour markets, certain underlying norms and values also became increasingly stabilised as they were integrated into routine practices of scientific knowledge production. Weighing up the worthiness of research endeavours in terms of JIF and citation scores can thus be described as an example of a phenomenon that Müller and De Rijcke (ibid.) have termed “thinking with indicators”.

Moreover, with respect to the further potential benefits and beneficiaries of broader access to scholarly publications, another group was identified by some interviewees. As active users of scientific knowledge beyond respective scientific communities, practitioners and professionals in the same field as well as various interest groups were named as likely to benefit from Open Access. As explained by a researcher in constitutional and administrative law, “the same kind of journals [were] being read by legal academics as well as by legal professionals” [int_r23:35]. Therefore, from the perspective of this interviewee, limiting exchange between knowledge *producers* and knowledge *users* due to access barriers was most detrimental to this academic community itself. In her words, “I think, that’s really problematic, problematic for the law as a discipline, problematic for academics who are not able to share their knowledge with the people who need it” [int_r23:9].

However, in contrast to the field of law, where both researchers and practitioners were said to keep themselves updated by reading the same journals, similar examples from other research fields remained scarce. Instead, most interviewees stressed the need to adjust the presentation of their research results in order to make scientific knowledge more comprehensible and usable in practical settings or applications. For example, when asked about the potential benefits of Open Access to practitioners in his field, a researcher in ecology expressed severe reservations. In his words, his research group has been actively pointing out how to find and download available publications when collaborating with professionals. Nevertheless, those working on water quality management in the Netherlands reportedly search for relevant information in other sources. As experienced by this interviewee:

“But we have also figured out that in general, these engineering companies and water quality managers, they are not so much looking into scientific literature, then they have got more [of] these journals, which are also sometimes pretty academic, but then they are in Dutch, for example, which is more easy for them to read, and more focused on one specific message instead of a whole research paper with methods and discussion

[sections]" [int_r11:43-44].

In the related area of sustainable energy research, another interviewee also highlighted a different type of professional Dutch-language journal when reaching out to respective communities of practice. As reported by this researcher:

“Once we had an article in one [such professional journal], looking at, let’s say, energy neutral building ... but usually it’s not scientific; it is usually related to the work field” [int_r19:72].

As can be illustrated by these examples, an additional layer of translation was often necessary when addressing practitioners who deal with specific problems in the field. This not only concerns adapting one’s language and main messages when writing up one’s own research results in a practice-oriented article or a commentary. But the structure of such a contribution, as well as the writing style itself, would also have to be adjusted to suit the needs of readers in a local professional magazine – and not an English-language, international scientific journal. It is ironic, then, that both areas named above, water management and sustainable energy research, are among the priority areas in the Dutch “Top Sectors” approach that played a central role when compiling the list of *scientific* journals under the pilot Open Access agreement between VSNU and Elsevier. Although focusing on these sectors was said to have served as a way out from negotiation struggles between the involved parties, communicating scientific knowledge to practitioners in these fields on application-oriented problems would arguably require different means would arguably require different means (for a detailed discussion on the role of Top Sectors, see also section 8.2.2.3).

It appears that the popular political argument of bringing about huge societal benefits by ensuring free access to scientific articles, as prominently claimed in Sander Dekker’s letter on Open Access to the Dutch parliament (OCW, 2014), barely holds in practice – or at least needs to be qualified. As repeatedly argued by interviewees in a variety of research areas, engaging with professionals in their fields, as compared to scientific peers, required differentiating these target audiences and adapting the format and language of written and other contributions accordingly. Furthermore, another popular claim used by science policy-makers – that of benefits to the broader extra-academic public and lay people with Open Access – received even less substantiation from the interviewed researchers. The counter-arguments that were put forward in this respect, as well as more specific critiques on the limited usefulness or even perceived *uselessness* of Open Access, will be explored in more detail on the following pages.

9.2.2 Contesting the usefulness of Open Access: No skills, no time, no interest – and better alternatives

Following up on the potential advantages of Open Access to individual researchers, scientific communities, and knowledge practitioners, the interviewees in this case study were asked about their views on the benefits to broader society of Open Access to scholarly literature. The rationale that the public funding of research should lead to public access to research results, after all, is one

of the cornerstones of Open Access advocacy. However, the claim that researchers could *give something back to society* by means of free access to their academic publications, as many Open Access proponents and sympathetic politicians like to stress, quickly provoked strong objections.

On the one hand, numerous caveats were listed for why this would be a simplistic view on the matter or perhaps even a naive belief. On the other hand, some researchers appeared to be very sceptical in principle with regard to any possible public interest in their research results. In the case of a sociologist who used to self-archive his own research publications in a subject-specific online repository, he indicated that he had “*no illusions* about the ‘publicness’ of [his own work], like the general public is not going to, you know, like look at [it] and find your stuff there” [int_r2:7, emphasis added]. Once again, the deeply idiosyncratic nature of the research problems that many researchers are working on, and the ways that these are usually presented with a specialist audience in mind, were named among the main reasons for this widespread scepticism. Moreover, some fundamental objections were often put forward, such as that someone “normally not interested in science” would never start reading research articles in scientific journals for “pleasure just [because it’s] open access” [int_r18:14/30].

At the same time, some interviewees reflected on wearing many hats themselves, being both scientists and members of society simultaneously. A researcher in urban acoustics illustrated this point by giving a personal example:

“I mean, well, I have not read any scientific article far beyond my own field, then I’m as a citizen, I have not read any journal article in medical science, so I think that’s quite, yeah, there will be very few people in society that will read scientific articles” [int_r12:9].

Instead, in order to reach a broader audience, one interviewee suggested doing this “by giving speeches and talks and getting into the media” [int_r18:30] or writing a non-academic popular science book, which then “would be a Dutch book and it would be published by a Dutch publisher which has the market in the bookstores to direct sales to customers” [int_r14:76].

Similar arguments were echoed in the interviews with publishers. As argued by one of the interviewees at Elsevier, debates about Open Access and the very publishing model itself were an issue that is “very restricted to the science community” only [int_p1:9]. Taking into account the highly specific terminology used as well as implicit rules that govern scholarly communication, providing Open Access to a scientific journal article was regarded as of little use to extra-academic readers. In the words of this interviewee, this wouldn’t help non-scientists “because they will have access, but they will not be able to understand it” [int_p1:269]. A colleague at Elsevier seemed to be likewise unconvinced of any interest in Open Access publications from broader societal groups. In the words of this interviewee, “no housewife is going to read this” [int_p2:127]. Therefore, to make the knowledge encoded in scientific articles more accessible to regular citizens or even scientists from other fields, both interviewees suggested that better use should be made of different communication formats. At Elsevier itself, for example, its representatives reported undertaking experiments with short video summaries and testing other formats.

Moreover, beyond the broader publics having *no interest* in general and possessing *no skills* to understand the subject-specific language, the list of barriers for engaging with them was further prolonged by another component, namely that of having *no time* – on both sides. On the one hand, there is arguably no time in society “to absorb the knowledge” [int_r11:48] that is already available for free, but not being used. And on the other hand, public engagement would require additional time and effort from researchers themselves who are usually already very busy with their regular jobs. Moreover, for academic authors who wished to share their work more broadly, other digital tools were seen as more effective for promoting its visibility and uptake. For instance, consider this interview quote with a researcher in genetics, who appeared highly skilled in communicating about his research results:

“But the thing is, you might be talking to the wrong person, Elena, because, you know, for me this is, I’m young, you know, I use Twitter, I know everything about computers, so for me, this [Open Access discussion] is such a thing of the past, you know, so what you might want to do, is talk to a very, you know, important *hot shot* who is in his 50s, and who actually is in a position that he can, you know, determine what is the, what are the policies, he might have a completely different opinion, an old-fashioned [one] in my view, probably, but those are the persons that at some point you might want to target” [int_r16:29-30, emphasis added].

Similarly to this geneticist, many researchers reported using social media and so-called academic social networks to follow research news from their peers and other authors or institutes of interest. But these channels were also sometimes used as discoverability tools to learn about new publications and to spread the word about researchers’ own recent contributions. Although some wariness was expressed with regard to the ethical and legal dimensions of such practices, particularly concerning the business model of “monetising attention” [int_r2:75] or selling (meta-)data about the users and their behaviour, the interviewed researchers also recognised the advantages offered by such platforms. As explained by another interviewee:

“But on the ResearchGate, I put more of my stuff, and I put it more integrally, PDFs, although technically, I’m not allowed to, but, and that is interesting, because you can see where from people download your stuff, and then, you can see that sometimes, you have downloads from African countries or South American countries, where, you know, that normally it might be difficult for some of them to have access to your papers, so you know, that’s good and that’s the good thing [about it]” [int_r7:58].

Given a vast array of digital tools and other modern-day possibilities in electronic communications (among them, most frequently named were ResearchGate, Twitter, Mendeley, and Google Scholar), the importance of publishing a journal article in Open Access was seen as rather diminishing in this context. Or, in the words of another interviewee, one could easily increase the visibility and impact of one’s own work “*regardless of open access*” [int_r12:12] (emphasis added). On top of the list of these reservations, in many cases no clear citation advantage of choosing to publish one’s work in Open Access was perceived. Instead, as several interviewees suggested, it might have beneficial effects for increasing the *visibility* of one’s publications, but not necessarily

their *citation rates*.

In this respect, a more nuanced pattern of the advantages of Open Access for authors of scholarly publications started to emerge. Based on their experiences with various publishing models, numerous interviewees reported noticing an accelerated growth of views and downloads when they opted in for Open Access in subscription-based journals. That is, combining established journal brands and paywall-free access to individual articles, as offered under the VSNU-Elsevier deal, seemed to indeed give its authors an edge and help attract attention. However, to earn a reference in subsequent works, the relevance and purposeful fit of the citing and the cited publication was still seen as the most decisive factor.

But the type and scope of a given publication seemed to play a significant role as well. As observed by one researcher in acoustics, “it’s difficult to compare [because] there are some articles which are more technical, which have less citations than other articles [that] have a wider scope” [int_r12:13]. This view was shared by another researcher in evolutionary biology: “I think, it really depends on what the paper is about, to be honest, so I, like this biological review paper, which is not in open access, but I have it on my ResearchGate profile, and for that one, I think, because this is a review paper, it gets more citations, of course, because, you know, it’s kind of relevant to a lot of work” [int_r21:12]. Although no unequivocal regularities could be discerned yet, switching one’s publication from closed to Open Access seemed to rather amplify a certain predisposition that the publication may have already had for getting viewed and/or cited. If any, it appeared to be dependent on a range of other factors, including the reputation of a journal, rather than the publication’s access status.

Finally, beyond having *no illusions* about broad public interest in scientific publications and using *other digital tools* to effectively promote their own work, a large majority of interviewees perceived *no (big) access problems* in finding and downloading academic journal articles. In this light, the purpose of paying extensive APC fees for opting in to Open Access, as already offered by many subscription-based publishers, seemed to be highly questionable to this researcher in cardiology:

“Well, let’s say, this is, if anything, this is a positive addition ... if you had to pay a fee of, let’s say, 500 euros or 5,000 euros ... frankly, it’s not unlikely [that] I would not go for it, because it is my impression, that [other institutes in the field] will have access to most journals [anyway] ... and of course, what [do] you do if you don’t have access to something interesting – you simply just write to the corresponding author. And I never had [a case] that they would not send you something within a very short time, so you circumvent the subscription hurdles” [int_r9:4-6].

As can be seen from this example, researchers in the Netherlands often expected other researchers working in related areas to be covered by their own library subscriptions. In case they weren’t, as suggested by the interviewee above, there were other ordinary ways to get a copy of a desired article – such as simply writing an email to a corresponding author to ask for it. This sentiment appeared to be prevalent among the interviewed researchers and sometimes even to bring further beneficial side effects. As explained by another researcher in psychology:

“Because it’s very easy, if you need an article, and it’s paywalled, then you just ask the author to send you the paper, and they can, and they will, so, and that’s also a very nice way of [learning about people], okay, this is an author that usually sends me papers, and yeah, that’s, you know, you consider those as nice persons, and you are more likely to ask them other questions, you know, it creates more of a network, of easier networking option” [int_r4:31].

In addition, sharing one’s articles informally via academic social networks like ResearchGate emerged as a common practice among many interviewees. Even more so, it prompted questions as to how much *additional access* paying an APC fee would really provide. Because, as explained by one medical scientist: “articles that were not on open access are also on the ResearchGate, so if you are my research friend on ResearchGate, you can read my articles” [int_r8:17]. Beyond this widespread custom of sharing publications among peers in (online) networks, further means to circumvent access barriers were popular among the interviewed researchers. Here again, whether a given journal article was available in Open Access on the publisher’s website seemed to play no decisive role. In the words of a PhD student:

“It doesn’t really matter for me, because even when I don’t publish open access, I still put my papers online on different websites, for people to have access to, so the open access thing is not really a big deal for me” [int_r20:41].

Furthermore, the list of possible workarounds, in case one might still hit a paywall, was extended by some other familiar remedies, such as asking one’s sister or a friend with a library subscription to download the PDF and pass it along. In the words of a researcher who was searching for a job at the time of the interview, such informal social services have proved to be a reliable method to circumvent access barriers from time to time:

“So that’s the easiest route, and in that sense, as long as there are quite a lot of people still in my surrounding, affiliated with these universities, it’s not really a problem, except that it’s just annoying: if you have found this one paper that you really want to read, then you want to read it right away, and not first in two hours before you get it, so that’s, I mean, there are worse things in life” [int_r11:26].

Interestingly enough, academic libraries have also engaged themselves in compiling lists of alternative means and creative solutions for how to access the full text of a published journal article. For example, a brochure titled “How to get the PDF?”, “a general guideline to help individual researchers in getting access to the PDF of an article, in case access via their own institute is difficult”, was composed by UKB, the consortium of university libraries and the National Library of the Netherlands.¹¹¹ Among twelve alternatives listed in this document, requesting a copy via the author or a library was recommended, along with installing a web browser extension such as “Unpaywall” or “Open Access Button” that instantly automates an article search for legally deposited copies. Furthermore, some more controversial and not always

111 See https://www.openaccess.nl/sites/www.openaccess.nl/files/documenten/howtogettothepdf_march_2018.pdf [last checked on 08/09/2021].

legally impeccable possibilities were also pointed out. As affected readers could learn under No. 5, they could try out the Twitter hashtag “#icanhazpdf together with a link to the requested publication; if somebody has access, they can send you the PDF” (UKB, 2018, n.p.). Even more intriguingly, No. 12 indicated another popular, if semi-secret option as a last possible resort:

“If all else fails, you may be tempted to use Sci-Hub. Do realize, however, that in many countries, including The Netherlands, the use of Sci-Hub is considered as an illegal act, as it involves content protected by copyright laws and licensing contracts” (ibid.).

Without going into a renewed discussion on the current landscape of academic publishing and its tectonic shifts (see also chapter 5. *Framing the story*), it is important to note that controversies over such “obviously illegal”, yet “immensely popular, inside and outside academia” sources such as Sci-Hub (Curry, cited in Schiermeier, 2017) once again show the existence of a plethora of tools for circumventing digital access barriers, when needed. At the same time, many of these legal, and less legal, methods implicitly rely on a professional network of academic libraries and their services, if not always acknowledged or even realised by their regular users. As we shall learn from the following section, the roles and experiences of librarians at academic libraries, and not just those at so-called “shadow libraries” such as Sci-Hub, add further nuances to this discussion. Furthermore, interviews with several researchers who were familiar with the mundane circumstances of doing research both in the “rich” and “poor” parts of the world served as a major source of inspiration and revealing observations. In this light, the dispute over the usefulness versus uselessness of Open Access will be continued by bringing in a third perspective to this debate and suggesting some original analytical categories developed in relation to this key area of tension.

9.2.3 Complicating the matters: On “access bubbles” and (un-)expected beneficiaries

In the previous sections, I have shown a variety of arguments and illustrative examples that were put forward by interviewees in this case study when discussing the potential benefits and beneficiaries of free access to scholarly publications. There were two main camps that quickly emerged and which could be roughly divided between those claiming the nearly universal usefulness of Open Access to scientific publications, and those casting doubts on such huge promises and suggesting instead a certain uselessness of this publishing model, at least under some premises. Yet what turned out to be a particularly illuminating pathway for scrutinising such arguments was considering the particularities of each claim and the positionality or *situatedness* of the individual interviewees in relation to their expressed views. Out of this, I have crystallised a third perspective, which neither claims the absolute utility of the proclaimed benefits of Open Access nor denounces its potential altogether.

To follow up on the suggested myriad of (digital) tools and methods used to circumvent subscription paywalls, which are still imposed on a huge majority of scholarly journals, an important differentiation factor appeared which was contingent upon the potential users’ (non-)academic status and familiarity with academic structures. While professional researchers could be reasonably expected to be knowledgeable about and skilled at approaching their peers,

even such a *low-tech* idea as to request an article copy via email directly from an author was said to be an insurmountable (social) barrier to those outside academic circles. The perceived distance to esteemed scientists and the reservations that were associated with it were said to hold back regular citizens from even thinking of contacting them directly. Such observations were described by some librarians in the VSNU negotiation team as one of the reasons for them to advocate for Open Access and, in this way, to bring the two populations closer together.

To showcase this point, one of the interviewees among the VSNU negotiators provided examples of typical situations and bread-and-butter encounters with users at public libraries. As stressed by this interviewee, those looking for scientific information would comprise only a minority of their patrons. However, serving the needs of this population would imply huge difficulties, since non-academic users were typically not familiar with alternative resources offered by university libraries. As a result, they were often asked to pay for each download when discovering an interesting scientific article on the publisher's website – and were stopped by the paywall. Moreover, making use of inter-library loans, as practised between academic and public libraries as well, appeared to be a barely satisfying piece of advice for occasional public library users.

At the same time, even such mundane reasons as the physical or emotional detachment of university buildings and their libraries from broader societal groups seemed to be troubling enough in arranging access to scholarly literature. Therefore, when hearing some academics argue against the usefulness of Open Access, one long-time negotiator on the side of libraries would get quite exasperated with such arguments. From this negotiator's perspective, most academic researchers appeared to have little empathy with their potential (and missed) readers and the roadblocks that they were facing:

“But then, it has never been an idea for academics; academics think very easily about that, ‘oh, everybody can come to my work, and get my work, if they write me an email, then they can get an article from me’. Who is doing that? You are not going to write an academic, [who] I know is very busy, and [ask] for an article. This silly, this is [a] silly idea; nobody does that. Yeah, the peers do it, but you do it with a peer that you know, so the idea is still to make the threshold as low as possible” [int_4:93-95].

That is, while a quick email request was often suggested as an easy, and highly effective, solution by interviewed researchers, it was seen as a prohibitive barrier when it came to interested readers of academic articles beyond the walled gardens of academia. Given the marked tension between these viewpoints, a stark discrepancy between those who were concerned about inequalities in access options and those who weren't became evident. This finding is particularly palpable in the previous interviewee's vigorous reaction to such arguments, and was further observed in comments from researchers who were familiar with (or had themselves experienced) unstable and precarious employment situations elsewhere. Following the Grounded Theory (Charmaz, 2006) and situational analysis (Clarke, 2005) approaches, in a subsequent step I have identified the main variable here as an ignorance (whether wittingly or unwittingly) of the possible difficulties in accessing scientific articles that have reportedly been experienced by other academic or societal groups.

In short, many academic researchers in well-resourced institutions have grown accustomed to the extensive coverage of journal subscriptions and other services provided to them by their libraries, though not always clearly noticing these offerings. The well-intended aspiration of institutional libraries to supply their own researchers and students with scholarly literature as smoothly and as comprehensively as possible, somewhat ironically, has rendered this socio-technical infrastructure *invisible*, when short of breakdowns (Star, 1999). In contrast, the attitude of taking for granted instant access to all relevant scientific publications was noticeably lacking among researchers at less generously resourced locations. Instead, they were confronted with budget shortages and the limited subscription packages of their institutions on a daily basis. Arising from these observations, I have come to develop my own analytical category of privileged researchers living in academic “access bubbles”, as those who had been spoiled by their comfortable positions and generally perceived no access problems and/or any serious barriers to accessing their own or others’ work.¹¹²

Yet the lack of awareness about the costs and efforts behind this vast invisible infrastructure – actually, a salient feature of most infrastructures, by definition (e.g. Karasti & Blomberg, 2018) – have increasingly been criticised by librarians and other actors as its main maintainers. Given that Dutch universities would spend an estimated 40 million euros annually to purchase subscription licences to electronic resources and physical copies of scholarly books and journals (for an overview per publisher, see section 8.2.3.2), these huge costs incurred by the public purse were also referred to among the major considerations in state secretary Dekker’s letter to the Dutch parliament (OCW, 2014). In the words of one interviewee, who was involved in writing the letter:

“The average researcher is not aware that there is 40 million [euros of] research money being spent to [purchase academic subscriptions], so there is this idea, so it’s good to have open access because you want others than the academics to have access to publications, for instance, but the question is, whether it’s, whether academics are aware of the system, whether they care” [int_16:142-146].

As argued by several VSNU negotiators, because most researchers still had to be sensitised to the costs and deficiencies in the current state of academic publishing, many of them didn’t see any need for extensive reforms. Switching the predominant publishing mode to Open Access, in turn, was proposed as a solution which “could be maybe cheaper than subscriptions” [int_4:112]. Therefore, “making the costs transparent and the revenue streams transparent” was expected to “help a lot of researchers to be more like ... proponents of open access”, as it would increase their awareness of the costs that had, until this point, been invisible to them [int_2:283].

However, such a broadly perceived lack of awareness about costs among academic researchers seemed not to be the case with this interviewee:

112 Another source of inspiration for this notion derives from the term “filter bubble”, which describes the selective personalisation of information displayed to users of social media and internet search engines. Based on their usage data and (assumed) preferences, as assessed by automated algorithms, such selective information filtering ultimately leads to a situation of informational isolation (Pariser, 2011). See https://en.wikipedia.org/wiki/Filter_bubble [last checked on 11/09/2021].

“I always was at institutions that could subscribe to, like Web of Science, so that was never a problem for me, but I have a lot of friends who ask me to download publications, but then, yeah, personally, I never had problems, but I know that people do have problems” [int_r21:5].

With an eye towards a different situation for other researchers in her native country in Southern Europe, this interviewee further suggested that the expected benefits and beneficiaries of Open Access to scientific publications be distinguished from those of more open sharing of other research products, such as data and code. In the words of this interviewee:

“In terms of quality of work, I’m not sure if [open access to publications] makes any difference, but, you know, having data or not having data, or having code, makes a difference, and I feel that open access is more about *fairness*, so can everybody actually access [publications]? ... I mean, that’s more kind of [a] moral question rather than if research is going to be better or worse” [int_r21:1-3, emphasis added].

Beyond differentiating Open Access and its promises between improvements to research workflows and the actual benefits to various types of interested users, other interviewees put forward further critical remarks and considerations. For instance, when asked the same question, publishers at Elsevier were generally sceptical about the hoped-for prospects to enable a broad uptake of scientific knowledge among various societal groups. With regard to a popular argument in Open Access advocacy and VSNU materials that called for establishing the principle of public access to publicly funded research results, one interviewee at Elsevier wondered if switching scientific articles to Open Access was the right answer:

“Of course, if we make all our articles open access, other people are going to benefit, and *it’s not the Dutch around the corner*, it’s mostly other industries or other scientists around the world, so, you know, if you are in China, you think ‘great, I cannot wait for the whole [of] Europe to go for gold open access, this is really a super model for us’ [laughing]” [int_p1:327-329, emphasis added].

As can be seen from this quote, another potential beneficiary of a large-scale Open Access transition was anticipated in the realm of industrial research. These commercial research companies and big industries, which maintain their own research and development (R&D) departments, play a special role in the scholarly publishing ecosystem. While they usually publish little on their own (or choose to exploit and disseminate their research results in different ways), according to an interviewee at Elsevier, they were said to subscribe to a significant amount of journals to access scientific articles. As this interviewee continued:

“One thing that is always forgotten in this [open access] transformation is [that] today, industry, they pay quite a big chunk to us for access to our journals; if the whole world would be open access, they would say ‘great’. They don’t publish much, but they read a lot, so that means that 10, 20, 25% [of journal income] will be gone. Who is going to pay for that instead? That means that the burden is shifted even more to the universities, who are challenged anyway” [int_p1:313-319].

Following this argumentation line, in the event of an all-encompassing switch to an Open Access publishing model and the elimination of remaining journal subscriptions, the publishers would feel forced to compensate for this lost income by other means. Interestingly enough, this projection further suggests that the current Open Access strategy in the Netherlands would carry considerable advantages for major corporate subscribers of scientific journals. Moreover, following the reasoning above, such a situation would pose some further uneasy questions. Most importantly, would this mean that commercial research companies would be among the biggest (un-)expected beneficiaries of a policy-driven and government-subsidised effort to bring about a fully Open Access system? And what about other knowledge practitioners and occasionally interested regular citizens, who were routinely portrayed as the main target group in such initiatives, yet whose different informational needs were largely neglected?

While professionals in the health care sector or small- and medium-sized businesses were named in Dekker's letter as some of the typical extra-academic beneficiaries of free access to scientific journal articles (OCW, 2014), the letter kept silent about the potential benefits of Open Access to big enterprises such as pharmaceutical companies. Given that, for example, the "life sciences & health" domain, including research and development in the areas of biotechnology, nutrition, pharmacy, and medical instruments, was prioritised in the Dutch Top Sectors approach, it is not unlikely that various policy-makers would have a keen interest in supporting these business branches (for more details on Top Sectors, see also section 8.2.2.3). However, the official narrative preferred to highlight such use cases as helping one-person law firms or patient associations in applying the most recent scientific findings to their work.

Reading between the lines, this observation seems to indicate a further parameter with regard to the fairness aspect and separating the potential *winners and losers* of the proposed new Open Access world order. Namely, whether and how much a particular actor group was able to pay and was used to paying for access to scientific articles under the subscription model in the old days. For the imagined broader publics this means that individuals in various professions, who were seen as having been blocked from applying the latest scientific knowledge to their work because of costly paywalls, i.e. the society at large, would benefit. Yet in light of the effect of subsidising the R&D activities of big industrial companies, these corporate recipients might be considered somewhat "unfair" beneficiaries of an Open Access transformation, considering their strong financial standing. Ultimately, one might wonder whether such companies should concede rebates for consumers of their products that were developed using research results funded by public money.

As can be seen from such open questions, the discussion of fairness when switching from the old to the new envisioned publishing system could be said to entail some further intriguing aspects. Following representatives from Elsevier, the – still dominant – subscription model also had several advantages on offer in this respect. For publishers, it allowed them to distribute the publishing costs across a broad customer base. In this way, as they claimed, not only would various subscribers pay for accessing scientific journals according to their needs and financial possibilities, but such programmes as "Research4Life" were also even argued to help mitigate inequalities in

the global access to scientific literature.¹¹³ Therefore, with a view to the researcher population in different parts of the world, and especially in its less affluent regions, several problematic aspects were anticipated in relation to a push for an APC-based Open Access publishing regime:

“Then, there is a big problem, of course, if you are from the Global South and you have no money, so then, you don’t have access to the journals, but thank God, there is Research4Life [a dedicated free or low-cost programme for accessing literature in certain world regions], but you cannot afford to pay the APCs either, so, you know, that is also maybe not the model that solves everything” [int_p1:302-306].

In summary, differentiations of the benefits and beneficiaries in the promoted Open Access publishing transition away from the journal subscription system appeared to mainly run along the lines of *rich vs. poor* academics, as well as *academic vs. public* users of scientific publications. In this respect, the fairness aspect brought to the surface some further practical issues for assessing the usefulness and/or uselessness of Open Access. These range from the limited use of such publications for professionals and regular citizens, if the language and publication venues fail to be adapted for a non-academic audience, to somewhat unfair benefits being granted to private companies and scientific competitors in other countries.

Yet what none of the interviewees have pointed out explicitly so far is the production of new *losers* in this kind of Open Access transition. That is, while there were arguably many ways, including dedicated programmes, to circumvent the paywalls of subscription journals for those who currently could not afford them, requiring APC payments instead was likely to present an even more significant and unfair barrier for authors with limited funds. Moreover, many of the interviewed researchers associated switching to a new logic in academic publishing with another perceived dilemma: the potential conflict between the wish to advance science as opposed to the advancement of their own individual careers. This tension area is the next to be explored in the following sub-chapter.

9.3 Key tension area III: Advancement of science vs. individual careers

In this third key tension area, I take a closer look at the impression conveyed in numerous interviews with researchers in the Netherlands that there was a fundamental dilemma to be resolved. That is, although publishing more in Open Access was often perceived as ultimately benefiting scientific progress and the public good, it was said to stand in conflict with individual career ambitions under the current research assessment regime. On the one hand, the arguments covered here include references to the ethos of science and a certain degree of openness as a

113 On Elsevier’s homepage, Research4Life is described as “central to achieving universal access to scientific, technical and medical research information. A unique public-private partnership between UN Agencies, Yale and Cornell Universities, and 160 publishers”, ... it “has provided researchers at more than 10,000 institutions in more than 125 low- and middle-income countries with free or low-cost online access to up to 132,000 leading journals and books in the fields of health, agriculture, environment, applied science and the law” since 2002. See <https://www.elsevier.com/about/corporate-responsibility/research4life> [last checked on 11/09/2021].

prerequisite for sharing and building upon each other's knowledge. Opening up some of science's "black-boxed" processes was thus seen as a good way to advance research and support its self-corrective function. On the other hand, complaints about pervasive publication pressures and efforts to get published in particular scientific journals were omnipresent among many of the interviewees who have come to adopt strategic publishing behaviours because of ubiquitous competition-driven logics.

A certain *e/valuation gap* between what is valued and what is being evaluated in academic life and work has become clearly noticeable (Felt, et al., 2013). At the same time, a small number of academic researchers seemed to be agnostic about such allegedly diverging goals. For them, there appeared to be no conflict between advancing scientific understanding and own careers when choosing to publish their work in Open Access. This additional perspective will be considered along with anticipated adaptation strategies in the case of a transition to the new publishing mode indeed taking place, as well as some examples of research fields and publication cultures, which have been practising Open Access extensively for a long time already.

9.3.1 Advancement of science: Doing the right thing

While the projected usefulness of Open Access was criticised by many interviewees as a somewhat exaggerated or even overtly naive view, as seen in the previous section, bringing in more openness and transparency into the current workings of the science system was seen as a means to help cure its ills and structural flaws. One of the main issues in the Dutch government's and other political initiatives that was met with criticism among interviewed researchers concerned setting a "100% Open Access" target in a given year. This was dismissed as a simplistic objective for positioning Open Access to scientific publications as an endpoint in itself. In particular, implying that the mere availability of free PDFs is equal to the accessibility of scientific knowledge was challenged as a narrow understanding and a poor interpretation of the scientific and societal impact of doing research. Instead, it was argued, universities should be encouraged to reconsider their responsibility towards the societies that they are part of and to facilitate two-way interactions between science and society more actively.

This critique was particularly stark from a researcher in social theory who considered switching journal article PDFs from subscriptions to cost-free online access to represent only minimal compliance in fulfilling the public tasks of universities. In his view, universities' duty towards society should be much broader and include engaging themselves more actively in the co-production of "public knowledge":

"To contribute to public knowledge, that's a different thing than providing access to knowledge, it means that you actively produce public knowledge or publicity of knowledge, which is to seek out publics and to engage with publics, which goes one step further than saying 'all our publications are open access, so now we have covered our relations with non-academic publics'; that's kind of, that would be kind of a lazy way of engaging [with them]" [int_r7:5].

In a similar way, although with a slightly different emphasis, a number of other interviewees suggested that a widespread uptake of Open Access publishing could be seen as a first step into changing the whole science system for the better. In the words of another researcher, “this open access is also making science more transparent, you have many journals nowadays, it’s really absurd what is happening in the world” [int_r6:15].

In a different vein, the growing number of scientific journals and published articles, along with the difficulties of keeping up to date and sifting through scholarly literature for relevant publications, were other issues that many of the interviewed researchers lamented. In this respect, shifting the dominant publishing mode to Open Access (and perhaps developing some additional tools to support text and data analysis), was associated with the possibility of improving the discoverability and reproducibility of research results. Such an outlook, within which the broader agenda behind the initial Open Access goals was situated, also seemed to have motivated some VSNU negotiators. As remembered by one of the members of its negotiation team:

“If we go for open access, *maybe it could be a start*, for me, it was one of the motivations, it could be a start to change the publication system in general, because [sometimes researchers produce several articles on the same results and submit them to different journals], [but] if it is in open access and generally available, it is silly to try and to have another article on the same subject, because it’s no use, it is available already to everybody ... so my maybe naive idea was, it probably could change the publishing system in general, because there will be less articles available, just better for the whole world” [int_4:96-102, emphasis added].

Because of the current incentives system in academic structures, which appear to favour the quantity over quality of scientific publications, several interviewees referred to the so-called “salami slicing” (or publishing) phenomenon. That is, a practice in which research findings were deliberately *sliced* into smaller chunks in order to generate a higher number of publications to be added to one’s publication record (Fanelli, 2020). If all such publications were available in Open Access, or so the reasoning goes, it could make such scientific articles more easily comparable and reveal clear redundancies. In this way, it was argued, this development could eventually serve as a disincentive to continue such tainted or unethical publishing practices.

Furthermore, beyond helping to correct the perverse incentives in the current publication and evaluation regimes in academia, it was hoped that supporting different and innovative Open Access publishing models would bring in “more diversity” to the academic publishing landscape, which was heavily dominated by a few big companies [int_r22:67]. Similarly, one can find calls to expand the heterogeneity of publication types and models in academic research and evaluation, as well as to complement Open Access initiatives by supporting a diversity of actors in scholarly publishing, sometimes also termed as “bibliodiversity”.¹¹⁴

Another possible advantage with respect to novel Open Access journals was associated with their

114 See, for instance, the “Jussieu Call for Open science and bibliodiversity”, available online at <https://jussieucall.org/jussieu-call-for-open-science-and-bibliodiversity/> [last checked on 05/12/2022].

potential to facilitate openness in scholarly communication in general, as well as in terms of providing space for innovative content and ideas. As suggested by a professor in organisational psychology, such journals could genuinely help advance scientific research by widening the narrow corset that the research community has come to lace up itself. From her perspective, the implicit and explicit rules dictated by mainstream journals have arguably led to a situation where only a particular format and type of research results are accepted for publication:

“The reason why I would publish in open access – that would be my main reason, I have not done so, but it would be a possible reason – is that ... open access journals are more open to replications or to critical studies, or to studies that are not perfect in design but they do make a point, than more traditional [journals] that are very selective; if you just, if your data is not perfect, if you go against dominant stream of literature, then it’s very hard to compete with them, you never get to stand a chance, and *in open access you do stand a chance*” [int_r18:16, emphasis added].

Such difficulties were further experienced by a lecturer at a university of applied sciences who felt as though she were repeatedly going against the grain when attempting to publish her findings from practice-oriented research work. In her experience, the restrictive standards imposed by many academic journals have come to limit not only the circle of potential contributors to such journals, but also the messages that are being communicated there. In the words of this interviewee, who was denied the chance to report her findings in the way one article manuscript was initially drafted:

“There was so much complexity there [in my work] that I felt really frustrated, like there were examples that I wanted to put in there, but I couldn’t, you know, so you need to sort of try and size it down, I don’t know, that made me think like ‘what happens to all the rest of the knowledge that’s in the back of my head, that might never be used [and published]?’” [int_r13:43].

In light of such disenchanting experiences, a broader adoption of Open Access models, both by established academic journals and novel publishing venues, was seen as a promising way to help alleviate at least some (cultural) barriers in the current workings of scholarly communication.¹¹⁵ For this particular researcher, an eventual solution emerged in her consultations with information scientists who suggested that she upload her work to subject-specific online repositories. Considering her research focus about educational technologies and engaging with local teachers interested in applying them in their own classes, this suggestion appeared as a plausible answer to the restrictions imposed by academic journals and served as a valuable “different way of publishing” one’s research results [int_r13:17]. Moreover, such repositories offered further useful functionalities, like integrating multimedia “with little clips of movies or pictures and things to make it more appealing for practice” (ibid.).

As reported by another interviewee in the field of genetics, all of his article manuscripts were to be

115 Another case study with editors of non-profit Open Access journals has found that engaging with Open Access can be itself experienced as a form of resistance against dominant commercial models and capitalist influences in academic publishing (Price & Puddephatt, 2017).

found in a subject-specific repository called “bioRxiv”¹¹⁶. In his words:

“So the great thing with regard to bioRxiv is that as soon as you submit your paper ... within 24 hours, everybody can read this, so [it is] also [an] excellent way of disseminating knowledge much more quickly than what we’ve been used to” [int_r16:60].

According to this researcher, the workflow that he and his research group have adopted offers numerous advantages. When they submit an article manuscript for a journal publication “through normal ways”, they simultaneously upload it to bioRxiv. After a quick formal check by repository staff, this deposited preprint version can be shared online with a citable permanent link and according to a Creative Commons licence chosen by the authors. In this way, a “great paper” can be disseminated and instantly discussed among colleagues via social media channels “and then you also know that it will be in Nature or Nature Genetics and, you know, in nine months” [int_r16:61]. Therefore, the rapid pace of science communication enabled by such publishing platforms and online tools was said to strongly benefit scientific discoveries by and large.

Moreover, it was argued that a more widespread adoption of such practices would also have beneficial effects for the whole publishing system. To describe the disruptive potential ensuing from such community-operated repositories, this interviewee concluded:

“So also on that side, I believe there is, this bioRxiv stuff is going to contribute a lot also towards more transparency, because you can imagine, if this paper is not published within a year or within one and a half year, either the paper is out of crap, and that’s something that you, in a lot of cases, can judge yourself fairly well, or some things happen in the review process, so it’s also a way of, sort of pushing these journals to get those results out soon” [int_r16:37-38].

Increasing the level of transparency and shedding light on some of the darker corners in science and academia with the help of more open and flexible publishing models was accentuated time and again in numerous interviews with Dutch researchers. For example, for one organisational psychologist, it appeared to be a strong motivating factor to support a full-scale transition to Open Access:

“I would be very much open to having a complete open access system [knocking on the table to add emphasis] and the main reason I am so in favour of open access is simply because it does create more transparency” [int_r18:29].

It seems that having unrestricted and seamless access to scholarly publications was considered by many interviewed researchers to be an initial step into reforming science in general and its communication system in particular. In this respect, the idea of *opening up* journal articles and

116 On its homepage, bioRxiv is described as “a free online archive and distribution service for unpublished preprints in the life sciences. It is operated by Cold Spring Harbor Laboratory, a not-for-profit research and educational institution. By posting preprints on bioRxiv, authors are able to make their findings immediately available to the scientific community and receive feedback on draft manuscripts before they are submitted to journals”. See <https://www.biorxiv.org/about-biorxiv> [last checked on 12/10/2021].

books, as well as other parts and products of research endeavours, was expected to help rectify the faults that many researchers have grown to feel uneasy about. As for the next steps, the sharing of data, code, and research protocols was “going to be the next hurdle” in this process [int_r16:33-34].

These reported deficiencies of the current research publishing and evaluation system consisted of a colourful bouquet of complaints, ranging from salami publishing, the reproducibility crisis, corrupt practices such as academic researchers pitting each other against their rivals, and other perceived animosities under the shield of anonymous double-blind peer review reports. In the end, the hope was no less than to freshen up the stale air in the upper floors of science bureaucracy and to loosen the grip of some of its encrusted structures.

Because of the plentiful potential ascribed to more openness in scholarly communication, some interviewees have come to wonder why such a transformation hasn't occurred yet. If Open Access were to become the new standard for disseminating research publications, instead of lining up for a place in closed-access subscription journals, as was still common, many researchers expected that they would switch their publishing habits from “being closed” to “being open” [int_r5:18]. Or, in the words of another interviewee, “if that is going to be the default situation, I will just do it” [int_r18:64]. Interestingly enough, these two interviewees – both in the field of psychology – further suggested an additional consideration for how to approach this problem.

To start with the PhD student in psychology, who was working in the area of methodology and statistics, he felt that publishing in gold Open Access was currently “less attractive and actually more of a hassle for researchers” than publishing in subscription-based journals [int_r5:51]. From his perspective:

“I think [that] the main problem at the moment is, even if the incentive systems would be okay, the thing is, now the path of least resistance is being closed, in all facets, whether it be data, whether it be the publication, whether it be the materials, whether it be how you document your work – you name it, and the fact of the matter is, we could flip it around, and we could incentivise: *make the path of least resistance to be open*” [int_r5:18; emphasis added].

As he explained further, in such a then-hypothetical scenario, if someone would wish for their research to stay closed, it would be possible, yet they would be required “to provide some reasoning for it, so you need to take the extra step to explain why” [int_r5:19]. For those hesitant to do so, such behaviour would likely come under suspicion, and publishing behind a paywall would thus feel like a less comfortable choice. When applied to the business model prioritised in VSNU negotiations, this resulted in the following proposition: “now we have APCs that cost money to publish open access, why not that, if you wanna be closed, okay, but pay, let's put it like this” [int_r5:20]. In a similar way, another researcher suggested: “once you've made the full change ... it's just [a] different way to organise the money”, so that the whole switch from closed to open publishing should be possible on “cost-neutral” terms, as aimed at by the VSNU negotiators [int_r17:8].

This *principle of least resistance* was also referenced by a professor in organisational psychology. In

her words:

“So it’s just a switch in default, and so here, too, with open access, if they would switch the default to ‘it’s open access’, and you would have to make an effort to be not open access ... there has to be a special reason to opt out, whatever kind of reason, for, let’s say, great secrecy of data, or whatever option you have ... and then, I guess, everybody will use it, because the whole administrative steps that you would have to make, I mean, we have a very busy life, you know how it goes, if you have to go an extra mile, you would always, it’s very easy to just not do it, as long as there are alternatives available, but if it’s a default, people will just do [it] – it is just a fact of life” [int_r18:47-48].

That is, by switching the default publishing mode from *closed* to *open* access, these interviewed researchers envisioned their peers going along with the new normal. Although some might still attempt to bypass it and cite data privacy as an excuse “just to be able to not share the data” [int_r5:68], the majority were likely to conform to the new requirements as the most pragmatic approach. However, there was an important caveat for such a conversion to take place. Namely, it had to become “a standard practice” first [int_r22:69]. Or, in the words of an interviewee, it would only work “when it’s institutionalised change”, which would also imply that “the tenure criteria and the criteria for becoming a full professor changes such that you would have to focus more and more on quality rather than quantity” [int_r18:96]. At the same time, the structural barriers in institutional evaluation practices were named by numerous researchers as the main obstacle impeding an Open Access transition. Next, I deal with precisely such concerns, as expressed by numerous interviewees.

9.3.2 *Advancement of individual careers: Stuck in the “e/valuation gap”*

While in the previous section, interviewed researchers listed various advantages linked to a full transition to Open Access in scholarly communication – such as increasing transparency, making academic formats more flexible to innovative ideas, and speeding up the publishing process – the current setup of research assessment procedures was often highlighted as a serious obstacle to this pathway. Many interviewees expressed feelings of being trapped in a deep conflict between their willingness to advance science and scientific progress, and an existential necessity to secure their own needs and career interests. Possible disadvantages of being more open in one’s own practices included fears of being scooped by other researchers, particularly if someone happened to be quicker or have a better idea on how to continue work on one’s initial research results.

Keeping such trade-offs in mind appeared to be a sign of a field-tested survival mechanism in academia. Even the same interviewees, who were highly enthusiastic about switching the default publishing mode to open, as discussed above, turned out to be very cautious when it came to implementing this idea in their own practice. Beyond the perceived first-mover disadvantage, in case everyone else refused to follow suit, there were some further considerations, such as how to meet one’s formal obligations that were already established in employment or performance agreements. As explained by an interviewee at one of the main research universities in the

Netherlands:

“So I like the whole ideology behind open access but, [you] see, the main thing that stops me now from doing it is the money, and also, that most of the open access journals don’t have a very high impact [factor], and we are evaluated here on the basis [of] how high your impact factors are” [int_r18:19].

As can be seen from this quote, there were two main reasons that interviewed researchers have usually cited when explaining what prevented them from practising Open Access more actively. That is, the extra funding that was often required to publish one’s article without paywalls via hybrid or genuine Open Access journals, as well as the low reputation of these journals in the eyes of many researchers and research administrators. The importance of journal brands and their impact factors appeared to be most pressing among the interviewees at universities with high positions in respective university rankings. This concern was also shared by a PhD student who had recently graduated from another well-established university. For this early-career researcher, his hope was that “publishing papers is maybe becoming less of the only way to have impact and to be evaluated” [int_r11:82].

To induce an attitude change in institutional evaluation cultures, a widely shared proposal was put forward. Namely, for senior leadership at universities to set a good example themselves. In the words of one interviewee, “even though [our] policy says this isn’t allowed anymore”, the indicator-driven research and evaluation practices still persisted [int_r5:16]. Yet, as he continued, “if there [were] someone at the top who [were] saying ‘okay, we are not going do this anymore’”, they could use such policies “as a form of support to push it through, but that’s [stepping] out of line again” (ibid.).

A similar argument was also brought up by one senior researcher, who took up his colleagues on their duty:

“I think established professors could by all means give something back to society, indeed, and maybe increasingly publish in open access, but for young researchers, I think, there is a risk, because they are still assessed at the [worth of] journals that they publish in” [int_r3:26].

In his further comments, a certain chicken-and-egg situation came to light. Before a switch to the full Open Access system can take place, he argued, the criteria used for tenure-track positions and awarding research projects must change. Otherwise, one couldn’t advise junior researchers to publish their work in Open Access journals in good conscience under the current regulations. As this professor explained:

“As long as I cannot assure my PhD students that it makes no difference if they publish in an open access journal, which is not among the top 5 or 10 in the field, I cannot recommend this, because I would damage his or her career in this way” [int_r3:28].

Such a situation was further described by another interviewee as a “self-reinforcing negative system” where “it is also quite difficult for open access journals to become of high quality, because

people only basically try to publish their *left-over work* in the open access journals” [int_r18:27, emphasis added]. Although on the other side of this debate, it was deemed reasonable to assess the worthiness of a given contribution simply by reading it and relying upon one’s own experience, the more widespread practice appeared to resemble the proverb of judging a book by its cover. Here, the name and the reputation of scholarly journals, which have grown accustomed to demonstrating their position in the academic publishing landscape with the help of quantitative citation metrics, was often taken as a proxy for evaluating the quality of the individual publications within them.

Moreover, because of such shorthand rules that happened to govern academic affairs quite plainly, many interviewed researchers were also conscious about reaching the maximum, or rather *the right* audience when choosing where to publish their work. Since a considerable number of their peers only look at publications in these top journals, it was argued, one might risk escaping their attention if taking a diverging path. Hence, from an author’s perspective, as long as “my audience is not going there” [int_r22:32], it was seen as unrealistic to accept such a drawback. Instead, giving the new Open Access journals some time to “proliferate and mature” [int_r22:37] and to establish their own reputational profiles was suggested as a necessary prerequisite for a transition to full Open Access. However, supporting this process and waiting until novel Open Access journals proliferated sufficiently would run counter to the national strategy enacted by the Dutch government and implemented by VSNU. The aim of this strategy was instead to tackle those already well-established or “top” journals and to convince their publishers to switch their publishing and business models from subscriptions to Open Access.¹¹⁷

In this regard, a widespread underlying assumption in relation to Open Access journals – as also observed from preceding interview quotes – was clearly recognisable: although the operational model of a particular journal in no way determines the scope or claims made in its individual articles, the contents of novel Open Access journals were commonly perceived as being of poor quality or inferior to those of alternative subscription-based titles. Such an image problem largely derives from another phenomenon, which has effectively given rise to a blanket association of fully Open Access journals with so-called “predatory publishing” practices (Krawczyk & Kulczycki, 2021). This term, coined by then-librarian Jeffrey Beall at the University of Colorado Denver, found its way into colloquial language after Beall’s infamous list of “potential, possible, or probable predatory scholarly open-access” publishers and standalone journals came to prominence, along with 34 journal articles on predatory publishing authored by Beall himself (ibid.). In essence, such publishers were accused of “focus[ing] exclusively on article processing fee procurement, while not providing services for readers, or on billing for fees, [and] while abdicating any effort at vetting submissions” (Beall, 2015, p. 6). Building on the APC model, such publishers were said to monetise the publish-or-perish culture and to accept submitted manuscripts for publishing without proper quality checks, solely for the purpose money-making. What is more, some of these publishing venues adopted even more dubious methods for attracting submissions, such as imitating well-

117 To illustrate this point, I have developed a visualisation of two main transition trajectories in Open Access initiatives and discourses (see Šimukovič, 2019, p. 12) at <https://zenodo.org/record/3482831>.

known journal titles by using similar names or arbitrarily adding scholars to contrived editorial boards without their knowledge or consent.

Interestingly, numerous criteria that Beall used to compile his list, especially that of being driven by financial interests, could also be equally applied to common commercial publishers. However, his communication strategy has been found to firmly position Open Access at the core of the predatory publishing definition and to praise “traditional publishers” at the same time (Krawczyk & Kulczycki, 2021). Although Beall’s list was ultimately taken down by himself in January 2017 following numerous controversies and allegations of improperly including some publishers on it, the legacy of this notion is still apparent. As Krawczyk and Kulczycki (2021, p. 1) have concluded in their recent study on the conceptualisations of predatory publishing, the “overgeneralization of the flaws of some open access journals to the entire open access movement has led to unjustified prejudices among the academic community toward open access”.

These findings appear to be in line with some observations in this empirical case study. For instance, although the questionnaire used for the interviews with researchers in the Netherlands contained neither explicit nor implicit references to unethical publishing practices, some interviewees brought up this topic on their own. While these issues were said to be “not automatically connected to” Open Access, “the explosion of crappy journals” was repeatedly highlighted as “one big disadvantage” of [int_r17:66] and “a big challenge for open access” [int_r6:63]. The bizarre situation with “the wild growth [of journals] which are on [a] so-called blacklist” [int_r6:17] appeared to be particularly worrying to one professor in electrical engineering. As he explained:

“Our policy is [to] publish only in top journals, such as IEEE and Elsevier, and other, and Taylor&Francis, so we don’t publish in these obscure journals ... but I know from the other projects, from our partners, and I see that, I have a lot of contacts in many countries, I see that they [do] publish [in these journals], because they are, they want to publish as well, and they publish in journals which *have totally no value*” [int_r6:56-57, emphasis added].

Because these journals “don’t care about quality, they don’t care about scientific impact; they only care about having input” and collecting payments, they were described as a “money laundering machine” by this interviewee [int_r6:17x]. This financial aspect, in turn, was noted as an interesting outcome in the overall ecosystem of academic publishing which was (to be) closely watched by established publishers as well. From the perspective of another researcher, who also served as a journal editor to one of Elsevier’s journals:

“So I think it’s really useful for traditional publishers to watch these developments, because they can be convinced by this, that actually, paying to publish can be a viable business model, because these companies are making money, and it doesn’t only have to be that you pay to read; that’s not the only way in which this business can work. I mean, these companies show this” [int_r17:67-68].

That is, the fate of such inglorious Open Access spin-offs, which happened to have discovered

some previously unforeseen features of the pay-to-say principle and taken it to new heights, could be expected to also serve as an important test case for conventional subscription-based publishers. As suggested by this interviewee, such dubious publishers have demonstrated that it is “possible financially” to operate on a different causative principle, and that this might motivate other players to start engaging with the APC model more actively [int_r17:70]. Besides this perhaps unanticipated financial feasibility test with various Open Access publishing models, it is conceivable that experiences with so-called predatory publishers have also provided further lessons for their “traditional” counterparts. More specifically, it is striking how the conventional publishers have come to distinguish themselves from such disingenuous business practices and to emphasise the high quality of their *products*. Moreover, the big commercial publishing giants appear to take pleasure in positioning themselves as the guardians of rigorous quality checks and scientific standards in related disputes about Open Access.¹¹⁸

Quite remarkably, this line of argument was also firmly established in Sander Dekker’s letter to the Dutch parliament (OCW, 2014). Recall that the goals and measures announced in Dekker’s letter contained a strong focus on Big Deals with these publishers as the next obvious step for implementing the ambitious Dutch Open Access targets (see also chapter 7. *Zooming in on the micro-dynamics of the letter*). According to an interviewee who was involved in writing the letter, the reasoning for this choice was the following:

“So a couple of things were important, the idea of [a] thorough peer review system – I don’t know how thorough it is, but, you know, but there is a sound review system, [that] is one of the benefits of the traditional publishers, that they have that in place – that’s one. The other is that, so there [are] all these gold and green and other routes; the idea [is] that you do have access to the final published version, that was, and that’s, that was the idea behind [it], of course” [int_16:328-330].

With regard to particular publishing models for implementing Open Access, there appeared to be two main messages that firmly stuck in the minds of many academic researchers and science policy-makers. First, that publications in existing Open Access journals had less value than in subscription-based journals – thus leading to a general stigmatisation of genuine Open Access publishers and initiatives. Second, that choosing to publish in Open Access always implies author-side publishing fees (i.e. payment of APCs) – thus disregarding all other models and alternatives. It comes as no surprise then that Dekker’s expressed preference turned out to be “a system of hybrid journals in which institutions pay to have papers published open access in subscription-

118 For instance, publishing one’s work in Open Access journals at Springer Nature is promoted to potential authors as a choice that “makes your work freely available online for everyone, immediately upon publication, and our high-level peer-review and production processes guarantee the quality and reliability of the work” [retrieved from <https://www.springeropen.com> on 30/10/2021]. Similarly, those choosing to publish in Open Access with Elsevier are reassured by these compelling arguments: “We offer a wide range of open access options to fit the diverse needs of institutions, funders, academic societies and researchers around the world. We listen to our customers and collaborate with them to achieve their research goals. We do so without ever compromising on the things they trust us for: quality, rigorous peer review and research integrity” [retrieved from <https://www.elsevier.com/open-access> on 30/10/2021].

based journals”, until these publishers have fully switched “to the golden road to open access” (OCW, 2014, n.p.). This proposed trajectory of flipping established journals from subscriptions to Open Access was presented as a solution that would unite the best parts of both worlds: a high level of prestige and a high degree of openness at the same time. As a result, this rationale has become one of the main selling points used to promote pre-arranged Open Access offers among authors of such hybrid journals, including in subsequent VSNU-led negotiations.

To sum up, in the previous two sections I have shed light on the substantial discrepancies between what many academic researchers appeared to cherish in their impetus for advancing science, as opposed to what was being valued (and evaluated) when it came to their actual research and publishing practices. As Ulrike Felt and colleagues have pointed out, “there is an apparent tension between what is valued as a public good and how research is evaluated”, when taking the science-society perspective (Felt et al., 2013, p. 20). Therefore, they suggested that “an essential step” be taken “to reconnect the process of valuing and evaluating” and to provide time and space for more reflexivity in institutional and structural arrangements (ibid., p. 30).

However, there were several examples among interviewees in this case study where the highly upheld values and actual evaluations in their research practices *did not* stand in conflict. That is, such researchers perceived no dilemma that would force them to choose between two mutually exclusive options and could reportedly pursue both goals simultaneously. Exploring such “anomalies” in the context of an otherwise stark area of tension as well as other ambivalent positions will be at the core of the following section.

9.3.3 It takes (more than) two to tango: “We will just adapt” and other ambivalences

In one of the interview questions directed at researchers in the Netherlands, they were asked what implications an intended full-scale switch to Open Access, as announced in state secretary Dekker’s letter (OCW, 2014), would have for themselves or for other researchers in their field (see *Questionnaire for interviews with Open Access “users”* in Appendix). This issue was directly related to one of the main research questions in this thesis, namely, how does Open Access affect actual publication practices. Its purpose was to learn more about possible reactions and adaptation strategies among researchers at different career stages, and within different institutions and research fields. More particularly, how does Open Access publishing fit with their scholarly practices and epistemic cultures? What factors play a role? Who benefits, who is disadvantaged, and who remains agnostic and under which circumstances?

The answers to this question comprised a broad variety of responses, ranging from eagerly embracing, to ignoring, or even to actively resisting new publishing rules and regulations. Although the vast majority of interviewed researchers perceived a serious tension or even an instant conflict between such Open Access goals and the research evaluation practices that they were exposed to, a smaller group of interviewees appeared to be agnostic about such worries. For these scholars, as in the case of one researcher in genetics, the new requirement to publish their work only in Open Access by some date in the near future was actually perceived as “already a

sort of thing of the past” [int_r16:15].

Alternatively, for a professor of quantum physics, the agreement between VSNU and Elsevier (as well as those with other major publishing companies), apparently slipped his attention. Although he could vaguely remember an email received from his university administration about some novel agreements, this seemed not to affect his publication practices in any way. When the announcement was explained as containing an offer for eligible authors to publish their articles in Open Access without the regular payment of an APC, this interviewee was still not convinced about the extra benefits that this procedure could bring. In his own words:

“But I think, even if I would have [been] given the option, I think, in our field, it’s, I think, no one will look for this open access thing, right, so everybody would look for the paper on arXiv¹¹⁹ if you have no access to the journal, so I would not be sure that I would do all the hassle, to get published open access [laughing]” [int_r10:7].

Upon being probed further, with attention drawn to the preference for the final published version of a journal article in the Dutch Open Access strategy, as compared to the manuscripts uploaded to arXiv and similar online repositories, this researcher remained indifferent to such arguments. In this regard, he responded:

“I understand, open access, yeah, that they want to get the public access to whatever you do, but I think that *the final layout of the paper should not matter* in that respect, right, so why would that cost? So in that sense, I would not be in favour of this model [int_r10:11, emphasis added].

That is, for those researchers who appeared to have already arrived in the future state of academic publishing, as it was envisioned in Dekker’s letter, making use of the ensuing agreements on Open Access between VSNU and big publishers was *too much of a hassle*, with no additional advantages. Because they had already been publishing their work in Open Access since long before, although under different colour-labels and formats than preferred by science policy-makers, there was no obvious reason why a political preference for the Gold Open Access model with author-side publishing fees should be adopted, even if offered for free for the authors themselves. For these interviewees, as it turns out, the “ambitious” targets declared in the national strategy appeared to completely pass by their own everyday realities – and so they did not expect them to have any implications for their own work whatsoever.

At the same time, other interviewed researchers responded to this question with a number of anticipated effects for their own publishing practices. Despite all the criticisms raised towards the plans of the Dutch government, and especially the route chosen via the commercial Open Access publishing model (see section 9.1.3 *The devil is in the details*), most of the interviewees took a pragmatic stance. Adapting one’s own behaviour to new requirements – wittingly or unwittingly –

119 As described on its homepage, “arXiv is a free distribution service and an open-access archive for 1,957,732 scholarly articles in the fields of physics, mathematics, computer science, quantitative biology, quantitative finance, statistics, electrical engineering and systems science, and economics”. In 2021, it was celebrating its 30th anniversary. See <https://arxiv.org/> [last checked on 12/10/2021].

seemed to be a logical consequence if one was exposed to structural pressures in the system. As explained by one assistant professor in psychology:

“When there [are] regulations, something will drip down and then we will have to do things in a certain way, for example, as the past years, you know, that the impact factors were incredibly important and outputs, numbers, were incredibly important, and it’s starting to drift away from that, because you are not getting paid as an institution anymore on a number of publications but in other ways, and, yeah, when there is another way of getting paid then you move in that direction, so, yeah, things will probably change and *we will adapt*” [int_r4:46-47, emphasis added].

This view was shared by another interviewee, who also happened to be a researcher in psychology. At the end of the day, as she argued, researchers would adapt their own behaviour accordingly:

“If that is going to be the default situation, *I will just do it*, and there will be a new rank order within those journals probably, so it’s just a shift in [the] way of working; that’s fine, but now it’s neither meat nor fish, so, yeah, people stick with the old system [int_r18:64-67, emphasis added].

But what would such a new rank order look like? A detailed view of some strategies on how to cope with the novel publishing regime can offer some hints. For instance, circumventing the new “pay-to-say” barriers might lead to researchers publishing their own work in only those journals that they are entitled to choose from without having to pay an Open Access publication fee. On the other hand, if only limited budgets are available to spend on publishing, one might decide to go for a *cheaper* journal, i.e. with a lower APC:

“I think that I would also start to choose journals by how much the publication fee [is], so in this case, I went about it fairly pragmatically, in that you can find a ranking of journals within the field of cardiology, and then I just started from the highest-ranked journal that was somewhat likely to take the manuscript, so that’s where I submitted first, and then I sort of got rejected at several points ... so you then, you just go down, but if, let’s say, the International Journal of Cardiology was particularly expensive, then I wouldn’t mind [going] a bit further down” [int_r9:9-11].

At the same time, having a chance to *get into* one of the top-ranked or renowned journals could also mean that (almost) any price would be acceptable:

“Let’s say, if you can get into top 5 journals, let’s say, Nature, Science and this sort of thing, then you [would] probably pay whatever it takes, because that’s just, that really makes a difference; now once you start to get down ... this strata of the hierarchy, there are many options that are about equally good, so then you don’t have to go for any one particular, but the top, there are only a few picks” [int_r9:13-14].

While within the long tail of middle range journals there seem to be many comparable alternative choices to avoid exorbitant publishing charges, the consideration of which journal to select also presents a further variable when deciding whether and how much of a publishing fee is worth

paying for a particular journal. Namely, this consists of its perceived prestige in the scientific community and the associated advantages that one could reasonably expect it to yield for one's career.

Furthermore, the need to balance such benefits and the level of requested APCs becomes even more tangible when the different funds to be used to cover the publishing fees are considered. Although several interviewees claimed that they would happily agree to use departmental or university budgets to pay for the APCs for their articles, the cost-benefit assessment would turn up quickly if they were asked to pay the same fee from their own pockets. As reflected by one data scientist:

"Well, first of all, I guess, I won't do it with my personal budget, because *I think it wouldn't pay off*, if I pay 3,000 euro from my personal budget ... and the second thing would be, well, I can use the same budget for other stuff, so even if my boss says 'oh, there is some budget left, if you want to use it', then maybe I prefer to use the same budget to visit a conference rather than doing this open access [publishing]" [int_r15:13-16, emphasis added].

When playing out a hypothetical APC-based publishing regime to its extreme, according to this interviewee, there may be even more grave implications that could force researchers to adjust their familiar publishing habits. In his own words:

"Maybe at some point, we will start to get these limitations from, for example, libraries, that researchers are not allowed to publish more than three papers a year, because there is not enough budget to pay for that ... it might be a good thing sometimes for quality, in some fields, like if you have just three chances a year, where you might start to be more careful on what to publish; on the other side, sometimes that can be a bit [like] imposing limitations on your communication channel, so you cannot really communicate what you were doing as soon as possible, because *you're afraid that you are losing your tokens*" [int_r15:32-34, emphasis added].

This concern was shared by another interviewed researcher, who was worried about an emergent regulatory dystopia. From his perspective, there was a chance for a certain form of institutional censorship that might emerge and get enacted through limitations on publishing funds:

"Sooner or later, someone is gonna say 'you know, the funding is limited, so we shouldn't publish that much', which is good for [a] variety of reasons, but not for this reason, and then somebody is gonna say 'yeah, so these and these disciplines can publish this much, but these disciplines can publish [only] this and this much' and then, there is going to be a hierarchy of journals and then it becomes a form of censorship" [int_r7:46].

That is, a strict APC-based Open Access-only mandate, if imposed on publishing practices, could also result in preventing certain research groups from publishing their work or even silencing whole research disciplines. While this trajectory, arguably, would only come about in the worst case scenario, it still appeared to be a realistic scenario, particularly to researchers in the area of the

social sciences and humanities. Consider this quote from an interview with a law professor:

“Well, given that we have so few open access journals, it would be almost impossible to do that [to publish in open access only]. So in fact, first we should have more open access journals before I would be able to do that, so I could hardly publish anything at the moment, if I would have to do that open access. The only thing that we could do to circumvent that is just illegally publish all our articles also on a variety of websites, which everyone connects with. Which is not, I think, the official meaning of [an] open access policy” [int_r23:36-37].

Ultimately, the interviewed researchers had so far experienced only very limited, if any, encounters with the ambitions of the Dutch government to switch the academic publishing landscape to a fully Open Access system by 2024 (or, as it was later antedated, to 2020). Since this national strategy was still perceived as a political declaration, but not a guaranteed outcome, most interviewees discussed the range of potential consequences thereof in terms of *what-if scenarios*. Therefore, the considerations reported here were rather treated as hypothetical implications that could take place in some distant future, yet that would not necessarily have immediate effects on their own publishing practices. However, what appeared to many researchers as a mere theoretical possibility at the time of the interviews (conducted mostly in spring 2017), could quickly materialise at some later time.¹²⁰

Finally, Elsevier interviewees argued for the potential disadvantages of the proposed new Open Access publishing mode for highly productive authors, as compared to some favourable features of the existing journal subscription system. Currently, it was claimed, such researchers could publish as many scientific articles themselves as they wished as under an “all you can eat” (or, in this case, “produce”) publishing approach, without worrying about financial consequences. In contrast, under the new APC-based Open Access regime, they would be requested to pay for a publishing fee each time, and, in most cases, would need to comply with some institutional or national sponsorship programmes, or look for alternative funding options. Even with sufficient funds, this situation was said to be likely to incur additional administrative burdens, and so to indirectly punish such authors for their own productivity. *Going Dutch*, or splitting the bill for each publication, thus promised little advantage to this group either.

As a response to such possible yet highly undesirable implications, many of the interviewed researchers have come to propose an alternative model for the academic publishing of the future.

120 The maximum amounts of Open Access articles under pilot agreements with major scientific publishers in the Netherlands (and elsewhere) have been repeatedly exhausted before the end of each year. Accordingly, when such limitations are enacted, this means that even eligible authors can no longer opt in. Instead, if they still wish to publish their article in Open Access in the chosen journal, they either have to wait until the next calendar year or acquire additional funding to cover the APC fee (or, alternatively, withdraw their submission and search for a different publishing venue and/or model). For an example, see this warning to authors about the almost exhausted quota in the agreement with Springer: “Note that this agreement covers a maximum of 2,080 publication per year. For 2021, it is expected that the maximum will be reached in October. Please contact the library open access specialist for questions about the quorum and/or alternative ways to make your publication open access.” See <https://www.openaccess.nl/en/publisherdeal/springer-nature-2018-2021> [last checked on 16/10/2021].

Contrary to the pathway chosen in the Dutch national Open Access transition strategy, a system was sketched out with no commercial APC-based logic at its heart. The ideals and idealisations of openness that were reflected in such outlines, as well as their own limitations and boundaries, will be the main focus of the next area of tension in this chapter.

9.4 Key tension area IV: Ideals of openness vs. drawing boundaries

In this fourth and final area of tension, I address the discrepancies and conflicting aims between an ideal Open Access publishing system, as envisioned by many of the interviewees, and the blunt realities and limitations when translating such idea(l)s into concrete use cases and everyday research practices. While on the previous pages, many interviewed researchers were trying to figure out how to navigate the new requirements, some possible adverse effects of an APC-based Open Access publishing system came to the fore. Numerous respondents, when reflecting on the then tense state of affairs, suggested starting non-commercial scholar-led publishing initiatives as a better model and a counter alternative to the current mainstream landscape dominated by big publishers.

Here, claims to take over the control of publishing processes from commercial companies and give it back to academia, as well as to re-align the whole system with internal science principles, were eagerly promoted. However, in this ideal (or rather idealised) world, some sharp boundaries were drawn. These include an instructive example of Open Peer Review (OPR), where even the most enthusiastic supporters of greater openness in scientific research positioned themselves against this novel approach when putting author manuscripts to the test. Instead, interviewees argued for a necessary differentiation between various elements of scholarly publishing workflows: some that should be “opened”, and some that should not. Finally, I will introduce some further analytical categories such as “home-made exclusions” and showcase scholars in double-disadvantaged situations, where the most vulnerable participants in the academic publishing system (e.g., external PhD students, unfunded researchers, or those in smaller disciplines) were (to be) hit by exclusionary participation rules once again.

9.4.1 Ideals and idealisations of openness: Back to the future and other nostalgia

After having explored some of the possible implications of and strategies for coping with a strict Open Access-only mandate in the near future, the interviewees were asked about their opinion on how scholarly communication would develop in the future. To prompt some further reflections, interviewees were encouraged to suggest some desirable characteristics of academic publishing in an ideal world. What quickly became apparent in the responses to this question was that a shift to a comprehensive Open Access system was seen as a somewhat natural or even inevitable development at some point in the future. In this respect, switching the dominant modus operandi from a “closed” to an “open” publishing model was often considered to be something that was “unavoidable, the only question is how much time it might take” [int_r1:77]. Or, from the perspective of a researcher in genetics, this transformation was already fast approaching: “getting access to journals or papers, or particularly, when you take this green route, well, I suppose that at

least in our field, nearly everything will be open access one way or the other in one or two years” [int_r16:33].

However, while such an evolutionary trajectory was often described as “just a matter of time; it’s going to happen” [int_r21:32], the interviewees imagined it taking a different shape than the commercial Open Access route with author-side publishing fees, as was being actively pursued in the VSNU-led negotiations with major scientific publishers. Instead, the APC-based models were strongly criticised for putting an additional strain on institutional or departmental budgets and dividing researchers globally according to their purchasing power. Especially when colleagues and peers in other countries were considered, this publishing route was commonly perceived as elitist and exclusive. As emphasised by this professor of religious studies:

“I mean, Italians have no money for this, not to mention African or Asian colleagues, so it all amounts to [a situation], where maybe a few more people will get access to our publications ... but at the same time, I think, this is a huge drawback, that less people will be able to afford to publish [their own work]” [int_r3:6].

In this respect, Open Access publishing fees were even compared with a novel luxury good that would be reserved for the rich and affluent only. According to another interviewee, switching one’s own publications to Open Access via APCs would then become a sign of whether “you can afford it, when you have funding or money, you know, it’s a sign of being wealthy or being funded, or being sponsored even” [int_r4:7]. But such large-scale agreements with major publishing companies, as the one between VSNU and Elsevier, for which eligible authors were exempted from paying the publishing fees, were seen as problematic. Because, “if I would want to ask my international colleagues [to publish with me], they cannot make use of that, so it’s only [valid] for the Netherlands” [int_r18:44].

Moreover, as this interviewee pointed out, pursuing such nationwide deals, with APCs required from everyone else, stands in conflict with modern-day research practices and environments. In her words, this approach would pose serious additional challenges from a journal editor’s perspective as well:

“So if I’m an editor of an open access journal, and I would want to use my international network to get a nice topic, to edit it, then, I mean, I, perhaps, would only ask one other co-author from the Netherlands, but for the rest, it’s all international ... so it’s kind of a social dilemma. It’s good that the Netherlands does it, but it only helps us locally; it doesn’t help us in international projects” [int_r18:45].

In light of such possible drawbacks and their adverse implications, a call for a certain *disciplinary solidarity* with researchers in other countries and world regions started to emerge. As explained by one ecologist, given that “for many parts of the world, there is hardly any ecological information available”, data and publications “especially [from] Russia and large parts of Africa” were urgently needed to address the blind spots in current research on such topics as climate change or extinction of species [int_r11:78]. However, “if you just have a system where the author pays for open access costs, then it would mean that these authors in the developing countries, they would

have a large disadvantage, so that's not, in the end, not the way to go" [int_r11:90]. Therefore, as this interviewee continued, "it would be nice to see that we here, with our privileges and money, [if] we could use the time and energy to think about a good system that works, and once we figured it out, we can implement that there, so that they do not have to make the same mistakes" [int_r11:88]. Putting social justice at the core of the academic publishing of the future, instead of exacerbating financial inequalities, was also dear to this PhD student: "in the end, into the future, that is the only way to go: to create a sustainable way of sharing information that is inclusive and not privileged" [int_r5:56].

That is, "because ecology doesn't end with national boundaries" [int_r11:88], as is also the case with many other research fields and disciplines, numerous researchers advocated for seeing "the scientific community as a global community – and we should take care of each other" [int_r11:91]. To move forward, according to the same interviewee, "we should take more initiative there, to steer the whole science system towards more effective and more fair science" [int_r11:93]. At the same time, there seemed to be a consensus among the interviewed researchers that such a transformation could not be enforced by science policy-makers or other extra-academic actors alone. Instead, it was repeatedly argued that in order to alter the ways in which research results were published and disseminated, this change had to take place from within academia itself.

In light of the widespread criticism on the shortcomings of current publishing practices, along with the powerful position of a few profit-oriented publishing giants and the recent blend of political interests in this field, several interviewees made a passionate plea for supporting old or starting new *scholar-led publishing* initiatives. As suggested by a professor of computational linguistics:

"As researchers, we don't have political power – we have some, but only via very strict representation, via the VSNU or KNAW, or NWO. Now, I think, what we can do, is just *vote with our feet* as they say, so just go and organise our own ways of publication business, because that's what it's all about" [int_r14:46, emphasis added].

Beyond gaining back control from commercial publishers, re-organising publishing activities into the hands of academia itself was seen as offering some further advantages. On the one hand, it was said that moving away from profit-driven logics, with a steadily growing number of scientific journals and their revenues, would help the publishing system return to the inner principles and virtues of academic work and better align with the ethos of science. On the other hand, building a knowledge infrastructure designed for researchers' own needs was also expected to allow them to make better use of the ample technological and intellectual possibilities that were available within the community. As reported by this senior researcher in computational linguistics, some early instances of self-organised academic journals in several branches of computer science can serve as a compelling source of inspiration. Recalling the situation in the early 2000s, even before the term "open access" was coined, he explained that scholars in the fields of machine learning and artificial intelligence had "strongly turned to construct[ing] their own journals", instead of contributing their work to "expensive journals, let's say, [at] Elsevier [and] Springer" [int_r14:17]. What happened next, turned out to be an example of a successful academic-led publishing initiative:

“Within five years or so, these journals were running as good or better than the original journals, with impact numbers that were at least as high or higher, because, well, people moved; they saw this new [journal], and so the new journals were able to, let’s say, hook into newer developments faster and be more on top of things” [int_r14:19].

For some more recent proof of academics’ ability to run their own journals and publishing venues, another interviewee mentioned a project launched by colleagues in the neighbouring statistics department. There, “they already have these types of [platforms] that are via non-profit and completely open access” and which allow other scientists to leave a response on an article and interact with its authors more directly [int_r4:22]. So “that’s further down the road already and that is, of course, more [of an] open access” than with comparable publications in conventional journals [int_r4:22x].

Alternatively, collaborative efforts together with some established publishers were also highlighted. In anthropology, as reported by another researcher, one of the main disciplinary journals changed its business model from subscription to full Open Access in a cooperation between a prestigious North American university press and a group of university libraries. Because of the solid financial backing, authors were not charged any fees for publication. While this was seen as a “much better model” [int_r7:25] for publishing scholarship from anthropology and related fields, the interviewee further acknowledged that such a switch was only possible because “they are, of course, very privileged and rich” [int_r7:15]. Moreover, for similar attempts to succeed, they could be expected to bear some additional challenges and opportunities. Most importantly, arranging a close collaboration between many actors and relying on a cohesive publishing culture were described as both a prerequisite that was necessary for, and a fruitful outcome of, such standalone Open Access transitions (ibid.).

Attending to the history of such inspirational examples, and the benefits that purposeful, functional collaborations can yield, as an interviewee suggested, can explain why one or another research field “was already doing this easy production of its own output” [int_r14:29]. For such practices to spread further, interviewed researchers expressed the hope that “a trend towards putting trust in scientists” would return again [int_r10:37] and that the whole science publishing system would eventually get “purified” [int_r12:50] in order to separate the wheat from the chaff. As observed by a professor of quantum physics, “I know, this [is] already a little bit going again in the right direction; maybe Sander Dekker still has to find [it] out [laughing]” [int_r10:37x].

In general, most interviewees appeared to be very optimistic when it came to the overall prospects and the development trajectory in academic publishing. In the words of this PhD student:

“I think in the future, most papers will be open access. I think, they [research funders] [will] reach a consensus on who funds what and how to go about the open access stuff” [int_r20:47].

This ecologist, too, was convinced “that everybody is going to do that” [int_r21:25] in the foreseeable future, with regard to opening access to research findings and other elements more broadly. Therefore, as she repeatedly suggested, those who already recognised it could build their

careers as open scientists and take advantage of this timely trend: “you can be one of the first people to actually properly do this – it’s, I think, also kind of cool, you know [laughing]” [int_r21:25x]. As commented by the previous interviewee, “it would be nice to have a global open access”, which would be anticipated to drive scientific endeavours and “motivate more research, actually, it would drive academic research onwards” [int_r20:51]. A bright outlook on the future state of academic publishing, and Open Access in particular, was also shared by this interviewed researcher:

“Of course, the fact that open access is now ideologically totally accepted means that, of course, there will be room for a lot of other experiments as well, so I mean, there is no cause for pessimism per se” [int_r7:40].

In the end, the momentum and the attention given to this topic was expected to lead to more diversity in, and experimentation with, various publishing models. Or, as one interviewee put it: “this field will develop, this movement will develop more, *there will be more choices and better choices*” [int_r22:65, emphasis added]. With regard to scholar-led Open Access journals more specifically, which often operated on a different basis than charging authors for APCs, numerous interviewees appeared to feel cautiously optimistic about these as well. From the perspective of one post-doctoral researcher, “I think, it’s just the question of a bit more experience and time investment, but eventually, people are going to figure it out” [int_r21:30]. This view was echoed by another interviewee in the field of digital humanities: “in my experience, some of them [scholar-led Open Access journals] have to still further develop themselves ... they will mature, they will become more professional, but it just takes some time” [int_r22:37].

And what about the fate of “closed”, subscription-based journals? Here, a law professor seemed to go even one step further. In her opinion:

“For the rest [of closed journals and their publishers], yeah, they don’t really have a future, I think, but it might be more of a hope than [an] actual prediction, I’m not sure, and it would probably take a lot of time” [int_r23:61].

As can be seen from this quote, the road to a more inclusive and comprehensive Open Access future, as promising and advantageous as it might look, was still seen as being fraught with difficulties. Novel Open Access journals were anticipated to require considerable time and effort in order to mature and proliferate, as was frequently stressed by many of the interviewed researchers. Indeed, there were also more obstacles to overcome along the way towards a better publishing system. According to the previous interviewee, “as long as only small journals do that, nothing will change” [int_r23:62]. Instead, “if some prestigious journals take the first step and their boards of editors say ‘well, we are going to do this alone’ ... that would be a lot of help” [int_r23:62x]. In this respect, transforming established journals from subscriptions to toll-free access and leading by example was often suggested as a necessary – yet hitherto largely missing – part in order to stir up the whole academic publishing landscape.

Beyond a certain signalling effect associated with prominent journals, if these were to choose to

switch to Open Access, another interviewee expected that such a move would help build up a critical mass and reach a tipping point. In his words: “if we have something like 50 journals doing this, it will start rolling all [by] itself like an avalanche” [int_r1:42]. Speaking from his own experience with transferring a renowned specialist journal from a major subscription-based publisher to a different venue, this professor reaffirmed his confidence in this choice as a viable alternative. From his perspective, to implement the same Open Access publishing model on a larger scale and to spread it further across all research fields would require having “a couple of people of good will in each discipline, and they fight and they work hard, and slowly and surely, you know, it will shift” [int_r1:40].

Yet the lack of courage on the side of the senior leadership sitting on editorial boards of scholarly journals, who appeared unwilling or unable to break new ground, was not the sole reason that was deemed responsible for the inertia in academia. Obviously, “those editors [would need to] put their reputation on the line” to help flip the journals to Open Access [int_r1:54]. At the same time, they would have to “make sure that the authors don’t have to pay, because that will guarantee the continuity of the journal” [int_r1:54x]. Therefore, according to this interviewee, in order to ensure a degree of certainty for those who were ready to take the risks and invest their skills and energy into the Open Access transition, the politics had to follow and provide sufficient funding for such demanding endeavours.

However, while “not asking for the moon” [int_r1:54x], several interviewees complained about the lack of political and financial support for many of the promising academic-led publishing initiatives that were already in place. According to the same professor, scaling up cost-effective grassroots alternatives would enable the ambitious Open Access goals to be reached for only a fraction of the price when compared to ongoing negotiations with commercial scientific publishing giants. As reported by this interviewee:

“So how to get there, I mean, my idea is very simple: ... we have a realistic model, it’s proven a realistic model, to get to open access by 2020, only you have to start now, and, of course, we need something like 100 million euros to do that, and we are not going to get it; we already tried, I mean, in Brussels, but because, of course, the answer in Brussels is ‘uuh, you know, but we would destroy an industry’, yeah, sure, you would destroy an industry, so what!?” [laughing] [int_r1:33-34].

The perceived sympathy for the publishing industry on the side of politicians, with many of its headquarters located in the capitals and major cities of EU’s member states, was also criticised by another researcher. In his words: “that’s actually, to go back to Sander Dekker, instead of, you know, doing these very interesting negotiations with big multi-national companies, what he should be really putting a lot of money in, is this kind of transformative stuff” [int_r2:41]. Instead, such progressive ideas were suspected to be securely kept within the limits of controllability, assuming intense lobbying efforts from major publishing companies, as well as a mix of intertwined interests between publishers and science policy-makers. As this interviewee continued:

“There is all this funding for projects and for journals, to become open access, and they are trying it a little, but *it is being kept small* precisely because they know, of course, that if they [research funders] would do that [on a] large scale, they would be in a total war with the publishing industry” [int_r2:54, emphasis added].

While ensuring that university researchers’ “hands are tied in terms of time and energy” [int_r2:61] was seen as an effective measure to stifle the substantial development of alternative scholarly communication venues, this sociologist moved on to point out some of the broader structurally oppressing features in academic life and work. Here, another notable twist in the complicated state of affairs of such publishing initiatives came to the fore:

“What it drives on, is the Saturdays and the Sundays ... and people making the decision ... to sacrifice – that’s my term for it – to sacrifice their time and their effort, to sacrifice, you know, time spent at home, time spent in doing care work, you know, doing [other things] and so, basically – ... let me be very like Marxist now – the people that are paying for the really interesting developments [in academia] ... are actually the girlfriends and wives of all the very important and reputable professors that have free time to invest in this kind of stuff, while their girlfriends and their wives take care of their house and the children” [int_r2:59].

For this variety of reasons, including the exploitation of unpaid labour, the aim to transition academic journals (back) to the hands of the scientific community, along with switching their publishing models to Open Access, was determined to be in “an embryonic [state] still” [int_r1:24]. Yet, given that countless researchers were already deeply involved in running scholarly journals – from writing and reviewing manuscripts, to composing and overseeing editorial boards, to growing a journal’s esteem and readership – it was further argued that there was enough expertise to arrange all the processes of academic publishing without the publishing houses. Time and again, calls were expressed for getting rid of commercial publishers altogether: “in fact, we do not really need the publishers as some kind of intermediary between the academics and their audience” [int_r23:51].

The view that “it should, relatively easily, be possible to do it without them” [int_r23:49] was quite widespread among the interviewed researchers. As commented by this linguistics professor:

“What we as researchers need, is [to] have our results out as quickly as we can, but with all the proper things that we can put [on] ourselves, so like [the peer review], and there is basically nothing that stands in the way, there is basically no party that we need in the middle” [int_r14:47].

Similarly, “because, again, we are writing the [publishing] manuals; it’s not like the big publishers are writing these, I mean, they are making money”, another researcher suggested moving forward “by cutting out the middlemen” [int_r1:47]. At the same time, some interviewees warned against painting all publishers with the same brush and acknowledged the valuable roles and contributions of many publishing houses, especially in the humanities. Or, as in the words of an aspiring PhD candidate: “let’s not burn down the bridges behind us, yes, we still will publish in

those [traditional] journals, but if there was a bit of freedom, to still do it there and make them open access, ... that makes some kind of win-win situation at this [transition] stage" [int_r22:41].

When asked to share his opinion about an ideal academic publishing system, this interviewee continued:

"In an ideal situation, I hope that these traditional journals will change their business model and, in some way or the other, open up their databases – open up everything, *so that we [do] not lose them*" [int_r22:58, emphasis added].

As illustrated by this quote, there were several interviewees who argued for giving proper credit to the services provided by professional publishers and ensuring their legitimate place under the sun in a post-transition Open Access world. This expressed wish to keep them in the loop led to some interviewees also specifying more precisely how some of the roles and responsibilities in the current and future academic publishing landscape should be re-balanced. It seems the main issue here could ultimately be boiled down to the highly asymmetric power relations to the advantage of a few big publishing companies. Following several decades of expansion and consolidation of their market positions towards an oligopoly-like situation, a handful of enterprises have grown to dominate the publishing choices in most research domains – and, consequently, often dictate their own rules and, especially, pricing terms (for more details see also chapter 5. *Framing the story*).

Such hegemonic structures were seen as a fault that needs to be corrected even by those interviewed researchers who were the most explicitly supportive of conventional publishers. Here, calls to "take a lot of power away from these three big publishers" [int_r11:27] and to "put [publishing] into more open platforms, into more transparent ways" [int_r22:56] were articulated clearly time and again. In a way, *downgrading* publishing houses (back) to mere service providers – instead of crucial gatekeepers in assuring the quality and reliability of scholarly communications, as they liked to present themselves – emerged as a suggested course of action in several interviews. In this regard, one respondent suggested striving for a "healthy co-dependence" with scholars and publishers on an equal footing [int_r5:64] that would cater to mutual needs and interests. This was in contrast to the current unsatisfying state of affairs, where individual researchers and academic institutions were put at the mercy of capitalist multi-nationals when attempting to bring about any improvements.

Related to this, it was argued on numerous occasions that publishers should reorient themselves to facilitating scholarly publishing workflows or otherwise enhancing scientific information, instead of impeding its circulation. As commented by one interviewee, "if I would take their perspective, what service should they be focusing on to still have an added value?" [int_13:53]. Or, in the words of this interviewee:

"Then, when these companies [would] start making money out of adding value to information, they [would] start seeing that they need the information, to actually be sustainable themselves, they have to feed back part of their revenue, and that is how you can get a sustainable model" [int_r5:63].

In the end, it appears that the struggle in this tension area was not so much about destroying the commercial publishing industry as such, but rather about figuring out what “added value” it should or could provide, and how to compensate these companies for such services with an adequate price. Moreover, a transparent and modular pricing structure that was responsive to the needs of authors or whole research fields was also desirable in the eyes of multiple researchers. To illustrate this with an example from one professor:

“You [could] go to the different publishers and say ‘well, for me, typesetting is very [important], that’s why I will pay a little bit more for typesetting, if it’s better’, [in] other fields, say ‘you know, we do all the typesetting ourselves, look, we put [in] the motor ourselves, just give us the carrosserie ... we will do this ourselves’, [because] you want to have a market, you don’t want this ridiculous system” [int_r1:1].

However, maybe because such a scenario hadn’t seemed very likely so far, particularly in light of the goals and measures pursued in the VSNU-led negotiations, a certain disillusionment was setting in. As commented by one PhD student, who was convinced of the many benefits of publishing one’s work in Open Access and the need for reforms in the various parts of the current modus operandi, a large-scale switch from the status quo actually appeared as a utopian idea that was almost impossible to achieve. In his words: “it would be nice to have a global open access, you know, I think, it would drive, it would motivate more research actually, it would drive academic research onwards, [but] well, I mean, what’s the possibility of that?” [int_r20:51].

For this close observer and vocal proponent of Open Access, the routes taken by recent national initiatives seemed to have contributed little to a substantial change: “I think, these deals [with major scientific publishers] should have focused also on fully open access [journals], because then, that’s a totally different game we are playing” [int_r5:51]. Moreover, to his further disappointment, even when they are given the opportunity to publish their work in Open Access at no extra charge “some of the researchers actually literally don’t seem to care” [int_r5:50]. This experience was shared by another early-career researcher, who reportedly pointed out this possibility to his colleagues:

“So when I found out, for example, the deal with the Springer, I made this email for the whole department, explaining [to] them about this deal and [what] it implicated for us ... [but] that is, it [is] really important for me, so I, in this email to the department, I listed like all the journals we often publish in, and to show them that it is really worth something, but then, I didn’t get any response from anyone” [int_r11:54-55].

In summary, although a system of academic-led publication venues with no APCs for their authors emerged as a better, fairer, cheaper, more innovative and – on top of that – viable alternative to the policy-backed agreements with the major publishing companies, chances of its advent were still rated as vanishingly low. What is more, this realisation was not the only sobering thought in relation to the ideals and idealisations of Open Access and more openness in academic publishing processes in general. Here, a number of further frustrations and paradoxes, along with the highly ambivalent positions of numerous interviewees, were still to be discovered. We shall now turn to these issues in the following section.

9.4.2 Drawing boundaries: Limits of the “open” world

One of the common threads that ran through the interviews in this case study was that the current functioning of scholarly publishing was judged to be deficient and unsustainable. The growing numbers of scientific publications, a phenomenon associated with the publish-or-perish culture and increasingly fierce competition for promising jobs in academia, were said to have produced an array of alarming repercussions. Not only were academic libraries constantly struggling to ramp up their acquisition budgets along with an expansion of publishers’ journal portfolios and rising subscription fees, but researchers also reported difficulties with keeping track of important findings in their fields and struggled to sort out relevant developments in an ocean of journal issues, conference calls, and other communications over various media-enabled channels.

What is more, the task of finding suitable referees who were able and willing to fulfil the voluntary duty of peer review for their communities, and would agree to review *yet another* publication, was becoming ever more irksome. In the words of one journal editor who was experiencing such difficulties: “we cannot keep the current system, no, this is becoming ridiculous” [int_r17:82]. At the same time, this routinised procedure for assessing the quality of individual contributions, before they are released to the broader public eye, was seen as the cornerstone of the scholarly communication workflows that need to be preserved by all means. In short, the whole publishing system appeared to be rapidly overheating, although there remained a lack of consensus or definite answers on what exactly needed to be improved, let alone how.

Related to such concerns, both researchers and publishers alike provided examples of testing and trying various innovations to the publishing process. Here, a particularly intriguing and controversial discussion emerged around the merits and perils of the peer-review mechanism. Some interviewees argued that bringing in more openness and transparency to the traditionally “blind” or anonymised handling of review reports would facilitate more justice and egalitarianism in this “still always a very black-boxed [system of] who gets accepted in certain journals and who does not” [int_r18:31]. As commented by one young professor with an extensive publishing record:

“People are experimenting with new journals, new types of peer review, for example, there, in the journal like Science, they do nowadays, that the referees are able to see and comment on the other referee reports before [they are] sent to the author, and I find that a very good step, so that it helps to sort out already, if people are mistaken by excellence in their opinion” [int_r10:26].

Similarly, another interviewee was delighted with a new generation of Open Access journals that seemed to bring a breath of fresh air into the entrenched rituals of scholarly publishing. In his words:

“You also have these whole new open access types [of] journals, that have good quality and a good track record, and have a good peer review, and with those new models, where you, where the whole peer review process is open, for example, you can see everything, and you’ve got the first edition published online, and only after it’s accepted by [the] editor, you can publish it. I think these are good developments” [int_r11:27].

Yet on the other side of the debate, propositions to disclose the review reports and/or the reviewers' names along with the manuscript or the final published article have also sparked strong opposing reactions. All the more surprisingly, even those interviewees who were otherwise very enthusiastic about more openness in scholarly communications switched over to a markedly cautionary mood when it came to adjusting the peer review process. As discussed in related literature, there exists a broad spectrum of practices that can be summarised under the umbrella term of "Open Peer Review (OPR)" – such as making authors' or reviewers' identities known to each other, allowing a reciprocal discussion between them, and including review reports alongside the final publication (Ross-Hellauer, 2017).¹²¹ However, a huge number of interviewed researchers rejected the idea of engaging with such experiments and expressed their preference for the continuation of the well-trodden, proven method.

To begin with the arguments used by OPR proponents, some researchers argued that bringing more light into this heavily concealed part of the scholarly communication cycle would correspond better with the ethos of science and help improve the overall research and review processes. From the perspective of one PhD candidate:

"For me, open is, I guess, that science should be transparent and it should be reproducible, yeah, those are, for me, two important features, and for me, open science would mean that you can see how the process is developed, also for peer review, I don't think [that] everything should be anonymous; we can be very open" [int_r11:31].

This view was strongly supported by those interviewees who already actively practiced OPR methods when refereeing other peers' work. As reported by one post-doctoral ecologist:

"So I do open peer review, when I review an article, now I always sign myself ... if I do it properly and nicely, if you see what I mean, if you know that they are going to know who you are, even if I have some negative, well, not negative, some comments that you should change something or cite something, then you are consequently going to be like better, describe it, I think that *my review is just better if I know that I am signing it* [laughing] ... I write it in a more constructive way; I pay more attention to really properly write it" [int_r21:35-37, emphasis added].

Although signing one's review report does not mean that it will automatically be made public, and still depends on a given journal's policy, as experienced by this interviewee, it seemed to be worthwhile if only for intrinsically motivating the reviewers to put in more effort when preparing their commentaries. Being able to trace the changes made since the first submitted manuscript, for example, in case these versions and the final article were made available together with the reviews, was highlighted as another advantage when choosing this approach. Because then, "you can see from the beginning, what was the paper like, and [the] comments, and how does it change according to these comments from [the] reviewer" [int_r21:36]. Moreover, the requirements of a particular journal with regard to the writing style or the use of theoretical concepts could be

121 See also a summary on OPR's main types and traits by the Public Library of Science (PLOS), available at <https://plos.org/resource/open-peer-review/> [last checked on 13/11/2021].

illuminated in this way. As anticipated by another interviewee, publishing an article's reviews would help others to "get some idea [about] what happened during [the] review process ... about, at least, how many times it was reviewed, was it reviewed, let's say, more on the English language [level] – sometimes you get comments on your language – so okay, was it on the content or really on the concept. I think, that could be also interesting to see how it develops" [int_r19:77-78].

At the same time, there were opposing views among the interviewees on whether publishing review reports along with a journal article would offer any added value. For instance, one professor doubted "if that's useful, because there, that process is also very strategic, the whole review process, so I don't know if you will learn eventually a lot from it" [int_r18:58x]. Instead of being informative to the readers of that article, as she argued, it might just create an "information overload" [int_r18:60]. As for the reasons for her scepticism, this interviewee compared the peer review procedure with "a political debate: you never see somebody's true colour in a review process ... it's just like a tango dance, it's very political, you don't see, you know, people lie and omit information there, as well" [int_r18:58x-59].

What is striking in such comments, is that these appear to have little to do with the manuscript in question and its evolution through different stages, which was the main motivating factor for the proponents of OPR. Instead, its opponents focused mainly on the social and political issues surrounding this quality assurance mechanism. That is, while "this kind of functionality" [int_r2:39] was already offered by various journal publishers and online repositories, its possible uses and abuses seemed to carry a huge potential for conflict. As commented by another associate professor: "I can imagine that it can create, well, the negative sides of the internet as well, so controlling if someone has a thing with the scientist, or with a concept, or something else, and then, trolling could occur" [int_r4:23]. Yet what was deemed an even more serious threat were the fears of negative consequences in light of political power plays in academia. As this interviewee continued, if asked to do a review with some form of OPR, "I would rather not, *because I know who I am dealing with*" [int_r4:25, emphasis added]. In this respect, the risk of retaliation or adverse effects for one's career and social relations with peers were repeatedly put forward as convincing reasons to not reveal one's own identity, especially when being critical in one's peer review report.

Paradoxically, then, the protective shield of anonymity, as it was practised in traditional forms of single- or double-blind peer review, was seen as conducive to openness when voicing criticism. This researcher in psychology put it to the point:

"I would rather not know who the nasty comments come from, and in the other way around, when I review an article, I also want to do that from the perspective of anonymity ... *because then, I think, I can be more open and more fair* in the whole review process" [int_r4:13-14, emphasis added].

Her position of "really also enjoy[ing] the fact that it's, that I do not know who the reviewers are" [int_r4:12] was broadly shared among other interviewees. For instance, another medical researcher pointed to the special risks for scientists doing research on sensitive or controversial topics. Because others might disapprove of it or if "they have some kind of animosity towards you, then

they would, you know, I don't know, would you wanna know who it is or not? You know what I mean" [int_r8:24]. An interviewed associate professor in acoustics also appeared to feel more comfortable with the traditional setup of compiling and receiving anonymised peer reviews. In his own words:

"One of the things that is good with the system of publishing is that I don't know who my reviewers are, and actually, I prefer that it remains, stays like that, because some people, yeah, you collaborate with or you meet at conferences, and sometimes you have to make hard decisions" [int_r12:21-22].

This interviewee proceeded to give a personal example where he considered the double-blind peer review procedure, i.e. removing author details from the manuscript, and not only the reviewers' names, to have a beneficial effect on the equitable treatment of submitting authors. As he explained:

"I have [to give] a review now of my former 'promotor', of my like [PhD supervisor], and the paper is, yeah, he didn't put much effort; I know he could do a better job, and I haven't completed the review, and I thought like this, if I wouldn't know the authors, I would have rejected [it]. I would have recommended to reject the paper, but now I'm considering [saying] 'okay, I want you to improve it here', because I know he can do that, and I know he can make a good paper, and it's a good subject, so then, I'm already biased. Actually for me, it would have been better if that would [have been] double-blind" [int_r12:23].

Therefore, as illustrated by this case, too much openness in peer review was sometimes considered a double-edged sword where "making reviews openly available, like for the social aspects, or the community [aspects], might not be a good thing, but it might be a good thing for the quality [of the work]" – although still, preferably, with anonymised reviewers' names [int_r12:24]. At the same time, the potential for partiality and conflicts of interest appeared to be debatable, at least to some extent. Referring to another recent example, where someone had rejected a request to review an article of their friend because of a perceived friendship bias, an interviewee replied: "I said 'why, you shouldn't have, and what are friends for if not to be critical, too, about [one's work], so you can make them, it's good for their health, you make them better scientists – why run away?'" [int_r8:27].

Moreover, beyond their potential to damage close relationships, such delicate situations were said to give rise to certain dilemmas or even to be highly risky, especially when reviewing highly esteemed colleagues' work. Not only could disclosing critical reviewers' names expose them to hostile reactions, but one's own career prospects might also begin to totter for those who dared to rebel against an established authority. Even for this interviewee, who could arguably look back on a stellar career already, this concern appeared to play a huge role:

"That is a very interesting thing and that is something, I, that's a very, very interesting question, I must say, my concern, a little bit, is, that if you would, if you would make all those reviewers' comments public, is that, if I were to review a paper and they would tell me 'we are going to publish the review as well, and would you be willing to

list your name, yes or no', I would be much more careful in front of raising my criticism, particularly, if it's a hot shot, you know, who is submitting his work, and I were to review that paper, then I would be extremely careful, so for me, I don't know" [int_r16:35-36].

As can be seen from this quote, opening up the peer review system was expected to entail considerable risks for researchers' well-being and standing in their respective communities, or even to lead to a certain degree of self-censorship instead of encouraging justified criticism. This concern appeared to be all the more pronounced in potential encounters between career-minded junior researchers and their senior counterparts. If someone in the former group were to become a critical reviewer of someone in the latter, this could quickly lead to a perilous situation – a perspective shared by this OPR practitioner:

"That's a bit of a problem [laughing], or especially, if you are like a *young researcher* and then there is a *big researcher*, and then you sign yourself under [the] review, and it's negative, then it might be not really the best thing for you to do" [int_r21:38, emphasis added].

At the same time, this rationale didn't seem to convince another proponent of more openness and transparency in refereeing colleagues' work. With regard to the distinct reluctance of some researchers to disclose their identity in this process, as expressed by other interviewees, this associate professor replied:

"I think, I understand those reasons, and to me, this would particularly hold if the author of a manuscript would know the referee, or when the name would be known to them, then you come in a kind of end, who is in the power of who, you know, these issues, but if this is all published into the open, then, I think, yeah, you have to use objective and rational arguments, and this will force people to stay out of political issues, I think" [int_r10:31].

However, as pointed out by another interviewed researcher, relying on the supposedly all-too-sober reactions of one's peers and being able to set emotions aside seemed to be unlikely. As he noticed, "people are people; we are fallible, we would care about those things as much as we shouldn't care about those things" [int_r8:25]. But the previous interviewee also acknowledged that "there is always a big discussion [on] what is the most optimal situation" for organising the peer review process [int_r10:25]. To address this thorny question, several interviewees shared further ideas for potential solutions and reported their own experiences with testing new tools and approaches. Among these, there were researchers who have registered on special websites such as Publons¹²² and used them as a certain personal "logbook" [int_r8:26] to document their review

122 According to its Wikipedia entry, "Publons is a commercial website that provides a free service for academics to track, verify, and showcase their peer review and editorial contributions for academic journals"; it was launched in 2012 and bought by Clarivate Analytics in 2017. Among other features, Publons offers a "Reviewer Recognition Service" that "integrates into the reviewer workflow so academics can track and verify every review and editorial contribution on-the-fly". Retrieved from <https://en.wikipedia.org/wiki/Publons> and <https://publons.com/benefits/publishers/reviewer->

activities and other roles with scientific journals.

As commented by one researcher at a large technical university who had created an online profile in this registry as well, it helped to make such typically unacknowledged parts of academic labour more visible and to receive credit for this work. In his own words, showcasing one's scholarly contributions with such initiatives could be "a good way to show that you are active as a reviewer; I appreciate that, because reviewers are not seen" [int_r12:19]. Moreover, other interviewed researchers have presented demands towards major scientific publishers such as "to start paying reviewers" for this mostly voluntary service [int_r17:81]. In addition, some more radical ideas where "you could go the most extreme way and, you know, completely forget about peer review and then do post review, post peer review like PubPeer¹²³ or something like that" [int_r16:38] were also put forward.

For one, there appeared to be many experiments in this realm, each attempting to figure out the exact modalities on how to improve the scholarly communication system in general, and its peer-review elements in particular. Here, one could find some strong supporters of full transparency who hoped that "in the very end, a model that I would like a lot, is that the referee reports are published and not anonymous" [int_r10:27]. However, the majority of interviewed researchers remained rather reserved on this point.

The crux of the debate appeared to be whether to make merely *the review reports* available in the public, or to include *the names of the referees* as well. It was notable that even the most sceptical interviewees were supportive of the idea of sharing their review reports on the homepage of a journal or in other ways. Yet the fears of negative personal consequences, and so the main reason for associated reservations, emerged solely from propositions to disclose the names of the referees *together* with their review reports. To conclude, although the currently predominant peer review system was heavily criticised for its perceived biases and imperfections, most interviewees strongly opposed any attempts to open up this carefully guarded academic publishing black-box. In the words of one interviewee, as an author, usually, "[you] never know how that works, in the end" [int_r19:24]. Yet this was not the only remarkable paradox in the case study at hand.

Beyond wishes to exempt peer review from efforts to make scholarly communication more open, there was another area where reservations were expressed. This can be summarised as the potentially undesirable effects of free access to specialist literature with no qualified oversight. This issue was raised especially with regard to lay people and patients who might try to engage with medical research or sensitive political topics on their own account. To illustrate this point, one researcher-practitioner in cardiology explained:

[recognition](#) on 19/11/2021.

123 According to its Wikipedia entry, "PubPeer is a website that allows users to discuss and review scientific research after publication, i.e. post-publication peer review. ... Contrary to most platforms, it allows anonymous post-publication commenting, a controversial feature which is the main factor for its success", retrieved from <https://en.wikipedia.org/wiki/PubPeer> on 19/11/2021. See also PubPeer's own list of frequently asked questions at <https://pubpeer.com/static/faq> [last checked on 12/11/2021].

“As a good, as a proper, let’s say, [an] idealistic scientist, you would be honest about mortalities in studies, or failures in experiments, and things like that, and yeah, some people might be, maybe, too light-hearted to understand or to accept that, which is fine, because we all have, as humans, again, our own sensitivities” [int_r8:37].

But in interactions between patients and healthcare practitioners, according to this interviewee, communicating openly about such delicate issues “might also create a fear within a patient about certain treatments” [int_r8:37x]. Eventually, fuelling such discussions through unrestricted access to scientific articles could make the patients “more resistant or maybe [encourage them to] run away or go somewhere else, seek different therapies that, maybe, might not work” [int_r8:37x]. Therefore, as this interviewed researcher concluded, “so that might complicate things, but they have the right to know” [int_r8:40].

Such a divided viewpoint was echoed by another researcher at a university of applied sciences, who argued that “certain knowledge is more sensitive; you don’t want people to use it, except for the people in your small community that can actually, can get behind that paywall” [int_r13:59]. In her own words:

“The fact that the more open you make things, the more open you make it to commentary from non-experts, *which, kind of, muddles the waters*, you could say, because they interpret your words differently, they don’t know the concepts you are using, or they interpret it in their way, and they use it in their way” [int_r13:27, emphasis added].

As stressed by these interviewees, broadening access to scholarly publications to the general public beyond well-trained specialist audiences could increase the risk of misinterpretation or misuse of research results. Although the information was said to be “quite harmless in itself, but it’s what someone takes out of it and does with it” [int_r8:45], limiting access to it was seen as a matter of prudence, at least in certain situations or for touchy research problems. These could include not only health-related issues, but also, for example, instructions from experiments on how to build explosive materials with household remedies. In the same vein, one researcher warned that “you can actually do a lot of harm if you misuse the knowledge” [int_r13:60].

That is, similarly to the often feared negative consequences of practising open peer review, too much openness was sometimes deemed *to do more harm than good*, including with regard to sharing scientific knowledge in general. In this respect, plans to shift the whole academic publishing system to Open Access and so to release publications from thousands of scholarly journals into free circulation online seemed to make some interviewed researchers feel rather unsettled. As commented by this cardiologist, “because then, if you have open access, it’s vulnerable for misinterpretation, or people believing lies, which is misinterpretation, and the duty is, of course, in the author’s hands, in writing it right” [int_r8:48]. What is more, as argued by the same interviewee, “if the door is open tomorrow and the flood of publications go out, then what happens [is], you would also have to sift through the bad articles and find that needle in the haystack” [int_r8:53]. Therefore, the projection of this imagined result evoked calls for justified

restrictions, or at least some cautionary measures, to limit the dissemination and application of the claims made and the scientific knowledge encoded in such publications.

Without problematising science–society relations or science communication issues more generally, such considerations implied that access to scholarly publications was better limited to professional researchers. As members of institutions that subscribed to scientific journals, this population was seen as rather well-structured and trusted, and equipped with prior knowledge of how to deal with and interpret the research findings and limitations reported therein. Ironically then, some interviewees suggested that the financial and technical barriers imposed by conventional journals, such as the paywalls of subscription-based models, were helpful for sorting out their typical versus occasional readers. The perceived feeling of control over the use of their publications, if somewhat illusory, appeared to be more comforting with an eye to communicating solely with peers via scholarly journals. It was feared that freeing such publications from subscribers-only mode to Open Access, in contrast, would amplify the scope of uncontrolled interactions with various societal groups beyond this neatly defined and regulated sphere of influence.

However, lay and professional users of scientific knowledge were not distinguished in the Dutch Open Access transition plans (OCW, 2014) when boundaries were drawn *within* the envisioned comprehensive Open Access world. But this supposedly more open academic publishing infrastructure entailed further examples of infrastructural “anomalies” (Bowker & Star, 2000), where some interviewees appeared not to fit the underlying definitions of proper scientists and thus were left behind in novel Open Access arrangements with major publishers. Such “home-made” exclusions, as well as some other notable blind spots, will be at the core of the final section of this key area of tensions between the ideals and idealisations of openness and their sharp restrictions as experienced by several less-privileged interviewed researchers.

9.4.3 Enacting closed-ness: On “home-made” exclusions and other blind spots

In the introduction to this chapter, I presented my conceptual-methodological approach in this part of the case study and the rationale for taking a closer look at infrastructural *anomalies* and moments of *breakdown*. In terms of the overall theoretical framework, recall that I view the intervention into academic publishing infrastructure by Dutch science policy-makers and VSNU negotiators as an occasion of re-infrastructuring and an attempt to re-orient it towards new logics and directions (Grisot & Vassilakopoulou, 2017). “When re-infrastructuring takes place”, according to Grisot and Vassilakopoulou, such design initiatives “have to rework well-established connections[,] ensuring a smooth transition to a novel envisioned configuration” (ibid., p. 11). Anomalies and breakdowns point exactly to the instances where and when such transitions do not occur smoothly and so expose their implicit rules and underlying logics.

While I conceptualise the low uptake level of the “Pilot Gold Open Access” agreement between VSNU and Elsevier for 2016–2018 as a moment of breakdown, focusing on anomalies in my empirical materials helps to sharpen our sensitivity to and further elicit the partially obscured features and invisibilities of this infrastructural arrangement. This is because actors who find

themselves in odd or anomalous situations “are forced to develop a particular reflexivity for survival”, either because they are marginalised by existing classification schemes or for simultaneously being “part of multiple classification schemes that do not properly map onto each other” (Kaltenbrunner, 2015b, p. 121; following Bowker & Star, 2000). According to Kaltenbrunner, “maneuvering such anomalous situations requires actors to ‘juggle’ their different memberships, and to find workarounds to infrastructural arrangements geared to exclude them” (ibid.). Therefore, as Kaltenbrunner continues, attending to such activities might be viewed as a particularly promising way to help “defamiliarise” infrastructure from the perspective of the studied actors (ibid.).

When applied to the empirical case at hand, a group of actors whose experiences yielded the most illuminating insights in this respect were the users or, rather, non-users of this pilot Open Access agreement. Recall that I have analysed the resulting contract with a prepaid amount of APCs for eligible researchers through the lens of “a technical object” (Akrich, 1992; see 8.3 *De-scripting the VSNU-Elsevier deal*). However, despite its merits, this approach could be easily criticised as one that puts too much emphasis on the producers or designers of a technology or, in this case, a technical object. To counteract such imbalances, Sally Wyatt (2003) argues for introducing users’ perspectives into technology studies and taking them seriously as relevant actors and co-developers of technologies and of socio-technical change. Paraphrasing Oudshoorn and Pinch (2003, the same volume), Wyatt (2003, p. 69) states:

“Users are not simply passive recipients of technology; they are active and important actors in shaping and negotiating meanings of technology, which is significant both for understanding design processes and the relationship between the identities of technologies and their users. Users have been neglected for too long”.

At the same time, users are by no means a homogeneous actor group. Building on her study on the construction of users and non-users of the internet in academic and policy discourses, Wyatt (2003) has instructively demonstrated how a more fine-grained and analytically sensitive categorisation of non-use can be built. She suggested distinguishing between various types of former or actual (non-)users of a technology by taking into account such aspects as their passive and active behaviour, voluntary and involuntary choices, or resisting a technological system as a whole as compared to only some parts of it. As a result, Wyatt and colleagues outlined the following preliminary taxonomy for describing various types of non-users of a technology (Wyatt et al., 2002, cited in Wyatt, 2003, p. 76):

- ◆ “resisters” – people who have never used a certain technology because they do not want to;
- ◆ “rejecters” – those who have stopped using a technology voluntarily, because they find it boring or expensive or because they have adequate alternatives; followed by
- ◆ the “excluded” ones – those who have never used that technology because they cannot get access to it for a variety of social or technical reasons; and
- ◆ the ones who have stopped using a technology involuntarily and, thus, effectively been “expelled” from using it either because of cost or loss of institutional access.

As this categorisation tells us, users and non-users of a given technology and their relations to it can be productively explored at least in two dimensions (and a combination between them). That is, whether they have *never* used a technology or alternatively *no longer* do so, as well as if they find themselves in such a situation *voluntarily* or *not*. For the purpose of logical completeness, this differentiation could be further extended by taking *not-yet-users*, additional spatio-temporal dimensions, or any other significant aspects and criteria into account.

Taking inspiration from this work, and particularly from Wyatt’s appeal that “non-users also matter” (2003, p. 67), I have compiled a tabular matrix view of users and non-users of the Open Access agreement between VSNU and Elsevier (see *Table 1*). Here, I propose to distinguish its potential and actual beneficiaries by considering the usage status and voluntariness of their choices:

	Usage	
Voluntariness	Voluntary users	Voluntary non-users
	Involuntary users	Involuntary non-users

Table 1: Categorisation of users and non-users of the “Pilot Gold Open Access” agreement between VSNU and Elsevier for 2016–2018 (following Wyatt, 2003)

Among interviewed researchers for this case study, there are empirical examples matching each of these conceptual categories, if with a markedly varying rate. To illustrate, I will start by describing the distribution of users. Since one of my sampling methods for identifying potential interviewees consisted of contacting corresponding authors of journal articles published under this agreement (see also sub-chapter 2.2 *Materials and methods*), a considerable share of respondents – unsurprisingly – can be classified as “voluntary users” thereof. At the same time, some of these interviewees could be also assigned to the other category as partially “involuntary users”. In other words, those who have chosen to opt in and switch their publications from a subscription-based model to Open Access not out of conviction but simply in order to comply with institutional or funding policies. In addition, the group of voluntary and involuntary users of the pilot between VSNU and Elsevier, which comprise roughly one third of the interviewees in my sample, would increase in size if *would-be-users* were taken into account, i.e. other eligible researchers at Dutch universities and medical hospitals who intended to make use of this publishing arrangement in the future, but didn’t happen to do so yet.

Having said this, a closer look at the non-users appears to be even more revealing about the complex state of affairs, where it is not always easy to sort individual interviewees into separate categories. To follow up on the above-mentioned example, it is arguably more appropriate to see the would-be or not-yet users of the optionally offered Open Access deal in Elsevier’s journals as

“voluntary non-users”. Regardless of the reasons behind their non-use – either because they chose a different publisher or preferred other routes to publish and communicate about their work, for the time being – these researchers were in principle entitled to benefit from the APC-free offer arranged for them by VSNU. Similarly to *resisters* and *rejecters* identified by Wyatt (2003), interviewees in this category included cautious sceptics or even outspoken critics of the measures chosen by the Dutch government, who doubted the effectiveness of negotiations with major publishing companies and argued for the advantages of possible alternatives (see especially sub-chapter 9.2 on *Usefulness vs. uselessness of Open Access*).

Yet the fate of actors whose experiences were the least visible in the VSNU-Elsevier agreement on Open Access publishing, but were also the most telling for studying its particularities, could be summarised under the heading of “involuntary non-users”. In Wyatt’s (2003) terms, here one could find researchers who were *excluded* from this contractual arrangement between Dutch universities and one of the biggest scientific publishers from the very beginning, such as authors of academic publications at universities of applied sciences or other non-university institutes, as well as those who were *expelled* from using this privilege after losing their institutional access and formal affiliations. To illustrate this unenviable position, it is sufficient to slip into the shoes of one recently graduated PhD student. Coupled with the date of his doctoral thesis defense, the employment contract of this researcher had expired a few months prior to the interview. When asked about his occupation at that time, this interviewee explained that by “January [of that year], I had to finish a lot of projects that were still running, and actually, I’m still finishing those projects, writing some papers in the meantime, and searching for new work” [int_r11:4].

That is, this unsalaried academic work was performed in the shadow of one’s own “free time” while being between jobs. What is more, loss of a university affiliation also meant that this interviewee had become ineligible for the pilot Open Access agreement that was prepaid for Dutch researchers by VSNU. While keeping a guest account with his former employer (one of the KNAW-associated research institutes) provided some remedy for his getting access to scholarly literature, researchers with KNAW-only credentials were typically not covered by the large-scale Big Deals with Elsevier that were negotiated by library consortia. In the words of this interviewee:

“When my contract ended at the [institute], also my affiliation to [a university] stopped, so I don’t have access any more to [the university resources] ... so for me, at this point, I do not have access to Elsevier, and cannot publish with open access with Elsevier, so that’s, yeah, a strange situation in a way, because quite a lot of journals we publish [in are] Elsevier journals” [int_r11:17-19].

Ironically then, especially for someone specialising in one of the subjects under the umbrella of Top Sectors – i.e. research and development areas that were prioritised by the Dutch government and, reportedly, served as a way out from the stalled VSNU-Elsevier negotiations (see 8.2.2 *Getting into and out of a “deadlock”*) – this early-career researcher was now excluded from making use of the offer. Instead, in addition to other disadvantages that he was already experiencing at that time, he would have to pay the APC fee from his own pocket (while unsalaried), if he wished to switch his

next article to Open Access in one of the pre-selected journals (as well as in all other journal titles that were not applicable under this deal). However, such a potential implication prompted this interviewee to search for alternative options: “at the same time, I also, yeah, because they [Elsevier] were so difficult in the negotiations, and I know that for Wiley and Springer, we’ve got these deals, so I’m more motivated to find a journal with Springer and Wiley, to publish there, so, yeah, then, I’m actively looking at different journals” [int_r11:19].

Nevertheless, this was not the only example of *home-made exclusions* in the VSNU-Elsevier agreement on Open Access publishing in 2016–2018. Another group of interviewees that didn't fit the “scripts” of the designers of this agreement (Akrich, 1992), consisted of research associates and lecturers at universities of applied sciences (UAS). In this case, excepting staff at these types of institutions from the list of eligible beneficiaries appeared to have a systemic reason. As observed by one of the interviewees who was employed at a UAS:

“The distinction between the whole ‘Hoogeschole’ [higher education colleges, in Dutch] and the universities has been starting to fade, so ‘Hoogeschole’ didn’t use to be able to call themselves ‘universities’, now they call themselves sometimes ‘universities of applied sciences’, but it’s really changing, because they want to make it comparable to international standards ... so they are trying to bring more scientific knowledge, but also more research into the ‘Hoogeschole’ right now” [int_r13:2-5].

The impression that the nature and self-understanding of these higher education institutions were changing was also shared by some other interviewees. From their perspective, the UAS have been slowly but steadily shifting their focus from educating young professionals for regional labour markets and conducting practice-oriented research towards more academisation and internationalisation. Or, in other words, the UAS were becoming more similar to traditional, long-established universities. But for the time being, the distribution of teaching and research activities would differ dramatically. As stated by one interviewed researcher, “looking at the number of publications, of course, like [name] university of applied science, you would think about 90–95% is education [activities] and 5% is research, while at the universities, it’s the other way around” [int_r19:41].

As this researcher in the field of bioenergy modelling continued, “so the number is relatively low, also within our [group]; we are just a few people [doing research], and in part-time” [int_r19:41x]. At the same time, such active researchers at UAS were facing multiple challenges. As in the case of this interviewee, since UAS were not allowed to confer doctoral degrees themselves, PhD candidates among their staff (usually employed as lecturers) had to be formally enrolled in a graduate school with a PhD programme at one of the research universities. That is, during their doctoral research, even if emanating from and conducted as part of practice-oriented projects at their home institutions, such researchers inevitably have to lead a dual academic life and balance their different roles. Here, substantial dilemmas and sometimes squarely conflicting expectations were said to routinely arise, particularly with respect to publishing requirements.

To start with, although this represented only a minor population, one interviewee noted: “but in

the end, also at universities of applied sciences, we are supposed to do these PhD projects, so it means we have to publish" [int_r19:42]. Likewise, their colleagues who had already completed PhD degrees and were working regularly as lecturers were also expected to produce academic publications. According to another interviewee, who had moved to a UAS after her postdoctoral position and was exposed to such requirements, "the 'lectoren' [lecturers, in Dutch] are supposed to publish" as well [int_r13:6]. Yet switching their journal articles from subscriptions to Open Access, in the same way as was pre-arranged for their university-based peers, might become an almost insurmountable task. In the words of an interviewee, "so in fact, for me and my colleagues, *if we are on our own, we cannot use it; we cannot apply for this open access [offer]*" [int_r19:3, emphasis added]. That is, as in the case of the Open Access arrangement between VSNU and Elsevier, researchers at UAS or KNAW institutes with no additional university affiliations were typically excluded from such pilot agreements. Therefore, they would either fall through the cracks of such agreements or need to "fix" their identities first, in order to become eligible for the deal (Karasti et al., 2018).

Taken together, zooming in on the tensions and discrepancies experienced by the interviewees with such dual affiliations delivers a textbook example for studying infrastructural anomalies. As observed by Korn and colleagues (2019, p. 16): "when infrastructures malfunction or frustrate, people are able to improvise and find solutions using infrastructural features not envisaged by the designers when the infrastructure was built." For instance, to circumvent such novel APC-based barriers in the publishing workflows – at least for those authors who could rely on their secondary affiliations with traditional research universities – the most obvious solution has become to identify oneself as a member of a VSNU-represented research university. In this way, such researchers in the Netherlands could turn themselves from *involuntary non-users* to *voluntary users* of the pilot Open Access agreement between VSNU and Elsevier and could take advantage of the privileges reserved for this strictly defined category of researchers only.

However, although juggling different memberships and identities (Kaltenbrunner, 2015) emerged as a reliable workaround to navigate such exclusionary publishing arrangements, this natural response could arguably contribute to further discrimination of non-university researchers. That is, if authors appeared as university affiliates in bibliometric publication records, as in the case of several interviewees in this study, their research activities at UAS and in other non-university settings would be inadvertently concealed. And with an alleged lack of evidence for the increasing importance of research-related work beyond the 14 institutions assembled under the roof of VSNU, as often testified by counting their scientific publications, arguments for the potential demand to widen the participation rules in such agreements could become increasingly difficult to corroborate.

What is more, another obstacle for researchers working within practice-oriented projects, which were often conducted in partnership with commercial companies or local municipalities, was that "there is no funding for that [Open Access publishing fees]" [int_r19:6]. As reported by one lecturer and PhD candidate, "some of the funders may also pay for publishing and some of the projects incorporate the publishing [budgets], but these projects, they don't" [int_r19:5]. Therefore,

it appeared that the structurally least privileged members of scientific communities, who were already working at the margins of academia, would find themselves in a disadvantaged situation yet again. Not only did they have sparse chances to be included in large-scale pre-payment agreements with major publishers such as those conducted by VSNU, but institutional funds or other alternative sources to cover potential APCs for their scientific publications remained scarce as well.

Yet such poor funding conditions, as lamented by numerous interviewees, appeared to concern not just the limited possibilities of publishing fees being covered, but – even more gravely – of conducting such research projects in the first place. In the words of another interviewee who was working on renewable energy and waste management:

“The problem is, actually, in the Netherlands, it’s [by far] much easier to get funding for physics, chemistry, biology, nanotechnology, but when it comes to applied research, *the themes that really matter*, I mean, in terms, of social science or, you know, applied research, then it’s really much more difficult, which is something that a lot of researchers here still don’t understand, why is that the way” [int_r20:10, emphasis added].

The experiences that were recounted here by several researchers suggested a fundamental issue in the Dutch science funding system. From their point of view, it appeared to favour research in the so-called basic sciences over more practical applications of scientific knowledge. Against this backdrop, the eligibility criteria for making use of Open Access publishing agreements has strongly reflected such preferences and the high value ascribed to academic research as conducted mostly by professional researchers at established universities. Moreover, the reasonably well-intended attempts to overhaul the academic publishing system, as pursued by Dutch science policy-makers, can be viewed in a dramatically different light when considering the story of one PhD candidate. When asked about the decision to publish his recent Open Access article in one of Elsevier’s journals, this interviewee recounted:

“They had [an] interesting agreement or what, but, I mean, it didn’t really matter to me, but it felt a little bit weird, because they told me, that the university was going to fund the open access [publishing fee], but it’s weird, because, yeah, well, I mean, *when I tried to get funding from my university for my research – nobody cares*, but now, they want to fund my open access” [int_r20:24, emphasis added].

At the time of the interview, this researcher was awaiting his graduation ceremony after having completed his article-based PhD thesis at one of the technical universities in the Netherlands. The journal article in question, as he recounted, wasn’t originally planned to be published in Open Access. Instead, after receiving the notification of acceptance from the publisher, he was contacted by his university’s library and asked to fill in a special form in order to switch this article from the subscription model to Open Access. In this way, as an author who fulfilled the formal eligibility criteria and chose to publish his work in one of the applicable journals, he made this article retrospectively available in Open Access under the pilot agreement between VSNU and Elsevier.

Interestingly enough, this researcher was later notified that his publication was featured “among the most downloaded papers” in that journal [int_r20:27]. Yet the embitterment expressed in his previous quote was rooted in the fact that he hadn’t even been able to receive funding to conduct his doctoral project. That is, the Dutch science policy-making has prioritised the publishing venue of articles over the financial well-being of the researchers, who in many cases have to find alternative income streams or subsist on unemployment. In the words of this interviewee:

“I am external PhD candidate, in [the] sense that I am not getting funded, so, I mean, I am funding myself, it still is, in my case, I am not really tied to any group or association and stuff like that, I am just tied to [the] university for doing [my] PhD, as it goes, that [is] what it means actually” [int_r20:68].

While being in such position offered considerable freedoms, according to this interviewee, this pathway also entailed several roadblocks. Most importantly, he suggested that “for an external PhD student, it’s way much more difficult to actually to do [a] PhD than [for] a funded [one]” [int_r20:3]. Not only were self-funded external candidates burdened with additional administrative and financial strains, but they also received less support as compared to their fellow PhD students in well-structured graduate programmes. For these reasons, the dropout rates of such PhD candidates were also said to be “a big issue” [int_r20:4] for Dutch universities – and something that these institutions would actively try to avoid.

Yet the hurdles experienced by this interviewee on the way to his PhD degree also reveal quite bluntly that switching publications from the subscription mode to Open Access has largely become an end in itself. Although in official political declarations, various initiatives in the Netherlands and beyond have claimed to take up the cause of societal relevance and increasing the impact of scientific research on extra-academic publics, the resulting agreements with major publishing companies seemed to reflect, or even amplify, deeply-seated thought patterns and divisions in the existing science publishing system. On the one hand, the contracts signed with the publishers focused on the continuation of (business) relationships with a few multinational publishing giants and supporting academic researchers in their communication with peers in international scientific journals, as before. On the other hand, non-university researchers, unfunded PhD students, or those indeed engaging in less popular but societally highly relevant research topics were condemned to continue suffering from an unequal distribution of resources and less appreciation for their work. In this way, such already vulnerable and underprivileged researchers would often find themselves in double-disadvantaged situations as compared to their colleagues who remained on a well-trodden path for pursuing their academic careers.

In the end, the empirical examples cited above serve as an excellent analytical entry point for also bringing to light some of the blind spots in the envisioned Open Access transition. Since some of these interviewees didn’t precisely fit the image of an archetypical Dutch researcher, as reflected by the eligibility criteria for making use of VSNU-Elsevier’s pilot agreement on Open Access, their experiences yielded the most telling insights into the implicit rules and invisible boundaries enacted therein. Conceptually speaking, confrontations between projected users and real users in

this contractual agreement (Akrich, 1992) represented anomalies in the academic publishing infrastructure as it was designed by science policy-makers and negotiators at Dutch universities and major scientific publishers. In line with the idea of triangulating viewpoints, any stark discrepancies of this kind were thus crucial for capturing and illuminating those otherwise indiscernible or overlooked features in such infrastructural and contractual arrangements.

My analysis in this section delivers an important amendment to a popular narrative in Open Access advocacy materials, including those used by the OCW and VSNU. Namely, it is routinely claimed that making scientific publications from rich or research-intensive countries (often referred to as the “Global North”) available for free over the internet would substantially benefit researchers from poor or developing countries (the “Global South”; see Hollington et al., 2015) in their own research and development efforts. At the same time, this proposition is criticised for creating a one-way communication flow from the rich to the poor only. As described previously, if implemented by means of the APC model, this Open Access publishing regime would pose a new, even harsher barrier for researchers from the Global South who wish to publish their own work and participate in academic debates on a par with their peers in wealthier countries, mostly in the northern hemisphere. Yet what goes entirely unnoticed in such discussions is that under this scenario, a considerable population of unfunded or otherwise disadvantaged researchers would be left behind in the Global North as well. Figuratively speaking, they can be likened to the “poor” among the “rich” – as individuals or even whole institutions at the periphery of the science system, which were utterly ignored in such national agreements in the Netherlands and beyond.

Hence, distinguishing between the Global North and the Global South in such debates turns out to be a false dichotomy that neglects a wide spectrum and diversity of potential users and their personal circumstances both within and between the imagined boundaries of world regions. This further applies to researchers based in countries that can be considered *not rich enough* to afford paying for an APC, but also *not poor enough* to be automatically exempted from them, nor granted substantial discounts through waiver programmes that were initiated in order to alleviate stark income inequalities.¹²⁴ My own analytical categories, such as that of home-made exclusions help elucidate this point. However, these were not the only eye-opening findings that emerged from this analysis. The conceptualisations of users and non-users and their various potential roles vis-à-vis Open Access publishing technologies point to another set of illuminating observations. Here,

124 For instance, the publisher Taylor & Francis explains that “waivers or discounts to reduce article publishing charges (APCs) for open access articles are available to: corresponding authors with primary affiliations based in countries defined by the World Bank as Low-Income Economies, who can apply for a 100% APC waiver when they publish in a full open access journal”, or those based in countries defined as “Lower-Middle-Income Economies, who can apply for a 50% discount on the normal APC.” Retrieved from <https://authorservices.taylorandfrancis.com/publishing-open-access/requesting-an-apc-waiver/> on 09/12/2021. Whereas at Elsevier, its potential authors are informed that no discounts on APCs will be given by default: “If you genuinely can't afford the fees to get your article published open access, then individual waiver requests are considered on a case-by-case basis and may be granted in cases of genuine need. Priority for this waiver program is given to applications by authors from countries eligible for the Research4Life program.” Retrieved from https://service.elsevier.com/app/answers/detail/a_id/5973/supporthub/publishing/ on 09/12/2021.

users' engagement with technologies can range from being passive recipients to becoming active participants, and these categorisations also change over time. Taking a closer look at some further missing argumentative positions and discursive silences (Clarke, 2005) will be the main focus of the interim discussion that will round off this chapter.

9.5 Interim discussion: What if, what else, what for?

The preliminary taxonomy of non-users introduced by Wyatt (2003) and adapted further on the previous pages allowed me to elaborate a more differentiated perspective on the pilot Open Access agreement between VSNU and Elsevier. In particular, by turning my attention to the voluntary and involuntary aspects, this categorisation prompted me to take various nuances of (non-)use into account. What is more, Wyatt's examination of the discursive construction of users and non-users of the internet offers striking parallels with the empirical case study at hand. Beyond sensitising analysts and decision-makers to question their own assumptions, she urges us to consider the "non-users and former users seriously as relevant social groups – as actors who might influence the shape of the world" and actively participate in socio-technical developments (Wyatt, 2003, p. 78).

One of the popular assumptions in this regard concerns portraying the internet as "a universal medium" with (almost) unlimited benefits (Wyatt, 2003, p. 68). Similarly to the advantages of switching scientific journals from the subscription model to Open Access, as claimed in Sander Dekker's letter to the Dutch parliament (OCW, 2014), increasing access to the internet was eagerly promoted in many policy documents and at political summits around the 2000s (Wyatt, 2003, p. 68). As Wyatt observed:

"Everyone is clearly understood as a potential user of the Internet. Access to the technology is seen as necessarily desirable, and increasing access is the policy challenge to be met in order to realize the economic potential of the technology" (ibid.).

Building on the implicit acceptance of the virtues of technological progress, according to Wyatt, it was commonly presumed that "Internet 'haves' will be in a better socio-economic position than Internet 'have-nots'" (ibid.). In the same vein, having "unrestricted access to research results" was believed to "help disseminate knowledge, move science forward, promote innovation and solve the problems that society faces" (OCW, 2014, n.p.). That is, everyone was seen as a potential user and beneficiary of online access to scientific articles in academic journals, enabled by a ubiquitous use of the same internet technology. What is more, since most of research results reported there were typically funded with public money, demanding free accessibility of these publications for the broader public was stylised on the agendas of politicians like Sander Dekker as a moral act (see also 7.3.1 *The "problematization" or how to become indispensable*).

The use of such weighty arguments to justify the proposed Open Access transition in academic publishing, similarly to the provision of measures to facilitate internet access, might make it difficult if not impossible to argue against it or to scrutinise such supposedly well-meant initiatives. The main issue here is that we risk prematurely closing down an examination of the

variety of reasons behind the non-use of a technology or a technical object. As Wyatt continued:

“The use of information and communication technology (or any other technology) by individuals, organizations, and nations is taken as the norm, and non-use is perceived as a sign of a deficiency to be remedied or as a need to be fulfilled. The assumption is that access to technology is necessarily desirable, and the question to be addressed is how to increase access” (2003, p. 79).

In such policy discourses, as she stresses, “informed, voluntary rejection of technology is not mentioned” (ibid.). Instead, “investment in infrastructure, public education to overcome ignorance and fear, or training and standardization to improve ease of use” are undertaken (ibid.). When applied to this empirical case, neither informed nor voluntary rejectors of Open Access agreements with major scientific publishers were officially discussed, nor those who were involuntarily affected by exclusions inscribed therein. To the contrary, the measures proposed by the policy makers and representatives at Dutch universities focused solely on increasing the uptake of such deals among their eligible users. For the VSNU-Elsevier agreement in 2016–2018 as well, promotional campaigns were launched in order to raise awareness among researchers and potential authors at participating institutions, and to incentivise the full exploitation of available and prepaid Open Access publishing quotas.

Wyatt’s effort to challenge the widespread belief that the “non-use of technology always and necessarily involves inequality and deprivation” (Wyatt, 2003, p. 68) brings me to another analytical point. In her doctoral dissertation on the evolution of Open Access and the debates surrounding it, Jutta Haider (2008) has explored how constructing this concept and practice has been closely entangled with development discourse. Most notably, she demonstrated that the notion of “information poverty” characterised many activities in Library and Information Science (LIS) and was instrumental in advancing the case for Open Access in particular (Haider, 2008, p. 59; see also Haider & Bawden, 2006, 2007). Along with the category of “information poor”, as she remarks, the use of these concepts in LIS can be traced back to at least the 1960s (one could think, for instance, of offerings to increase information literacy). In essence, it can be said that the ideas of information poverty and being “information poor” are mostly invoked to characterise “distinct groups of individuals, organisations or even countries by their perceived lack of information” (Haider & Bawden, 2007, p. 535).

Much work that draws on the image of information poverty can be found in LIS literature. There, it can be situated within a vast array of similar debates on “information inequality”, the “information divide”, or the “information gap”, whereas with the emergence of the internet, other notions dealing with information inequalities like the “digital divide” or “universal access” came into play (Yu, 2006, cited in Haider & Bawden, 2007, p. 536). More recently, as Haider and Bawden (2007) argue, the concept of information poverty has “emerged as an integral element of the information society debates and frequently appears paired with references to [information and communication technologies] and allusions to the digital divides” (p. 534). For the social groups and actors that were typically addressed in such debates, the authors note:

“It has come to subsume a curious mix of groups, all of which are primarily thought of as afflicted by other forms of deprivation or deficiency, and which are constructed on the basis of this ‘lack’. Among them are rural people, the working class, the elderly, women, the unemployed, the handicapped, the homeless, ethnic minorities, and most prominently developing countries – either individually or imagined as a homogeneous category” (Haider & Bawden, 2007, p. 535).

Taking a closer look at the connections between Open Access and information poverty offers some further insights. Referring to Haider’s work, Ulrich Herb (2010, n.p.) states: “Open access is commonly described as an instrument which reduces information poverty. Countries suffering from information poverty are mostly identified by economic (poor countries) or technical (countries with a weak infrastructure) parameters”. In her own comment on the ways in which the idea of information poverty is employed, particularly in LIS, Haider notes that it “often underlies the discursive construction of systems of professional expertise and responsibility, frequently connected to education, training and raising of awareness” (Haider, 2008, p. 122). In this respect, a clear assertion of the librarian profession’s specialist status arguably puts it under a moral obligation to help the information-poor and “automatically assigns their salvation to the library and its staff” (Haider & Bawden, 2007, p. 550).

While I will zoom in on the role of librarians as *the maintainers* of the academic publishing infrastructure in the next chapter, I shall now turn to another important issue in this realm. Namely, the socio-economic aspects of (not) having access to scientific information and of the means of overcoming novel academic publishing barriers. As Haider and Bawden (2007, p. 548) write:

“Despite the way in which the pairing of information with poverty alludes to a commodified character of information, ‘information poverty’ is frequently advanced to voice criticism of the very commodified status information has in contemporary society. In particular, it is put forward to critique current developments in information property regimes which do not usually work in favour of minorities, the ‘developing world’, or other disadvantaged and marginalised groups.”

The new APC-based publishing mode, as envisioned in the Dutch government’s plans to switch academic journals from subscriptions to Open Access, has provoked severe (self-)critical responses from some interviewed researchers. Recalling arguments heard on the publishers’ side, one interviewee reflected on the drawbacks of the proposed scenario: “because they [Elsevier] also mean, that even though people in developing countries can read our research, they cannot publish themselves” [int_r17:101x]. That is, although moving away from the current information property regime, where access paywalls were conventionally imposed on the readers of academic journals, could arguably alleviate *information poverty* in lower-income world regions (Haider & Bawden, 2007), this transition was likely to create another set of problems. Namely, under a regime with author-side publishing fees, Open Access would become a new *luxury good* that is reserved for the rich and affluent only. As this researcher continued:

“So who can afford to publish, that becomes, that’s even more of a problematic thing, I

mean, now they, perhaps, cannot read our work, so then, it's really, so that's almost like a Western-imperialist move, more so than it currently is, and it currently is already to such an extent, this is now 'we can share our imperial wealthy knowledge', and then, but nobody can join" [laughing] [int_r17:101-102].

In the eyes of this professor in political science, this approach is "very similar to development aid, and it's imperial, colonial, we lend it [our scientific knowledge]" [int_r17:104]. At the same time, she was sympathetic to the arguments expressed by some VSNU negotiators that "Elsevier makes too much money and that is not justifiable ... they have like too big a margin of profit; it's unreasonable, that has to be reduced" through the proposed transition to Open Access [int_r17:107].

Interestingly enough, for one PhD student from an African country, the whole controversy on Open Access appeared to be rather outlandish. In his own words:

"I actually do not understand why this is a problem, because [in the] Western world, they have a lot of money, I mean, this should be a conversation that should be going on the aspects of the developing world, not in the West, I find it a little bit weird, well, like in the Netherlands, they have a lot of money, [they] fund a lot of research, *why it should be a problem to make that open access?* But now, when you are looking from the African perspective, well, you want to publish a paper, you want to make it open access, who is going to fund it. The government doesn't even fund social activities, they don't even fund education, so how are they going to fund the aspects of open access [ironic laughing]. So, I mean, from the West [perspective], I really don't understand why this is a problem" [int_r20:52-54, emphasis added].

According to this interviewee, given the huge wealth disparities in the world, switching all journal articles to Open Access in rich countries such as the Netherlands should be more than feasible when compared to other regions with little or no funding for this purpose. As he continued: "for me, to be honest, all my research is focused on Africa; my goal is to get as much information available and free to African people, I really don't care about the perspective of the West, because, I mean, they have access to information, they have money, they have all this stuff" [int_r20:56-58].

At the same time, the question "Who is going to pay for this?" emerged as a common thread and one of the smouldering concerns that permeated the interviews with researchers in the Netherlands. This worry was particularly noticeable in conversation with this assistant professor:

"And still, because who is then going to pay for that, the government, and, indirectly, universities are paying for it, I think, because there is less funding available for universities, so yeah, and still, the only ones making benefit out of this whole process, are the [publishing] companies" [int_r4:30].

Alternatively, some interviewees perceived the political intervention and the plans to achieve "100% Open Access" in just a few years as a perverse attempt at "a cost-cutting exercise" [int_r2:47] in the national research budget, while other researchers complained about being faced with "unbudgeted requests" from their staff who wished to publish their work in Open Access

[int_r14:57]. As commented by one head of a department who was reportedly confronted with inquiries “like ‘Hey, I have to pay 2,000 dollars or euros, or whatever, can we pay that?’”, he explained that “since this is a completely new question, you just see, well, a significant part of your budget being *eaten up* suddenly by this” [int_r14:56-58, emphasis added]. From a practical perspective, implying author-side publishing fees in the chosen strategy by the Dutch government and VSNU negotiators was often named as the main impediment on the way towards the projected Open Access future. In particular, and contrary to the official line by state secretary Dekker (OCW, 2014), additional financial support was seen as necessary to comply with the political goals. From the perspective of researchers, “it’s easy for them to say but” [int_r22:28] at the same time, “it’s a bit unfair if you ask something but don’t provide financial or technical support for it” [int_r21:18].

Another nagging question that appeared as a salient issue for many interviewed researchers can be summarised as “What are we doing this for?”. Perhaps related to the observation that publishing one’s articles in Open Access journals with APCs instead of subscriptions didn’t make it cheaper (yet), numerous interviewees started questioning the overall purpose of such initiatives. In the words of one researcher, “so what is good is that people from developing countries, for instance, have access, have more access as scientists, but beyond academia, there is another thing to be done” [int_r7:34]. The view that *more needs to be done* than simply making electronic versions of scientific articles freely available on the internet was also supported by this PhD student in ecology:

“I think, there should be a system where, I mean, we need to document our work in a standardised way, [with] peer-reviewed quality control, *but we also need to make sure that our knowledge is actually used*, and now there is not enough attention for that, because everyone only looks at your h-index in your publication list and the impact factor of the journal” [int_r11:83, emphasis added].

Therefore, such critical reflections on potential alternatives, which would be both cost-effective and fit for purpose, often led to propositions to set up new and/or stimulate already existing scholar-led academic publishing initiatives (see also 9.4.1 *Ideals and idealisations of openness*). Interestingly, the route chosen in state secretary Dekker’s letter to implement the Dutch Open Access transition via re-negotiating Big Deals with major scientific publishers also received no support from one of the high-level members of the negotiation team at VSNU. Contrary to the official argumentation line, this interviewee suggested:

“My ideal system, if you could solve the collective action problem, would be a green [open access] system, where we run it ourselves for 700 million [euros] per year, and even make it 20%, then it’s 1.4 billion that we spend instead of 7 billion now. We would have saved 5.6 billion, that we can put into research or teaching, or whatever public goal, and not spending on publishing, on the cost of publishing, and you can only get [that down] without the publishers, I’m convinced” [int_12:16-17].

Referring to a preliminary estimate of the total global spending on scientific journal subscriptions that was widely discussed at that time (Schimmer et al., 2015), this interviewee argued that only

700 million euros annually or equivalent to 10% of the global amount would be sufficient to “do a lot in facilitating digital open access publishing with that sum” [int_12:156]. As a president of one of the Dutch universities with an extensive research career, he stressed further: “if we would spend that on digital platforms and a little bit of organisational support for editing boards, editorial boards, peer review processes, etcetera, with 10%, you could probably do it” [int_12:151]. That is, once again, a fully Open Access publishing system with an ordinary quality assurance mechanism and the advantages of digital communications was believed to be viable at a much lower cost, in principle.

However, such a 700-million-euro idea, according to this interviewee, had little chance of being translated into practice. As he continued: “now, is it achievable? Yes, if you put 200 university presidents in one room for a week, so you can’t get out unless you have solved it for yourselves, who is willing to fund what sum of money, to build a model that works, and in reality, that is not going to happen” [int_12:172-173]. Instead, the prospects with the official route chosen by science policy-makers to increase the share of Open Access articles via Big Deals didn't promise to yield any substantial savings. In his own words:

“The gold standard assumes that we keep on doing this with the publishing houses; you will never get to 700 or 350 [million euros] on a global basis, at best, you can reduce it from 7 billion to 5 billion, at best, [but] it will never become really cheaper ... maybe just a 6 billion rather than 7, you can push it down a little bit. That’s my concern with the gold model, that you, we stay, we remain dependent on a commercially oriented organisation” [int_12:158-162].

These interview excerpts stand as a paramount example of the dilemmas that may arise in re-structuring cases. As I have already elaborated in more detail (see especially *8.1 Moving from translations to specific design concerns*), some of the biggest challenges in such attempts stem from the partially self-contradictory aims to preserve what is already in place and to introduce novelty at the same time (Grisot & Vassilakopoulou, 2017). Also in this case, over the last few decades, services provided by commercial publishing companies have become entrenched in academic publishing and related workflows, to the degree that it began to appear difficult to imagine many processes without them. In a way, academia got caught in a trap that it had set for itself and now felt unable to dispense with.

If one could look back to the future, according to this interviewee, such an intricate situation would be hard to imagine. And yet, the dependency on major publishing companies, particularly for internal research assessment decisions has reached an alarming level. From the viewpoint of this university president:

“You would never imagine the current system; the current system could only begin to develop because this digital environment did not exist. It was a paper world where you needed printing machines to produce your papers in a fashionable way, and you needed physical distribution across the globe, to have it, to ship it to your colleagues in Australia and in the US. That is something that universities could never do themselves, so they outsourced this to Elsevier and the whole lot, and *suddenly, we became completely*

dependent [on them] even for our own internal objectives of, for example, understanding the quality of our academics through ranking systems, whatever they mean” [int_12:119-125, emphasis added].

Therefore, as long as coming to terms with one Open Access publishing model appeared to be hypothetical scenario that was “unachievable on the global scale” [int_12:179], and so an emancipatory release from such a dependent relationship was highly unrealistic, this interviewee suggested that it was “probably better to bet on a number of horses” [int_12:208] and to try out multiple models and routes to Open Access.

Relating back to the theoretical backdrop in this section, I would like to return to the lessons learned from the studies of users and their relations to technologies. Even if the APC model underlying the Dutch Open Access transition strategy can be considered an already stable (or stabilised) publishing technology, it is important to think about “how users could actively modify stable technologies” (Mackay & Gillespie, 1992, cited in Oudshoorn & Pinch, 2003, p. 3-4). Moreover, it is also conceivable that the relatively stable roles of major publishing companies could, at some point, be destabilised. Indeed, this line of thinking could be further extended to a future state of affairs in which prominent research universities, which used to feature on top of influential rankings based on their publishing records, would lose their dominant positions in the global academic (publishing) landscape.

Because, as Oudshoorn and Pinch (2003) note, the scholarship in the field of user studies has come to acknowledge “the creative capacity of users to shape technological development in all phases of technological innovation” (p. 16). Particularly, it reminds us that “technologies must be culturally appropriated to become functional” (ibid., p. 12) and invites us “to transcend the artificial divide between design and use” (ibid., p. 16). There were ample examples in this case study where researchers in the Netherlands, either as authors of scholarly publications or otherwise (potential) users and non-users of the VSNU-Elsevier agreement on Open Access, have already taken up active roles in this socio-technical development. Starting with influencing the selection of applicable journals during the negotiations at VSNU, this has also ranged from (not) making use of the resulting agreements, towards finding ways to actively circumvent new APC barriers, to practising alternative Open Access models and ways to disseminate their research results, often out of frustration. At the same time, it is important to acknowledge that because of the diversity and heterogeneity in this group, “not all users will have the same position in relation to a specific technology. For some users, the room for maneuvering will be great; for others, it will be very slight” (Oudshoorn & Pinch, 2003, p. 6).

In the next and final empirical chapter of this thesis, I will turn to one particular group of actors that played a specific role in this case. Namely, representatives of academic libraries who were included as members of the VSNU negotiation teams and exposed to disruptive forces and conflicting logics in the quest for Open Access more than any other social group in this story. How their professional status and identities were re-negotiated in this process, as well as some strong inner conflicts that came to the fore, will be examined in chapter 10.

10. Inverting infrastructural relations: The invisible work of librarians as maintainers of the academic publishing infrastructure

This is the final chapter of the case study, where I synthesise the empirical materials from the VSNU-Elsevier negotiations with theoretical explanations. Here, I keep with the overall framing in terms of re-infrastructuring (Grisot & Vassilakopoulou, 2017), and further extend it with analytical insights from several conceptual lenses. This includes applying the situational maps approach and social worlds theory (Clarke, 2005; Clarke & Star, 2008) as well as some additional twists from a related body of literature on maintenance and repair studies. Methodologically, I proceed with carrying out an infrastructural inversion (Bowker, 1994; Star & Bowker, 2006) and examining the role of academic libraries and librarians as maintainers of the academic publishing infrastructure.

10.1 Some notes on performing an infrastructural inversion

In the previous chapter, I discussed key areas of tension that I have identified in my empirical materials. Throughout this process, I have paid particular attention to the reactions from researchers in the Netherlands to the VSNU-led negotiations with major scientific publishers. To help guide and theorise my observations, I started from the idea of conceptualising the relatively low uptake level of the pilot Open Access agreement between VSNU and Elsevier as a moment of *breakdown* in the trajectory of development in this subset of the academic publishing infrastructure (Star & Ruhleder, 1996). Focusing on instances of breakdown is one of the major tenets in infrastructure studies, as these moments make the normally invisible qualities of an infrastructure (more) visible and interrupt its transparency, another characteristic feature of a functional infrastructure (ibid., see also Larkin, 2013; Kaltenbrunner, 2015a; Karasti & Blomberg, 2018). This is because when an infrastructure breaks, e.g., a server is down or there is a power blackout (Star & Ruhleder, 1996), it also serves as an excellent analytical opportunity “to disentangle how technological instruments, conceptual frameworks, and social order in a given infrastructure make possible specific forms of living and knowing” (Kaltenbrunner, 2015a, p. 5).

The strategy of studying infrastructures in moments of breakdown has further emerged as one of the main methods of conducting an *infrastructural inversion* (Kaltenbrunner, 2015a; Karasti & Blomberg, 2018; Simonsen et al., 2020). Initially suggested in a book by Geoffrey C. Bowker (1994) on the rise of Schlumberger in the first half of the 20th century – a company that was carrying out measurements of oil fields, and so substantially helped the oil industry to increase the efficiency and precision of their drilling operations in search of productive oil fields – this notion is used to foreground crucial work practices that often remain unnoticed backstage (Star, 1999). According to Bowker, “the set of techniques (administrative, social, and technical) that the company marshaled ... preceded, created the conditions for, and determined the form of” Schlumberger's scientific activities and business strategy (1994, p. 10). Here, Bowker argued that a number of organisational and bureaucratic innovations, such as the standardisation and rationalisation of factory procedures in industrial chemistry, have actually “*preceded* the development of industrial science” and rendered related commercial activities possible (1994, p. 13, emphasis added). That is,

he stressed that such “infrastructural work” in the background would greatly influence and co-shape the forms that a given technology can take and the scientific knowledge that can be produced (ibid., pp. 10–14).

As explicated later on by Star and Bowker (2006, p. 233), “the concept of infrastructural inversion [was conceived] to describe the fact that historical changes frequently ascribed to some spectacular product of an age are frequently more a feature of an infrastructure permitting the development of that product”. Instead of attributing a certain achievement “to heroic actors, social movements or cultural mores”, we are taught to look behind the scenes at tiny technological and organisational arrangements that enable the very functioning of large socio-technical systems in the first place (ibid.). Giving them causal prominence, as Star and Bowker (2006) argue, is comparable to a methodological “figure ground gestalt shift”. Similarly, according to Simonsen and colleagues (2020, p. 115), infrastructural inversion can be described as “the gestalt switch of shifting attention from the activities invisibly supported by an infrastructure to the activities that enable the infrastructure to function and meet desired needs for collaborative support”. Examining a given infrastructure, then, means inverting its infrastructural relations (Karasti & Blomberg, 2018) and “problematizing this relationship between background and foreground” (Star & Bowker, 2006, p. 233).

While investigating sites and moments of breakdown – or, sometimes, even instigating them with the help of “breaching experiments” (Garfinkel, 1967, cited in Karasti & Blomberg, 2018) – has become a frequent entry point for performing an infrastructural inversion, there are several other ways that help uncover an infrastructure’s logic and implicit rules (Kaltenbrunner, 2015a; Harvey et al., 2016; Karasti & Blomberg, 2018; Simonsen et al., 2020). For instance, Kaltenbrunner (if somewhat cryptically) suggests “systematically defamiliariz[ing] particular elements of infrastructure” (2015a, p. 5). In ethnographic fieldwork, according to Karasti and Blomberg (2018, p. 251), further strategies to study invisible features of (information) infrastructures and infrastructuring processes include “following how members themselves engage in activities of infrastructural inversion”, as well as “following infrastructural traces in the material and technical environments”. As for the former, Kaltenbrunner’s own study (2015a) can be taken as an illustration of situations in which various members (researchers and practitioners) in the field of digital humanities have, in his view, used infrastructural inversion as a form of “articulation work” (Strauss, 1985, 1988; Schmidt & Bannon, 1992, cited in Kaltenbrunner, 2015a) and a generative resource for (re-)imagining knowledge production in humanities scholarship. According to Simonsen et al. (2020), such examples from digital humanities also help to demonstrate the intimate entanglements between the design and tools of socio-material (research) infrastructures and their epistemological and political implications.

Beyond such instances of (self-)reflexivity, like those studied by Kaltenbrunner (2015a), another empirical-ethnographic strategy for using infrastructural inversion “is to turn to the members who are already involved in infrastructuring activities as part of their job descriptions – whether as part of planning, designing, maintaining or repairing infrastructures” (Simonsen et al., 2020, p. 122). This approach is closely linked to Star and Ruhleder’s argument to consider an infrastructure as a

fundamentally relational concept, and “not as a thing stripped of use” (1996, p. 113). Therefore, Star and Ruhleder (ibid.; emphasis in original) prompt us to ask “*when* – not *what* – is an infrastructure”. For example, “for a railroad engineer, the rails are not infrastructure but topic” (Star, 1999, p. 380). The same applies to a city planner or a plumber, for whom the water system is their work or problem – not like for a cook who will presumably take this well-working infrastructure for granted and as integral to making dinner (Star, 1999). Or, in Star’s words, “it means different things to different groups” (ibid., p. 377) – hence “one person’s infrastructure is another’s topic, or difficulty” (p. 380).

Last, the third main entry point for carrying out an infrastructural inversion “explores and inverts aspects of the accreted material environment” (Karasti & Blomberg, 2018, p. 252). This entails following various kinds of “digital inscriptions and traces” including documents, standards, and protocols that people produce “to know their communities and to act within them” (ibid.). As a method, such “trace ethnography” (Geiger & Ribes 2011, cited in Karasti & Blomberg, 2018, pp. 252–253) often reveals the otherwise invisible elements of an infrastructure that underlie routinised activities. As argued by Denis (2019, p. 284), “if social order is constantly maintained by generally unnoticed gestures during interaction, we should also investigate the operations that daily shape and preserve material order”.

This approach echoes Star’s (1999, p. 377) call “to study boring things” – in the sense that infrastructure “is frequently mundane to the point of boredom, involving things such as plugs, standards, and bureaucratic forms”. As Star further explains:

“Many aspects of infrastructure are singularly unexciting. They appear as lists of numbers and technical specifications, or as hidden mechanisms subtending those processes more familiar to social scientists. It takes some digging *to unearth the dramas* inherent in system design creating, to restore narrative to what appears to be dead lists” (Star, 1999, p. 377, emphasis added).

In the same vein, Karasti and Blomberg note that “while it takes a lot of work to render infrastructures as taken-for-granted and invisible, it also takes a lot of work to ‘invert’ the infrastructure in its myriad relations” (2018, p. 251). For an ethnographer wishing to engage with this effort, Star (1999, pp. 384–386) herself offers a number of “tricks of the trade” that can be used for this purpose. Among them, she suggests identifying master narratives and “others”, surfacing invisible work processes, and attending to the paradoxes of infrastructure (ibid.). Other authors also advise starting by focusing on “materiality, mundane operational processes and invisible, unnoticed work” (Karasti & Blomberg, 2018, p. 251). To complement the entry points discussed above, the social worlds framework (Clarke & Star, 2008) and especially the social worlds/arenas maps (Clarke, 2005) underlying it have emerged as a particularly powerful analytical approach. In line with the motivation for conducting infrastructural inversion, and owing to its roots in the symbolic interactionist tradition, the social worlds framework entails “the ability to focus now on the niche and now on the ecosystem which defined it” (Dingwall, 1999, p. 217, cited in Clarke & Star, 2008, p. 114), and so is well-suited to provide meso-level interpretations of the situation of

inquiry. In what follows, these theoretical-methodological considerations will guide my attempt at inverting infrastructural relations in the VSNU-led Open Access negotiations.

10.2 Libraries, librarians, and their shifting position in the quest for Open Access

What were the *dramas* buried in the traces left behind by the designers and users of novel Open Access publishing agreements in the Netherlands, and particularly the one brokered between VSNU and Elsevier in late 2015? From national Open Access monitoring statistics¹²⁵, VSNU's (2016b, 2017, 2018a, 2019a) information brochures, newsletters, and e-zines, as well as various official statements and press releases (e.g., VSNU, 2014b, 2015a, 2015c)¹²⁶, we can learn about the number of journal articles published under Open Access in a given year, their share among the total publications at Dutch universities, the list of conditions that an interested author had to fulfil in order to become eligible for the offer, as well as some brief glimpses into the dynamics of this craftwork and the arguments used by the negotiating parties. Upon the initial reading of the story, we are also introduced to an ingenious state secretary, a certain "heroic actor" (Star & Bowker, 2006), who embarked on a mission to finally "speed up the [Open Access] transition process" (OCW, 2014, n.p.).

With regard to the work – and workers – in the background, whose daily jobs and expertise were inseparable from fulfilling the ambitious targets to transition from the conventional subscription-based publishing of academic journals to immediate Open Access, one could find plenty of clues in Dekker's letter (OCW, 2014) itself. Most notably, it singled out various actors in the Dutch research landscape whose previous efforts "to promote and improve open access" ranged "from improving the repository infrastructure and setting up pilot projects for open access journals to experimenting with the licences issued by traditional publishers" (ibid., n.p.). Even the "spectacular product of an age" (Star & Bowker, 2006), i.e., in this case, the Big Deals expanded with prepaid APC quotas that were concluded by the VSNU-led negotiation teams, were arguably rendered possible due to the prior close alignment of interests and workflows between research funders, research institutions, and scientific publishers. Similarly to Schlumberger's operations studied by Bowker (1994), all of these organisational processes had already taken place well in advance of the negotiations that were triggered by this letter.

Yet there was one particular category of actors which, though unobtrusively, played an instrumental role in the achievements named above. As repository managers, information specialists advising on publishers' licenses and self-archiving policies, and the driving force behind institutional Open Access offices and support services, professionals at academic libraries¹²⁷ have

125 See <https://www.openaccess.nl/en/in-the-netherlands/monitor> [last checked on 20/01/2022]

126 Original copies of agreement details published by Elsevier at <https://www.elsevier.com/open-access/agreements/VSNUNL> archived by the author.

127 While being aware of and acknowledging the diversity of occupational profiles and professional qualifications of people working in this area, I will use the terms "professionals at academic libraries" and "academic librarians" synonymously for the remainder of this chapter. For exploring the invisible work of staff advisers in political position-making, in turn, see e.g. Laube et al., 2020.

been among the most enthusiastic advocates of Open Access in academic publishing. Moreover, this professional group was likely to experience the most far-reaching structural changes to its occupational profile and (self-)understanding in light of the envisioned switch to Open Access. As the readers of Sander Dekker's letter were informed:

"The universities, the Royal Academy and NWO will have to prioritise the golden road to open access in their institutional policies if we are to achieve the target indicated above. The universities in particular must make allowance for the changing tasks of their libraries. The shift from university-financed subscriptions to researcher-financed publication will have consequences for how funding is allocated within the walls of academia" (OCW, 2014, n.p., emphasis added).

That is, staff at Dutch university libraries in particular were anticipated to substantially rejig their traditional roles and work patterns. In either case, both when financing journal subscriptions and when covering Open Access publishing fees for their authors (although these were typically paid from institutional budgets and not by researchers themselves, as stated above), the necessary organisational processes were usually arranged and administered by specialists at university libraries. Moreover, in the resulting VSNU-Elsevier agreement for 2016–2018 with its novel pilot Open Access component, as well as in other similar contracts, academic libraries were the ones responsible for implementing the underlying workflows and taking care of mundane operational tasks. They were (and still are) checking affiliations of corresponding authors after they submit a new manuscript for publication with one of the major publishers, navigating dashboards built for this purpose, collecting related financial statistics, contributing them to (inter-)national Open Access monitoring initiatives, and examining individual requests to take over publishing fees from institutional APC funds, among other things.

However, the aforementioned extensive shift from paying to get access to subscribed journals towards covering the publication charges of affiliated researchers, as desired by state secretary Dekker (OCW, 2014), seemed to turn upside down the basic principles according to which libraries in the Netherlands and elsewhere had organised their work for decades, if not centuries. That is, if the library staff were to repurpose their literature budgets and start processing APC invoices only, instead of buying new books and journal issues, they would inevitably have to neglect the needs of their remaining user groups. Particularly at universities, if catering solely to the interests of academic authors, such a *modus operandi* would adversely affect libraries' main users, i.e. the students. Since the latter are (presumably) avid readers of scholarly publications, but normally don't act as the authors thereof, accessing literature for study and research might become considerably more difficult under this transitional regime.

That is, since at no institution can the students and researchers be expected to read exactly the same publications that they themselves happen to author (nor this would be desirable), the "production" and "consumption" sides with regard to scholarly publications will never be fully congruent. What is more, given that research endeavours nowadays increasingly take place in inter-institutional and international collaborations, which is also reflected in the growing number of co-authors in scientific publications (see, e.g., Fanelli & Larivière, 2016), how could the Open

Access ratio of “Dutch”¹²⁸ publications be assessed, either qualitatively and quantitatively? Hence, strictly speaking, reaching Dekker’s 100% Open Access target would only be possible if all research institutions and scientific publishers worldwide would commit to the same goal and implementation model as chosen in the Netherlands.

Beyond such discrepancies and logical fallacies, the reasoning provided in Dekker’s letter left some further open questions. If this proclaimed Open Access transition strategy (OCW, 2014) were fully adhered to, a series of even more severe and fundamental questions in relation to the roles and responsibilities of academic libraries would have to be posed. For instance, if the tasks of academic librarians were to be reduced to an administrative function only, i.e. to transfer the money for APCs to scientific publishers, then would there still be any need for the remaining competences of this highly qualified staff? What would happen with their curatorial activities and extensive knowledge of building customised literature collections for local use at their institutions? And what purpose would there be for library buildings, designed with extensive bookshelves in mind to arrange and present their holdings?

It is ironic that issues of this kind as well as the possibly profound effects of the envisioned Open Access transition for this professional group, however central to this scenario it may be, have barely received any attention from science policy-makers, researchers, and even librarians themselves. Instead, it is rather simply assumed that libraries will cooperate and support the switch to an APC-based Open Access publishing future with their own expertise and resources, without asking (self-)critical questions about the chosen pathway. This odd dissonance is most striking in a “white paper” published by staff of the Max Planck Digital Library (MPDL; part of the Max Planck Society) in spring of 2015, the year in which the pilot Open Access agreement between VSNU and Elsevier was reached. Beyond some of its widely debated (and highly debatable) propositions, Schimmer and colleagues (2015) suggested proceeding with a large-scale Open Access transition by making “offsetting” agreements with scientific publishers. That is, they urged libraries to continue subscribing to Big Deal-type journal packages, but to ask for rebates for the APCs paid by their institutions. The enthusiasm of the authors for this projected trajectory as the most promising route to catapult scholarly publishing into a new era could not be overlooked:

“The offsetting principle is finally opening up the subscription system and starting to bring it into some alignment with open access requirements. As a consequence, the library acquisition budget is losing the hermetic seal that dates back to the print era and that has remained so pervasive in the daily routines of most libraries. Finally, the libraries and consortia of the world are beginning to live up to the expectations that have been raised by the many open access resolutions of the past decade” (Schimmer et al., 2015, p. 10).

As can be seen from this quote, there were firm expectations for how academic libraries should

128 For example, following a report published by the National Science Foundation (NSF) in the USA, almost 30% of scientific articles in science and engineering fields from the Netherlands were co-authored with a US-based author in 2018. See <https://nces.nsf.gov/pubs/nsb20206/international-collaboration#inlineTable1812> [last checked on 23/01/2022].

position themselves and their own interests in transitioning to the declared Open Access future. Yet, even more notably, this proposition also entails numerous implicit pointers at the upcoming challenges that were likely to arise in this re-infrastructuring effort (Grisot & Vassilakopoulou, 2017). These go back to the attempt “to turn” the long-established logic of the academic publishing infrastructure from a “pay-to-read” to a “pay-to-say” principle and to re-align the functioning of academic libraries to suit this shift.

At this point, I would like to return to the conceptual lenses that underlie my empirical analysis and the reasons behind my choice to focus on the work of academic libraries and librarians in this chapter. First, I argue that this particular actor group would likely experience the most dramatic implications of the prescribed move to an entirely APC-based academic publishing regime, as envisioned in Dekker’s letter (OCW, 2014). I make this assertion because such a transition scenario stands in stark contrast to the long-established working modes and organisational structures at academic libraries. Similarly to “the nexus between infrastructural organization and disciplinary identity”, as observed by Kaltenbrunner (2014, p. 8) in the field of digital humanities, libraries worldwide used to be geared towards building up and maintaining literature collections, tailored to the needs of their local users and visitors. Typically, collection development and acquisition policies at libraries closely reflect the disciplinary profiles, tasks, and histories of their parent institutions – be it a university, a monastery, or a public city library. Take a look at a random library’s self-presentation and you will find a number of book volumes and other physical or electronic media that it proudly holds in its collections.¹²⁹ Hence, asking libraries to shunt aside this integral part of their missions that is so constitutive to their identity-building, and to focus on administering APCs instead, can be seen as a potential cause of friction, if not an outright culture clash.

Second, coming back to Star and Ruhleder’s (1996) question “*when is infrastructure?*” means bringing to the fore the invisible work or the socio-material infrastructural “ground” (Harvey et al., 2017, p. 3) upon which the smooth operation of the academic publishing infrastructure depended. Metaphorically speaking, academic librarians, and, among them, especially those working in support of scholarly communications, are the railroad engineers and construction workers of the modern-day scientific information highways. They are the maintainers who are already involved in (re-)infrastructuring academic publishing as part of their job descriptions (Simonsen et al., 2020). Without libraries, interested readers would hit paywalls at most closed-access academic journals, publishers of these journals would lose their biggest subscribers and sources of income, and authors of academic works wouldn’t find their publications diligently indexed in inter-institutional search catalogues. In other words, the whole internal scaffolding in the current setup of the academic literature supply would collapse.

129 For example, the university library at the University of Vienna introduces itself as “Austria’s largest library and the oldest university library in the German-speaking area, dating from 1365. ... The main library, located inside the main university building ... holds over 2.7 million volumes. As an inter-faculty and interdisciplinary library it collects literature from all disciplines taught at Vienna University”. See https://bibliothek.univie.ac.at/en/ueber_uns.html [last checked on 23/01/2022].

Yet this vast social, technical, and material infrastructure *does* work quite well. In most cases, users of academic libraries can enjoy a seamless flow of information that enables them to download PDF copies of journal articles, if they wish to do so, and browse through shelves with neatly sequenced books that were purchased for them in advance, with a shelf number glued on their spines and covers, and sorted into subject categories. The absence of breakdowns in these daily routines, at least on a regular basis, is what makes the normally invisible work of academic libraries a perfect object of inquiry for engaging with infrastructural inversion (Harvey et al., 2017). In this regard, to better understand the unfolding of changes in infrastructural relations and their potential implications, I take further inspiration, once again, from Grisot and Vassilakopoulou (2017). In their empirical case study on implementing the Norwegian government's eHealth initiative, the authors chose "to examine the phenomenon in question through the experiences of those working in the project" (p. 13). That is, instead of focusing on the activities that were supported by the infrastructure, they engaged in infrastructural inversion and investigated the design and development activities of the project team as well as the growing complexity of this work (ibid.). Because, referring to Star (1999), they note that "actually, making an infrastructure visible means attending to the ways the infrastructure becomes someone's work or problem" (Grisot & Vassilakopoulou, 2017, p. 11).

This leads to my third main reason for turning to libraries in this chapter. In line with the idea to triangulate not only methods but also viewpoints, as deployed when studying key areas of tension (see my conceptual-methodological note on triangulating viewpoints in *chapter 9*), I believe that many features of the academic publishing infrastructure are only visible to this particular actor group. Leaving out this vital perspective, therefore, would result in producing a fragmentary and incomplete picture in my empirical analysis. In a similar vein, Denis (2019) makes the case for the importance of what can be called maintenance and repair studies. Invoking earlier disputes related to the gaps and weaknesses of ANT-oriented research approaches, they quote Star's argument to study "politics by other means" (Latour, 1987) by examining the invisible work involved in and experiences of those who are affected by particular development trajectories when establishing technological artefacts (ibid.). In Star's own words: "there is no analytic reason to put aside maintenance and the few sectors of population that are discriminated against, in fact, [there is] every reason not to" (Star, 1991, cited in Denis, 2019, p. 283).

As for the populations that are discriminated against, taking a closer look at "those who are *not* served by a particular infrastructure" (Star, 1999, p. 380, emphasis in original) has been shown to serve as one of most fruitful analytical entry points and "naturally occurring inversions" (Harvey et al., 2017) for studying infrastructures. Following this methodological proposition, I have already examined infrastructural anomalies and discriminatory criteria in the VSNU-Elsevier agreement for Open Access publishing (see particularly the sub-chapter 9.4.3 on "home-made exclusions"). Yet, as Denis (2019, p. 284) further notes, later works in response to Star's critique have largely ignored the backstage activities related to issues of maintenance, leaving it "an obscure, largely unexplored domain". Therefore, surfacing the many kinds of invisible labour for maintaining smooth access to scholarly literature, most of which has usually been accomplished by academic

libraries, seems to be a promising and much needed analytical route in this case. Along with the shifting tasks of libraries in the quest for Open Access, this consideration comes with additional sensitivities for exploring the relational qualities of the academic publishing infrastructure.

On a related note, continuing with early appeals to also investigate the generally unnoticed routine operations and interactions, rather than innovation-centric accounts and breakdowns, of technological artefacts, some authors argue that maintenance and repair, “though particularly difficult to grasp, are essential dimensions of the global history of technology” (Edgerton, 2006, cited in Denis, 2019, p. 284). Moreover, examining such hitherto neglected objects and practices is seen as a means of “produc[ing] more balanced depictions through the (re)discovery of the people, workers and users who participate in the daily life of technologies, long after their invention” (Denis, 2019, p. 284). Thus, by engaging in infrastructural inversion and exploring such activities, I aim to contribute “to widen[ing] the understanding of objects themselves” (ibid., p. 285). In the end, this approach shall serve as a way to deconstruct the innovation-centric narratives and to re-tell the Open Access story from a different, complementary angle.

10.3 The librarians’ dilemmas: From infrastructuring Big Deals to re-infrastructuring Open Access quotas

On the previous pages, I have presented my rationale for considering the work of academic libraries and librarians as inseparable from facilitating a smooth functioning of the academic publishing infrastructure. Thanks to their labour, researchers, students, and occasional walk-in visitors can quickly access vast amounts of monographs, edited volumes, conference proceedings, journal articles, and numerous other types of publications. But academic librarians are also there to help with training offers on applying specialised search techniques, retrieving information from subject databases and utilising reference management tools, or consulting authors about possible uses (and abuses) of bibliometric indicators, among other things. Especially when dwelling within institutional premises, or assuming that their affiliations are recognised via virtual private networks (VPN), readers at universities and research institutions often take access to electronic resources and scholarly publications for granted (see also sub-chapter 9.2.3 on “access bubbles”). What remains unnoticed in such situations are the particularities of licensing and subscription agreements, which regulate access to copyrighted contents according to pre-defined internet protocol (IP) ranges, authentication methods, parts of subscribed products, or the criteria that authorised users need to fulfil otherwise. As stated by Simonsen et al. (2020, p. 119) “the users of the infrastructure are relatively unaware of it and how it works”.

This is also one of the paradoxes of a well-functioning infrastructure – the easier it is for them to use, the more likely it will remain unnoticed by or “transparent” for its users (Star & Ruhleder, 1996; Bowker & Star 1999; Star, 1999). At the same time, infrastructure should be treated “not as interlinked pieces of hardware or information processing capabilities, but rather as a process of infrastructuring, where sociotechnical relations are formed and maintained” (Grisot & Vassilakopoulou, 2017, p. 11). That is, infrastructures shouldn’t be studied as mere technical artefacts, but “as a relationship between humans’ organized ways of ‘doing’ things and the

technologies that enable and support these practices” (Simonsen et al., 2020, p. 118).

In the case of the academic publishing infrastructure, in its present form, the Big Deals have been the core mechanism that was decisive for configuring the relationships between its main actors, i.e. major scientific publishing companies, on one side, and research institutions represented by their libraries, on the other side. These contractual agreements determined the social and technical, as well as judicial, financial, and material, aspects of their interactions at a single stroke. Basically, the Big Deals can be explained in the following way:

“Simply put, the Big Deal is an online aggregation of journals that publishers offer as a one-price, one size fits all package. In the Big Deal, libraries agree to buy electronic access to all of a commercial publisher's journals for a price based on current payments to that publisher, plus some increment. Under the terms of the contract, annual price increases are capped for a number of years” (Frazier, 2001, n.p.).

This constellation between big-enough publishers, who were able to offer a bundled subscription package to a huge number of their journals, and academic libraries, often organised in national consortia, has been around for some two decades, starting from the late 1990s and becoming more widespread around the early 2000s (Frazier, 2001; Friend, 2003; Shu et al., 2018). The most characteristic feature of these types of, indeed, *big deals*, is their large scale. By signing one such contract, a group of university libraries could provide instant access to hundreds or thousands of scholarly journals for the entire population of their students, researchers, and teaching staff (Friend, 2003). This is also one of the broadly accepted advantages of Big Deals. That is, saving time on negotiations, compared to arranging contractual terms for each journal title separately. Thanks to this time-saving *efficiency*, along with the *continuity* they offer through multi-year agreements and the resulting *predictability* of annual expenditures – another important feature for public and private organisations alike, who wish (or have) to plan their budgets well in advance – Big Deals have quickly gained acceptance in the world of academic libraries (Friend, 2003; Verhagen, 2007).

Yet there was one weighty argument that seemed to convince librarians in purchasing departments and consortia managers even more. Namely, the pricing strategy that was put forward by commercial publishers with the advent of electronic publishing allowed for significantly increasing the *amount* of subscribed contents for only slightly higher prices, as compared to when single-journal subscriptions needed to be compiled in the past (Verhagen, 2005, 2007). In this way, the cost per subscribed journal was said to markedly drop, thus, representing “the best value for money model” (Verhagen, 2005, p. 95). At the same time, especially smaller and less resourced institutional libraries could gain access to journal titles “to which they could not otherwise afford to subscribe” (Friend, 2003, p. 154). In other words, “once you have offered your customers access to this sea of information[,] there is no easy way back” (Verhagen, 2005, p. 96).

This line of argumentation was also present in the interviews with librarians on the VSNU negotiation team. As explained by one interviewee, who referred to an analysis of expenditures at the Dutch library consortium UKB, subscription fees for standalone journals have risen by 25%

over past few years, as compared to just an 8% increase for those included in Big Deals. “So I always use this example to make very clear to everyone that big deals are a very good instrument to keep [the] pressure on prices” [int_2:199]. That is, approaching major publishers as a consortium was seen as a means to strengthen the collective bargaining power for participating libraries, and to reassure them with relatively moderate price increases, especially in light of more drastic double-digit increases with alternative purchasing and licensing models. Or, as this interviewee concluded: “you can't step back from the big deals; that's the problem of the big deals – if you step back, it's going to cost you too much of your collection” [int_2:186-187].

However, the comment above points to deeper issues which caused mixed feelings about Big Deals among other representatives of academic libraries, quite shortly after such bundled contracts were first introduced by major publishing companies. In the words of Nol Verhagen, former director of the university library at the University of Amsterdam and chairman of the UKB library consortium at that time, “Big deals are seductive and addictive. That's why some librarians love them and others hate them – and many librarians do both” (Verhagen, 2005, p. 95). As he explained further on, there have been attempts in the Netherlands “to decrease the [price] increase” that was routinely imposed by these publishing companies to compensate for (and outpace) inflation, typically at a rate of 5 or 6% annually (ibid., p. 96). For this purpose, members of the library consortium have been negotiating with some large commercial publishers in the hope that they can “get more value for less money” and find alternatives to Big Deals, in case they could not afford to continue then-ongoing agreements (ibid.). But these efforts seemed to bear little fruits:

“What we found was that all publishers involved were hesitating to let the big deal go. They obviously were trying to keep us locked in the big deal pattern and even to strengthen it by giving us a stronger drug. They, too, wanted e-only [the electronic version of journals]; they tried to force us to strengthen the consortium, demanding that all members should participate; they offered us some alternatives that were so unattractive that we seemed to have only one choice, and [they] were not very helpful in developing more flexible arrangements” (Verhagen, 2005, p. 96).

In the experience of UKB's member libraries, “the addictive character of big deals” meant “that they turn out to be really difficult to walk away from” (ibid.). Moreover, the initial “euphoria with which this purchasing model was welcomed as ‘win-win’” seemed to evaporate (Friend, 2003, p. 154). Other early critics pointed towards the dangers of the “game” in which the “[then] current generation of library directors” was engaging, where “short-term institutional benefits are achieved at the long-term expense of the academic community” (Frazier, 2001, n.p.). The author even felt compelled to compare the quandary with the famous “prisoners' dilemma” in which both players, librarians and publishers, appeared to behave rationally only at first glance (ibid.). Yet the risks involved for the librarians, but not for the publishers, seemed to be alarming:

“In the longer run, these contracts will weaken the power of librarians and consumers to influence scholarly communication systems in the future. Librarians will lose the opportunity to shape the content or quality of journal literature through the selection process. Those who follow us will face the all-or-nothing choice of paying whatever

publishers want or giving up an indispensable resource. The largest publishers will not only have greater market power to dictate prices. They will also have more control over contractual terms and conditions – including the ability to ‘disintermediate’ other players in the economic chain” (Frazier, 2001, n.p.).

Here, Kenneth Frazier, director of libraries at the University of Wisconsin, Madison, warned his fellow colleagues that “we are not playing a simple ‘win-win game,’ as it is so often characterized” (ibid.). In his view, the ultimate conclusion from this “librarians’ dilemma” was “that the Big Deal serves only the Big Publishers” (ibid.). Therefore, failing to find reasonable alternatives to the Big Deals would come at a great cost: first, the weakening of library collections “with journals we neither need nor want”, and second, “increasing our dependence on publishers who have already shown their determination to monopolize the information marketplace” (Frazier, 2001, n.p.). Moreover, the first possible implication of further entrenching Big Deals in libraries’ purchasing practices, as projected by Frazier (ibid.), hints at another thorny question: how to ascertain the *value* of a subscribed journal.

When taking a closer look at the Big Deal bundles offered by major scientific publishers, the justification that was usually presented in favour of large packages of journals was “that they add value by increasing the *quantity* of content available above the rate of increase in price” (Friend, 2003, p. 154; emphasis added). That is, the average price per subscribed journal could significantly decrease, with large publishers “telling librarians how cheap their product is when [the] price is divided by [the] number of [journal] titles accessible” (ibid.). Yet, as Friend continued, “this argument depends upon a certain definition of added value and upon the perspective from certain types of libraries” (ibid.). And this is because “the principal hazard of the Big Deal” was that it bundled “the strongest with the weakest publisher titles, the essential with the non-essential. Once you have tumbled for the Big Deal, the library cannot continue to receive the titles it most needs unless it continues to subscribe to the full package” (Frazier, 2001, n.p.). In other words, by choosing Big Deals, academic libraries were forced to add “secondary journals” that they otherwise would not have subscribed to, regardless of whether they or their users actually requested them (Shu et al., 2018).

Therefore, some librarians argued for the need to include further qualitative and quantitative usage-based indicators for assessing such value claims (Frazier, 2001; Friend, 2003; Verhagen, 2007). As Frazier remarked in a side note, “despite the fact that the Big Deal has been in place for years at several major universities there are no published studies that measure the cost per use of the journals aggregated in these licenses” (2001, n.p.). This task was attempted some 15 years later in a study that examined journal subscriptions and usage data from libraries at research universities in the US and Canada (Shu et al., 2018). While download data would have provided “comprehensive information of university-level usage of journals”, as the authors explained, “these data are not publicly available; and, in the case of many publishers, they cannot be shared by universities. In addition, download data cannot be obtained for the pre-digital era” (ibid, p. 789). Instead, the authors chose to analyse citations received by each journal as “the only indicator of use consistently available for print and online publication” to measure their use by local

university communities (ibid, p. 787).

Based on these data from 34 university libraries, which consisted of the journals (or “serials” in the technical jargon) purchased by them between 1986 and 2011, as well as journal articles published by their affiliated researchers in the same period and indexed in one major bibliometric database, this study arguably “provides evidence that, while big deal bundles do decrease the mean price per subscribed journal, academic libraries receive less value for their investment” (Shu et al., 2018, p. 785). More precisely, the authors have found that researchers from these 34 universities cited “only a fraction of journals purchased by their libraries, that this fraction is decreasing, and that the cost per cited journal has increased” (ibid.). As an overall conclusion, Shu et al. (2018) thus stressed that “big deals were not necessarily a ‘big value’ for libraries and academic stakeholders”, instead, they “increased serial expenditures to acquire a large number of unused journals” (p. 795).

However, while attempting to estimate the usage-based value of subscribed journals through citation data surely has its own limitations (Shu et al., 2018), this question could be scrutinised even further. Although many seemed to agree that “ultimately it is only the user of the content who can judge the value of the additional titles accessible through a ‘Big Deal’” (Friend, 2003, p. 154), pondering over the notion of usage itself appeared to be a fairly complicated task. Consider these self-critical reflections by Verhagen (2007, p. 132) in this regard:

“To be able to ascribe value to usage we should know a lot more about usage than we actually do. At the moment, we do not know who is using what, if our user is a student or a staff member, how much of usage represents actual reading, let alone how often the information is actually (re)used for teaching, research and study. The paradox is that as usage becomes easier, not only the costs but also the value per usage [seem] to decrease dramatically. Most usage does not have any value at all – representing not more than a glance at the content. So the real value seems not to be so much in the information itself as in the availability and accessibility of the information”.

In the end, as Verhagen states, libraries were there “to encourage and to enable usage, not to monitor and restrict usage” (ibid.). Within this understanding, having *as broad a coverage as possible* in one’s list of subscribed journals appeared to be the most expedient approach, even if through signing Big Deals. This line of thinking is connected to academic librarians’ desire to strive for a complete collection in each specialist subject, without sizeable gaps such as missing volumes or important journal titles. As explained by one of the interviewees representing this professional group: “because what the librarians do, they build research collections, so from a librarian’s perspective, when we have to choose between, let’s say, ‘Science’ and ‘Nature’ [journals], we always buy them both ... because you have to be complete: you have to serve your complete community” [int_2:58-62].

At the same time, especially for “core” journals, typically those with the highest esteem and/or journal impact factors in a given research field, the demand was observed to be price-inelastic “since they are usually linked to university tenure and promotion systems, as well as representing the scholarly vanguard” (Shu et al., 2018, p. 796). That is, research institutions were likely to subscribe to such journals virtually regardless of their rising prices. Having this in mind, as the

authors note, major scientific publishers managed to bundle core journals with secondary journals in Big Deals and so to substantially increase the sales volume of the latter and their own market shares. As a result, according to Shu and colleagues, “large publishers have effectively exploited the power of oligopolies” (ibid.).

The increasingly oligopolistic market structure in academic publishing that has emerged over the last decades, in turn, has arguably led to a situation in which “libraries are more or less helpless, for in scholarly publishing each product represents a unique value and cannot be replaced” (Larivière et al., 2015, p. 11). Such perceived *irreplaceability* of certain scholarly journals, at least under prevailing research publishing and evaluation regimes, leads us back to the second worrying implication of a complicated love-hate relationship between academic libraries and major scientific publishers, as projected earlier by Frazier (2001). Namely, a dangerous dependency on a few large commercial publishing companies whose services will evolve – and indeed seem to have evolved – into becoming “an indispensable resource” for researchers, universities, and their libraries alike (Frazier, 2001, n.p.; see also chapter 5. *on Pre-history* in this thesis).

While back in the early 2000s, such warnings might have sounded like a purely hypothetical – if markedly dystopian – scenario, a sense of *déjà vu* must arise when considering librarians’ experiences in more recent negotiations with major scientific publishers. As reported by one of the interviewees and members of the VSNU negotiation team, a colleague from their library’s purchasing department once attended some of the meetings. The purpose was “to advise the librarians ... because he is trained in negotiating [techniques]; most librarians aren’t” [int_2:343-344]. Yet “[when] he came back, he said ‘well, there is nothing to negotiate here, because these publishers have so much power, you can’t say “no” unless you minimize your service, but you can’t say “no”, so that’s an aspect of publishing which is driven by reputation” [int_2:345-347].

According to this interviewee, there was a huge risk of a “strong reinforcement of power” in light of the further move towards online journal publishing, where “the first ones to be there are the only ones at the end” [int_2:348-351]. Therefore, in his opinion, changing the power relations for the benefit of academic institutions was one of the main challenges in the current state of academic publishing. Nevertheless, attempts to *say “no”* to multi-national publishing giants have reportedly already occurred before. As remembered by another interviewee:

“In the past, we [libraries] often already said that we are not going to negotiate with a party, for instance, Elsevier, anymore, because they were asking [for] too much money, but in the end, and we sometimes fed that information back to the [VSNU] association, to our bosses, and said ‘well, you have to make a decision on how to proceed, tell us what we should do’, and most of the times, there was always one or two universities that said ‘oh no, we should not bother, and we just, we cannot afford to not have access to Elsevier or Springer, or Wiley, so we better comply with what they are asking’” [int_4:64-66].

That is, according to this librarian on VSNU’s negotiation team, it was actually the university heads or “the bosses” who were reluctant to discontinue the Big Deals subscriptions and “the ones who were backing off” in this respect [int_4:67]. At the same time, as this interviewee continued,

such situations were considered to be a good illustration of some of the intricacies that academic libraries were facing so “that our boards see how difficult it is” to negotiate with these sorts of publishers [int_4:69].

It then appears that academic institutions with their libraries on the front line have become hostages of their own internal logics and working modes. In particular, the tendency to prioritise highly ranked scientific journals in institutional purchasing and individual publishing decisions proved to be the Achilles’ heel that was easy for publishers to exploit with the business model of starting to bundle together a vast number journals (Verhagen, 2007). In line with Frazier’s (2001) grim predictions, this allowed major scientific publishers to evolve into powerful players who were not only able to dictate spiralling prices, but also to dominate the whole academic publishing landscape (Larivière et al., 2015; Shu et al., 2018). The risk of the latter, with potentially even more far-reaching consequences, seemed to already be a huge concern in the early days of Big Deals. As learned from the previous negotiations at the Dutch library consortium UKB with Elsevier and the like:

“‘Big deals’ are inflexible, in the long run expensive, and are squeezing out small not-for-profit publishers, who are going to pay the bill for the inability of libraries to step out of big deals or to manage their budgets via cancellations to journals that form part of big deal arrangements” (Verhagen, 2007, p. 131).

Still, despite the warnings mentioned above, the resulting VSNU-Elsevier agreement for 2016–2018 was designed to continue the regular Big Deal subscription package and to extend it with dedicated Open Access publishing quotas. What is more, since this agreement was reached at only a slightly higher total price, it was repeatedly described as offering “extra added value within the [big] deals” [int_2:307]. Although uncertainties concerning the possibility of rising future costs or the overall prospects of success in this endeavour were expressed time and again, cancelling the Big Deals and searching for other solutions was not considered a serious alternative in the interviews with most negotiators on the VSNU team. On the contrary, the absence of such discussions with regard to the long-term implications of the chosen pathway can be compared to what Adele Clarke has called sites of “discursive silence”, i.e. positions and statements on some pressing issues that can be reasonably expected and yet remain loudly missing in a given discourse (Clarke, 2005).

Putting these two perspectives in juxtaposition – whether to see the Big Deals as part of a solution or a problem in the current functioning of the academic publishing infrastructure – seems to result in sharply conflicting views. Yet this apparent contradiction is less surprising when seen through the re-infrastructuring lens. As Grisot and Vassilakopoulou (2017, p. 23) explain, “re-infrastructuring indicates the introduction of capabilities to facilitate new logics in a mature infrastructure by leveraging established relationships”. That is, starting from the status quo and building on familiar features thereof, instead of brainstorming from scratch, is what characterises many projects of this kind. Ensuring the embeddedness of old and new elements, then, becomes the main concern of those involved in such design activities (ibid., pp. 10–11).

However, relying on the existing “installed base” (Star & Ruhleder, 1996) has been shown to both enable and constrain the evolution of infrastructures (Grisot & Vassilakopoulou, 2017). In the present case, the established relationships between academic libraries and major scientific publishing companies have been leveraged in order to fulfil the goals prescribed in Sander Dekker’s letter (OCW, 2014). At the same time, the notorious Big Deals at the core of this installed base turned out to be an ambivalent resource to work with. Even the librarians who praised such large-scale agreements as a good method for counteracting ever-rising subscription fees were worried about the dubious outcome of their efforts to include prepaid Open Access arrangements in these bundles. In the words of one interviewee, “we are still, I think, a little bit locked into the demands of the publishers” [int_2:311].

Ultimately, the librarians involved in negotiating such novel Big Deals were to be confronted with another dilemma. Namely, they had to maintain the embeddedness of the pilot Open Access agreements within the subscription-based academic publishing infrastructure while simultaneously “renegotiating the connections that make [that] embeddedness possible” (Grisot & Vassilakopoulou, 2017, pp. 10–11). Importantly, re-inventing Big Deals with major scientific publishers to suit the envisioned Open Access transition plan implied taking a back seat in this matter for the librarians. Although academic libraries and their consortia had been in charge of negotiating Big Deals for several decades, it was now high-level university managers who had taken over the responsibility for this task. In other words, it was not only the small not-for-profit publishers who were likely to pay the bill for the long-term costs of this move, as was often argued, but also the professionals at academic libraries themselves. As a corollary effect, they could be permanently side-lined in making decisions on how to arrange their relationships with various actors in the future academic publishing landscape.

While I have examined the manoeuvre to upgrade the authority level in the VSNU-led negotiations and its importance for the whole Dutch Open Access transition strategy elsewhere in the thesis (see especially 7.3.3 *How to define and coordinate the roles: “enrolment”*), in the following sub-chapter I will approach this moment in the story from the perspective of the social worlds framework (Clarke & Star, 2008). Because infrastructures, according to Clarke and Star (2008, p. 115) can be further understood “as frozen discourses that form avenues between social worlds and into arenas and larger structures”. In the case of the academic publishing infrastructure, it was essentially “imbricated with the unique nature of each social world and, especially as scale becomes important, with arenas” (ibid.). Mapping out the key social worlds and the relations between them in the Open Access negotiations arena will thus be used as a further analytic exercise (Clarke, 2005) and a “theory/methods package” (Clarke & Star, 2008) for understanding the (re-)infrastructuring activities in this empirical case (Grisot & Vassilakopoulou, 2017). As Clarke (2005, p. 119) points out, “the social worlds/arenas analysis is intended to reveal certain broader conditions – constraints, opportunities, and resources – that may well otherwise go unnoted”. I consider this task of specifying such “structural conditions” that are constitutive of a given situation, and making them literally visible in the analysis (Clarke & Star, 2008, p. 128), in turn, as yet another way to perform an infrastructural inversion.

10.4 *We vs. them* – Visualising social worlds in the Open Access negotiations arena

In the introduction to this chapter, I discussed focusing on moments of breakdown as one of the main entry points for engaging with infrastructural inversion (Kaltenbrunner, 2014; Harvey et al., 2016; Karasti & Blomberg, 2018; Simonsen et al., 2020). Karasti and Blomberg further refer to earlier work on “breaching experiments” (Garfinkel, 1967), “where informal, unwritten rules were intentionally broken” to expose the logic of a certain infrastructure (Karasti & Blomberg, 2018, p. 252). A related methodological approach, as they continue, are controversy studies in STS “where controversies uncover underlying expectations and turf battles that undergird seemingly ‘objective’ technology development. The invisible work that keeps the infrastructure aligned becomes accessible to the researcher as actors provide explicit articulations of the controversy” (Ribes & Lee 2010, cited in Karasti & Blomberg, 2018, p. 252).

While cancelling a Big Deal with Elsevier (or any other major scientific publisher) would have been an interesting example of a *breaching experiment* for this empirical case study, such a turn of events did not occur in the Netherlands in the observed period. Although the negotiation team at VSNU had reportedly been considering whether “to pull the plug” several times, and even called upon Dutch researchers to boycott their editorial positions at Elsevier’s journals (VSNU, 2016), an agreement between the two parties was reached in late 2015 and then repeatedly prolonged. It is important to note, however, that consortia of libraries and research organisations in some other European countries did indeed cancel their Big Deals with Elsevier in the following years. These include more than 60 member organisations of the “DEAL project” that decided to terminate their subscription contracts by the end of 2017¹³⁰ and were joined by other organisations, totalling some 200 research institutions in Germany (HRK, 2018) as well as the cancellation of the Swedish library consortium Bibsam in 2018 that potentially affected some 42,000 researchers in 29 higher education institutions and 15 government agencies (Olsson et al., 2020a; Olsson et al., 2020b). As commented by Ralf Schimmer of the MPDL, “Elsevier’s move to cut off some German researchers also provides a test as to whether the scientists can survive without a subscription deal with the mega-publisher” (Else, 2018b, p. 454).

Nevertheless, there was a certain internal *controversy* that elicited explicit articulations from some interviewees about underlying expectations and their positioning vis-à-vis other members of the VSNU negotiation team. Deriving from the ambitions and measures outlined by state secretary Dekker (OCW, 2014), the controversy was linked to the decision to change the setup of the negotiation teams and shift the leading role from academic libraries to university presidents in the upcoming Big Deals negotiations (VSNU, 2016). Taking these negotiations “to the highest administrative level” to find suitable agreements with the eight biggest scientific publishers was later even highlighted as a crucial element for the success of “the Dutch approach” (*ibid.*, pp. 12–13). At the same time, especially for my interviews with librarians in the negotiation team, and my analysis thereof, this move appeared to deserve particular attention. It can be compared to an “ethnographic moment” that researchers might experience in their fieldwork:

130 See <https://www.projekt-deal.de/elsevier-news/> [last checked on 06/02/2022].

“The ethnographic moment is a relationship between what is apprehended and what seems to demand apprehension – between observing and understanding. It highlights the dual relationship of the researcher with his or her field. The researcher is immersed in the field and becomes part of the observed activities, just the same as the analysis entails spatial and intellectual movement away from the field” (Strathern, 1999, cited in Stubbe, 2015, p. 115).

Such an *ethnographic moment* was noticeable in the present empirical case study during one of the interviews. In the agreed interview setting with one of the librarians from the negotiation team, the VSNU programme manager happened to join the meeting as a (mostly) silent observer. When asked about the reason for this decision shortly afterwards, the librarian in question explained that it was explicitly requested by the programme manager. This atypical and somewhat special constellation, in turn, resulted in some additional worthwhile observations. Most intriguingly, this led to several remarks on the differences in views and standpoints between academic libraries and other actors participating in the ongoing negotiations. Such comments were often accentuated in terms of intonation and body language.

For instance, when explaining his own long-time interest and involvement in Open Access discussions, as well as the importance of this topic for the work of academic libraries, this interviewee noted that: “I think, there is one difference between [the VSNU programme manager] and me in this perspective, because I am a librarian” [int_2:56]. In the following, the interviewee described building research collections as an activity that is at the core of librarians’ profession, and how it is distinct from a competition-driven viewpoint, such as if one would have to choose between different publication venues and strive for the lowest APCs under a new publishing regime. What came across as a side note in such accounts, at a first glance, was an implicit demarcation line between academic librarians and other members of the negotiation team.

This also applies to the representatives of the higher-level university management that were called upon to enter and lead the negotiations. Consider the following excerpt from this verbatim interview transcript:

[librarian]: “So this high-level involvement, and I really, I wasn’t happy with it at first

[programme manager]: [laughing]

[librarian]: because I thought, what are they going to do with my collection, what are they interfering with my work? But in the end, we have to say, after two years, they really made a difference, they really got down the prices ... so they really got down the prices, because they have a very different point in the negotiations, because they truly said “well, if it’s not zero percent [price increase], we don’t have a deal”, and I have never seen [or] heard a librarian saying that, because they are much too afraid not to have the deal at the end

[programme manager]: *They* have no backing for such a position

[librarian]: *We* have no backing” [emphases added].

What was strikingly common to both of the librarians on the VSNU-led negotiation team, which was charged with reaching a suitable agreement with Elsevier, was their long-standing engagement with the topic and surrounding issues. Their engagement reaches as far back as the early 2000s, even before the term “Open Access” was publicly articulated by the BOAI (2002) and the two main implementation roads became known under the labels of Green and Golden roads to Open Access (Harnad et al., 2004; Guédon, 2008). As also commented by a fellow interviewee from another university library, “we were one of the first [people] to make, to create a national movement on open access [in the Netherlands] through [building a] repository ... so for me, it has been [a topic] I have been working on, well, at least 16 years” [int_4:30-32]. What is more, as library directors and representatives at the UKB consortium themselves, both interviewed librarians were able to take up a meso-level perspective between daily operational issues and big political goals (for more details on the interviewees, see also sub-chapter 2.2 *Materials and methods*).

That is, for many academic librarians in this field, Open Access has been their work or topic (Star, 1999) for almost two decades and has had a formative influence on their professional development and careers (see, e.g., Bosc & Harnad, 2005). This extensive time span and the intensity of their personal involvement stands in contrast with the lateral entry of non-specialist newcomers from high-level management and policy-making circles. In the words of one university president and member of the same negotiation team, who commented on the novel setup of the negotiation teams after the announcement of Sander Dekker’s ambitions:

“Initially, the discussions on open access were much more held at the operational level, discussions between our libraries and publishing houses, etcetera, and three four years ago, we said ‘no, we have to move it to the more executive level, where we take charge ourselves of the negotiations’ ... because we had to, we wanted to introduce open access that would require something very different, also in terms of negotiations ... *we want ourselves to be at the table*” [int_9:9-18, emphasis added].

What one can immediately notice in such accounts, among other things, are the references made to and the differentiation between multiple *social worlds* when retrospectively narrating the course of events in the VSNU-Elsevier negotiations. As groups of individuals and collectivities of various sorts, social worlds “generate shared perspectives that then form the basis for collective action[,] while individual and collective identities are constituted through commitments to and participation in social worlds and arenas” (Shibutani, 1955; Strauss, 1959, cited in Clarke & Star, 2008, p. 115). As Clarke and Star explicate (2008, p. 113; emphasis in original):

“Over time, social worlds typically segment into multiple worlds, intersect with other worlds with which they share substantive/topical interests and commitments, and merge. If and when the number of social worlds becomes large and crisscrossed with conflicts, different sorts of careers, viewpoints, funding sources, and so on, the whole is analyzed as an *arena*. An arena, then, is composed of multiple worlds organized ecologically around issues of mutual concern and commitment to action”.

In the present empirical case, a broad range of social worlds have come together in an Open Access negotiations arena for translating the provisions made in Dekker’s letter into concrete contractual

agreements. The social worlds that participated in this arena contained those of academic librarians, university presidents, science policy-makers, major scientific publishers, and some others. They can be distinguished from each other “as groups with shared commitments to certain activities, sharing resources of many kinds to achieve their goals and building shared ideologies about how to go about their business” (Strauss, 1978, 1982, 1993; Becker, 1982, cited in Clarke & Star, 2008, p. 115). Referring to Strauss (1978), Clarke and Star (2008, p. 118) further explain that “each social world has at least one primary activity, particular sites, and a technology (inherited or innovative means of carrying out the social world’s activities)”.

In the Open Access negotiations arena, the primary activities of the respective social worlds were clearly reflected in the distribution of roles and interactions between them. For instance, while science policy-makers were primarily concerned with setting a national goal and mobilising resources and other actors, university managers were confronted with such demands and had to ensure compliance with them at their institutions. Academic librarians and major scientific publishers, in turn, saw their business relationships and recurring Big Deals negotiations being shaken up by this unexpected political intervention. Yet, despite the diversity of their main foci and preoccupations, each actor was affected by the targets and measures prescribed in Dekker’s letter (OCW, 2014) and had to arrange their work around this newly surfaced mutual concern. Before continuing with this analytical lens, in what follows, I first provide a visual representation of the Open Access negotiation arena and the social worlds present (or implicated) as a situational map for the situation of inquiry (Clarke, 2005; Clarke & Star, 2008).

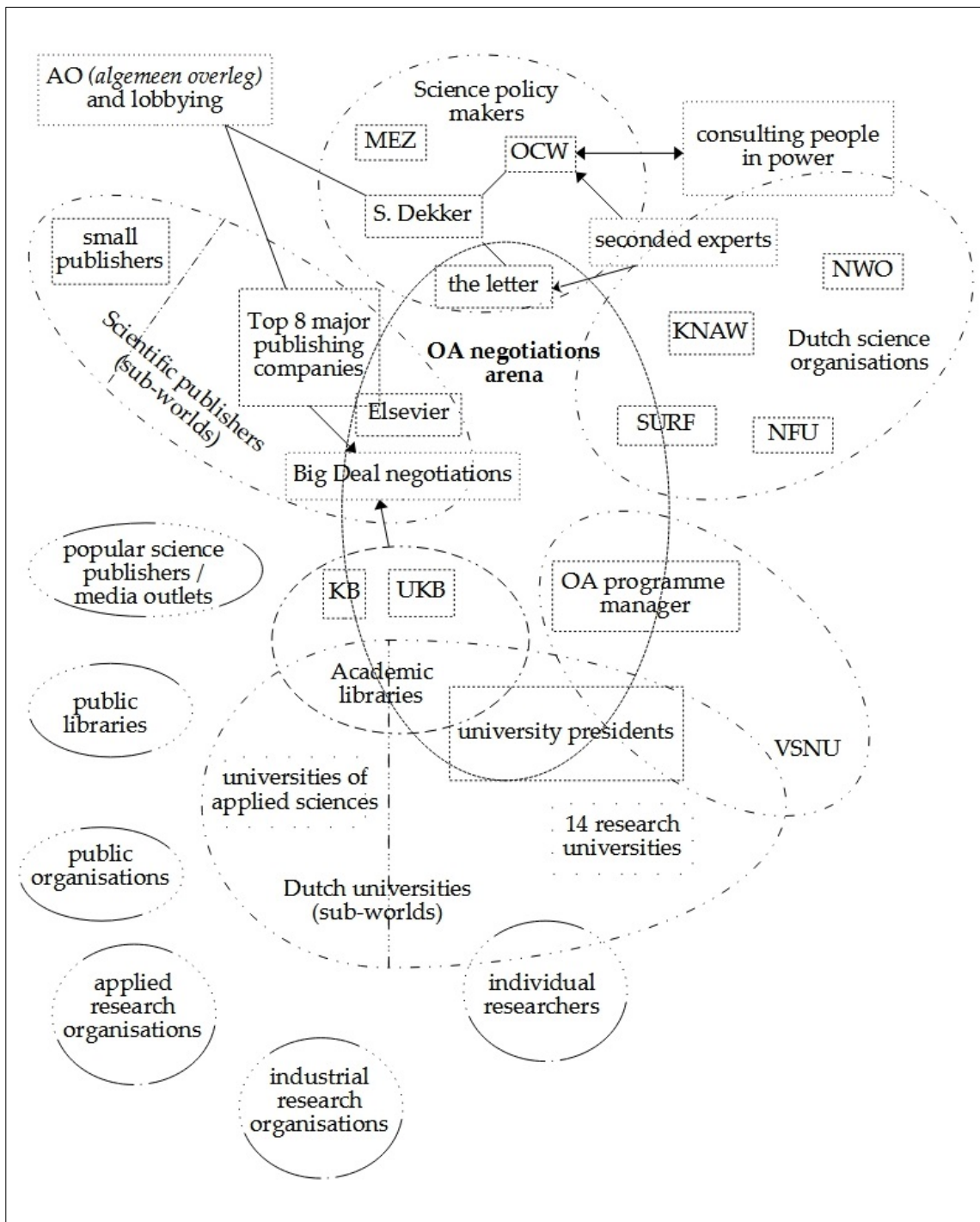


Figure 8: Social worlds/arenas map: Open Access negotiations in the Netherlands (2013–2015)

At centre stage of the map in Figure 8 are the key social worlds or all major (collective) actors and actants (Clarke, 2005) that were present and active in the Open Access negotiations in the Netherlands. Starting from the top, we find *science policy-makers* such as the state secretary Dekker, his staff at the OCW ministry, and their colleagues at the Ministry of Economic Affairs (Ministerie van Economische Zaken, in Dutch; here abbreviated as MEZ). The interactions of science policy-makers with other social worlds include consulting the opinion of “people in power in [the]

science system” [int_16:136] at *Dutch science organisations* such as the NWO, the KNAW, and the NFU. This social world further contributed to the work of science policy-makers by temporarily seconding their staff as experts to help write the letter for Sander Dekker. The letter itself is also visualised as a major actant on this map.

The social world of non-university and other Dutch science organisations also includes SURF, a cooperative organisation set up by higher education and research institutions that takes care of inter-institutional matters in developing their ICT infrastructure and used to provide administrative and legal support in Big Deals negotiations. Moving down clockwise, we encounter the university association VSNU with a dedicated programme manager and presidents of 14 Dutch research universities who took up the leading role in subsequent negotiations. While the latter firmly established their place at the negotiating table, representatives from universities of applied sciences were not invited to join forces with their peers. Therefore, this sub-world of Dutch universities is largely positioned outside of the Open Access negotiations arena as a figurative negotiating table in the middle of the map.

Then, moving towards the upper left, are *academic libraries* as part of both types of *Dutch universities*, and who entered the negotiation stage formally organised under the roof of UKB. Because adjusting their regular Big Deals with major scientific publishers had been chosen as the core mechanism to implement the goals set in Dekker’s letter (OCW, 2014), VSNU decided to conduct high-level negotiations with the *top 8 publishing companies* like Elsevier (VSNU, 2016a). Similarly to the sub-world of universities of applied sciences, smaller Dutch and international publishers were excluded from these high-level negotiations. Instead, academic libraries continued to sign agreements with them on a case-by-case basis as before. The interactions between the social worlds of scientific publishers and science policy-makers, such as the presence of the former during the general parliamentary consultations (AO) in late 2013, are further visualised on this map.

Lastly, there were several social worlds that were explicitly named in the letter or elsewhere in empirical materials, but were not actively involved or otherwise represented in the Open Access negotiations in the Netherlands. These concern *individual researchers*, on whose behalf the VSNU-lead negotiations were said to be conducted, and whose publishing activities they claimed to support first and foremost. Except for consulting some (medical) faculties for the selection of applicable journals and limiting their representation to a few university presidents, themselves usually former or current researchers, individual researchers and their professional networks were absent in related discussions.¹³¹ Similarly to some empirical examples discussed by Clarke (2005), these social worlds were implicitly present but not active in this arena. This also applies to *industrial research organisations* with extensive R&D activities, a significant subscriber to scientific

131 One could think, for example, of the PNN network which represents the interests of PhD candidates in the Netherlands and acts as an interlocutor for other organisations, including on issues related to Open Access and Open Science. Or the “Science in Transition” initiative that was started in 2013 by biomedical researchers and aimed to reform research communication and evaluation. See <https://hetpnn.nl/en/> [last checked on 19/02/2022] and Miedema (2022).

journals, according to the publishers, as well as *applied research organisations* outside the university landscape, whose roles and potential interests in the present and future of academic publishing were not discussed in the Open Access transition plans. Moreover, while various societal and professional groups such as teachers, doctors, patients, and knowledge workers at public authorities or small and medium enterprises were projected as the main beneficiaries of the widespread free access to scholarly literature (OCW, 2014), no *public organisation* such as, for instance, a patients' association or a local non-governmental organisation, was involved or consulted about their views or needs in this respect.

The list of absent social worlds can be further continued with some other neglected collective actors. Most notably, these include *public libraries*, which arguably already serve as an important missing link for connecting scholarly literature with readers outside academia and which could have been assigned a more active role for improving access to scientific knowledge and publications. Similar arguments can be made about *popular science publishers*, (mass) media outlets, and journalists as actual and/or potential multipliers for disseminating research results and translating them into a comprehensible and easily understandable manner. Remarkably, weekend editions of some Dutch newspapers were reportedly utilised by the VSNU itself as an effective channel to inform the broader public about ongoing negotiations and to put more pressure on Elsevier in this way. However, the possible roles of the actors in science journalism and science communication for increasing the uptake of research results, one of the main declared goals in Dekker's letter (OCW, 2014), didn't receive further attention from policy- or decision-makers.

Instead, all of the social worlds in the bottom left corner on the map above, as well as those sub-worlds that are visually placed outside the Open Access negotiations arena, can be compared to what Clarke (2005, p. 122) has called "implicated actors". As Clarke and Star explain:

"There are at least two kinds of implicated actors. First are those who are physically present but are generally silenced/ignored/made invisible by those in power in the social world or arena (Christensen & Casper, 2000; Star & Strauss, 1999). Second are those implicated actors *not* physically present in a given social world but solely discursively constructed and discursively present; they are conceived, represented, and perhaps targeted by the work of arena participants" (Clarke & Star, 2008, p. 119; emphasis in original).

A good example of the first kind of implicated actors were all remaining scholarly publishers except for the eight major publishing companies prioritised by the VSNU (2016). Given the rich centuries-long history of (science) publishing in the Netherlands (Andriess, 2008; Daling, 2011), including renowned Dutch-based academic publishing houses such as Brill¹³², it is surprising that these actors were completely excluded from the Open Access negotiations prompted by Dekker's letter (OCW, 2014). What is more, VSNU's member universities appear to have acquired considerable experience in the professional organisation of publishing processes on their own, as attested by the existence of university presses such as Amsterdam University Press or Leiden

132 See <https://brill.com/page/AboutMain/about> [last checked on 19/02/2022].

University Press. Even though these home-grown publishers at Dutch universities also run dedicated Open Access publishing programmes¹³³ themselves, this expertise with relation to estimating the publishing costs for academic journals or related matters in the envisioned Open Access transition did not attract particular attention in the subsequent negotiations. On the contrary, their attempts to get a seat at the negotiating table were largely ignored during the observed period.

As for the other kind of implicated actors that were solely discursively present in the Open Access negotiations and the social worlds/arenas map above, various societal groups that were portrayed as the main beneficiaries and future users of scientific publications immediately come to mind. Drawing on a number of ethnographic studies, Clarke and Star (2008) note that users and consumers of given technologies are often classic examples of implicated actors. As the authors remark further:

“Neither kind of implicated actor is actively involved in the actual negotiations of self-representation in the social world or arena, nor are their thoughts or opinions or identities explored or sought out by other actors through any openly empirical mode of inquiry (such as asking them questions)” (Clarke & Star, 2008, p. 119).

Therefore, the “analytical question here is who is discursively constructing what, how, and why?” (ibid.). Moreover, in the present empirical case, potential users and professionals outside academia were continuously talked *about*, but not *with*. Yet, one could ask, do they actually need (more) access to scientific publications? Or were the actual barriers for “accessing” scientific knowledge possibly located elsewhere? This argument goes in a similar direction as the critique expressed by some interviewed researchers, who argued that communicating research results to practitioners and non-academic publics would require different language and publication formats than simply removing paywalls to PDFs of the articles in international scientific journals (see sub-chapter 9.2.2 *Contesting usefulness of Open Access*). Thus, this observation suggests that such implicated, yet only discursively present actors were actually “constructed by others for their own purposes” (Clarke & Montini, 1993, cited in Clarke, 2005, p. 46).

Furthermore, when interrogating the empirical data and emerging analytical observations through the social worlds framework, it is important to consider its particular capacity to capture and its attentiveness “to situatedness and contingency, history and fluidity, and commitment and change” (Clarke & Star, 2008, p. 113). It teaches us that implicated actors “are rarely given active voice and participation in the production of authoritative knowledge”, such as in the case of “lay” actors in medical arenas analysed by Clarke (2005, p. 122). Under certain conditions, however, they “can become collective and agentic actors” and change the dynamics in a given arena (ibid.). By analogy, should groups propagating alternative Open Access visions and publishing models become increasingly common, they could considerably affect the power relations between social worlds in the Open Access negotiations arena. Therefore, the map presented above, as well, should

133 See, for instance, <https://www.aup.nl/en/open-access> and <https://www.lup.nl/open-access-publishing/> [last checked on 19/02/2022].

be understood as a spatial-temporal snapshot only, where the composition of actors and the nature of their interactions is likely to shift at a different point in time and/or location (or even analytical perspective).

Finally, when analysing a situation of inquiry with the help of the social worlds framework, it is important to remember that “people typically participate in a number of social worlds simultaneously” (Clarke & Star, 2008, p. 118). Therefore, the boundaries between social worlds are usually porous (Clarke, 2005) and do not necessarily coincide with those of formal organisations (Clarke & Star, 2008). Moreover, in the interest of shared goals, individuals and collectivities can temporarily “set their differences aside” and cooperate without consensus (Clarke & Star, 2008, p. 125). This is also characteristic of the many (self-)contradictions and ambivalent positions encountered on the side of the VSNU negotiation team, whose members acted resolutely in a unified manner in public accounts and vis-à-vis major publishers, but expressed widely varying opinions in individual interviews.

At the same time, while social worlds are composed of individual actors, in arenas these actors commonly act as representatives of their respective social worlds, performing their collective identities (Clarke, 2005; Clarke & Star, 2008). Referring to Strauss (1982), Clarke and Star (2008, p. 118; emphasis in original) further note:

“Activities within all social worlds and arenas include establishing and maintaining perceptible *boundaries* between worlds and gaining social *legitimation* for the world itself. Indeed, the very history of the social world is commonly constructed or reconstructed in discursive processes.”

As already illustrated earlier with some interview excerpts, drawing boundaries between social worlds was clearly evident on numerous occasions in interviews with the designers of the VSNU-Elsevier agreement. It was actually one of the most striking features and a distinct ethnographic moment (Strathern, 1999, cited in Stubbe, 2015) in the empirical fieldwork for this case study. Being aware of and responsive to such a dual relationship with one’s ethnographic field (ibid.) closely resembles Charmaz’s (2006) advice to follow one’s own hunches when collecting and analysing data, and to test them against emerging analytical ideas for constructing Grounded Theory. In order to productively use this moment of (self-)reflexivity, another sensitizing concept suggested in the conceptual toolbox for the social worlds/arenas framework (Clarke, 2005; Clarke & Star, 2008) comes to the fore. Namely, the “boundary objects” developed by Star and Griesemer (1989) “for things that exist at junctures where varied social worlds meet in an arena of mutual concern” (Clarke & Star, 2008, p. 121). As Clarke and Star (ibid., emphasis in original) explain in more detail:

“Boundary objects are often very important to many or most of the social worlds involved and hence can be sites of intense controversy and competition for the power to define them. The distinctive translations used *within* different worlds for their own purposes also enable boundary objects to facilitate cooperation without consensus.”

Given the diversity of the social worlds in this case, their interests and personal involvement in the

Open Access negotiations arena, as well as partially opposite views within them – especially with regard to the Green and Golden roads to Open Access and their implementation models – I propose that the concept and practice of Open Access itself can be considered a *boundary object*. Such a conceptualisation of Open Access was also suggested by Samuel Moore (2017), who discussed different meanings, motivations, and values associated with openness in scholarly communication and dissemination. In his own words:

“If we accept that openness is a concept describing multiple approaches, and we also accept that open access itself has a number of individual motivations and understandings ... then it is best conceptualised as a boundary object. This means that open access resonates differently within individual communities of practice, not just within disciplinary communities but cross-disciplinary interest groups or those sharing a common methodology (or any community of practice, for that matter). It also allows OA [open access] advocates to share a common language despite not having a common vision or explicit shared understanding of what they are advocating” (Moore, 2017, para. 37).

Compared to the translation processes as conceived by scholars like Latour, Callon, and Law, Star and Griesemer (1989) argue, a boundary object is characterised by interpretive flexibility and needs to be continuously adjusted or translated in order to suit the local circumstances and situations. The emphasis here is being put on the basic social process of translation that takes place *within* social worlds (as opposed to just *between* social worlds), which “allows boundary objects to be (re)constructed to meet the specific needs or demands placed on [them] by the different worlds involved” (Star, 1989, cited in Clarke & Star, 2008, p. 121). In this regard, Star and Griesemer (1989, p. 390) criticise translation in actor-network theory as a kind of “funnelling”, where concerns of key actors are reframed and mediated into a narrower passage point. However, as they continue, such a storytelling necessarily contains a (managerial) bias of a single viewpoint, and fails to capture many-to-many interactions and negotiations with several allies – the way in which how translations are understood in terms of the boundary objects (*ibid.*).

To recall some previous thesis chapters, I have built substantially upon the sociology of translation as proposed by Callon (1986) to show how Big Deals enhanced with Open Access publishing components have become an obligatory passage point in the Dutch Open Access transition plan (see particularly 7.3 *The four moments of translation in the Dutch Open Access story*). In this case, such novel agreements between Dutch universities and major scientific publishers were indeed established as a sole obligatory passage point in the face of the targets and measures prescribed in Dekker’s letter (OCW, 2014). Yet in the intersections of social worlds in the Open Access negotiations arena, how “Open Access” was described by different actors, and what aspects it entailed, resulted in a heterogeneous set of understandings with substantial variations between them. For these reasons, I hold on to conceptualising the very idea of Open Access as a boundary object.

Drawing on the definition of boundary objects once again, Star and Griesemer (1989, p. 393) propose that:

“Boundary objects are objects which are both plastic enough to adapt to local needs and the constraints of the several parties employing them, yet robust enough to maintain a common identity across sites. They are weakly structured in common use, and become strongly structured in individual site use. These objects may be abstract or concrete. They have different meanings in different social worlds but their structure is common enough to more than one world to make the recognizable, a means of translation. The creation and management of boundary objects is a key process in developing and maintaining coherence across intersecting social worlds.”

As commented by Moore (2017, para. 37), arguments over the *correct* definition of Open Access and how an “open” way of publishing should be pursued are well-known issues in this area. But boundary objects themselves “do not escape the kinds of hegemonic struggles between perspectives” (Huvila, 2011, cited in Moore, 2017, para. 37). This plasticity and the flexible structure of boundary objects vis-à-vis different communities or social worlds is precisely what makes them a valuable and powerful (analytical) resource. Therefore, as Clarke and Star (2008, p. 121) summarise, “the study of boundary objects can be an important pathway into complicated situations, allowing the analyst to study the different participants through their distinctive relations with and discourses about the specific boundary object in question”.

To continue pursuing this pathway, on the following pages of this chapter I will return to the overarching aim of inverting infrastructural relations. More specifically, I will compare how changes in infrastructural components under the predominant subscription-based and the projected Open Access mode of academic publishing have affected infrastructural relations between their main actors. In light of the still ongoing negotiations in the Netherlands (and elsewhere), I will also take a closer look at further potential implications of the envisioned Open Access transition as these start to emerge. For this purpose, I will complement the overall theoretical framing of seeing such negotiations as an attempt of (re-)infrastructuring academic publishing with some additional conceptual-analytical twists, where suitable.

10.5 Moving from changes in infrastructural components to infrastructural relations

Infrastructural inversion, as Karasti and Blomberg (2018, p. 250) note, “is a conceptually based notion with methodological consequences”. Instead of focusing on the activities that a given infrastructure invisibly supports, it steers our attention to the work practices that warrant the very functioning of that infrastructure (ibid., p. 251). It further builds on the fundamentally relational view of infrastructures as connected to particular situated activities. As explained by Simonsen et al. (2020, p. 118):

“[The sociotechnical imbrication of (information) infrastructure] focuses on the ‘when’ of infrastructure, that is, highlighting that a functioning infrastructure is a fragile achievement in which multiple relations become aligned, rather than the ‘what’ of infrastructure, that is, providing a mapping of the components and operations comprising the infrastructure. In other words, the notion provides a challenge to the common ‘technology artifact’ view and puts information infrastructure forward as a contextualized, ‘sustained relation’”.

Engaging in infrastructural inversion, then, means “de-centering the artifacts and tools with which users interact to focus on the infrastructural work that builds and sustains them” (Karasti & Blomberg, 2018, p. 251). In this way, it also sharpens our attentiveness to, and recognition of, the deep interdependencies of an infrastructure’s individual technical, socio-organisational and institutional components (Mongili & Pellegrino, 2014, cited in Karasti & Blomberg, 2018, p. 251). By choosing this approach, one is encouraged to acknowledge the interplay between these components and broader forces and to gradually shift “the emphasis from changes in infrastructural components to changes in infrastructural relations” (Bowker et al. 2010, cited in Karasti & Blomberg, 2018, p. 251). Eventually, “changes in infrastructural relations become central” in one’s analysis (Star & Ruhleder, 1996, p. 113).

As discussed earlier, there are several common ways to defamiliarise a given infrastructure for this purpose. Among them, Karasti and Blomberg (2018, p. 251) suggest carefully studying “production, coordination and articulation work as well as different workarounds and backstage activities”. In this particular empirical case, the decision to upgrade the authority level in the VSNU-led Open Access negotiations appeared as a perfect entry point for performing infrastructural inversion. As I have discussed previously, the setup of the negotiation teams was re-arranged and the roles and responsibilities among their members were re-distributed. The (self-)reflexive accounts provided by the interviewees with regard to these changes, thus, served as a good opportunity to capture such explicit articulations within the negotiation team itself. From a theoretical perspective, such occasions can be retrospectively viewed as “articulation work” – a term that designates “the situated activity of meshing distributed elements of labor in cooperative work settings” (Strauss, 1985, 1988; Schmidt & Bannon, 1992, cited in Kaltenbrunner, 2015a, p. 3).

As Simonsen et al. (2020, pp. 123–124) explain, articulation work has been one of the key notions in the field of Computer Supported Cooperative Work (CSCW) and is seen as fundamental to all work. Here, it is described as “work that gets things back ‘on track’ in the face of the unexpected, and modifies action to accommodate unanticipated contingencies” (Star & Strauss, 1999, cited in Simonsen et al., 2020, p. 123). Kaltenbrunner (2015a, p. 4) points out further that articulation work is distinct from the more routinised, regular production tasks. The need for articulation work arises primarily in work settings which are characterised by inherent uncertainties and underspecified formal organisational schemes, or in situations where interests of various individual and collective actors have to be actively aligned. In this respect, the relational character of infrastructure repeatedly comes to light. Referring to pioneering contributions to infrastructure studies, Kaltenbrunner emphasises a specific theoretical meaning of infrastructure as “a relational state that obtains when actors working in different parts of a historically grown, cooperative work setting achieve a smooth coordination of their individual activities” (ibid.). In his own words, “infrastructure, we could say, is the crystallized accumulation of historical articulation work” (Kaltenbrunner, 2015a, p. 4). Or, as Star (1999, p. 387, emphasis in original) has argued, “only by describing *both* the production task and the hidden tasks of articulation, together and recursively, can we come up with a good analysis of why some systems work and others do not”.

In line with the coordination and alignment processes that this term aims to capture, the act of

modifying the setup of the negotiation teams in response to the letter of state secretary Dekker (OCW, 2014) can be viewed as a marked example of, or perhaps a result of, articulation work between various parties. Given the uncertain prospects of switching fully to Open Access by 2024, as well as the premise of renegotiating the upcoming Big Deals, it necessitated a deliberate realignment of heterogeneous interests and organisational practices by multiple directly affected parties. To get things (back) *on track* and fulfil Dekker's ambitious targets in due form and time, VSNU had to directly influence the course of events by introducing several tactical adjustments (VSNU, 2016; see also 6.2 *Pulling the strings – Setting up the negotiation stage*). At the same time, as has been already observed in the field of information technology (Subrahmanian et al., 2003, cited in Clarke & Star, 2008, p. 125, emphasis in original), changes in design and manufacturing teams can disrupt "the *modus vivendi* that the various groups had [previously] established for cooperation". What is more, this may reciprocally affect the prototypes built by such teams in terms of the boundary objects negotiated between social worlds in a given arena and may (re-)open debates about boundary objects per se (ibid.). By analogy, considering Open Access – and particularly the "Pilot Gold Open Access" agreement between VSNU and Elsevier – as a boundary object, it would come as no surprise for the interests and concerns of team members to be reflected in the solutions proposed by them.

Connected to a similar argument in the social worlds theory, the act of recasting the composition of negotiation teams in the Netherlands can be further compared with "*staged intersections*—one-shot or short-term events where multiple social worlds in a specific arena come together" (Garrety, 1998, cited in Clarke & Star, 2008, p. 120; emphasis in original). Given that the original goal set by Dekker was to accomplish an Open Access transition in ten years, or in a relatively short time span in the history of academic publishing, the job of executive negotiators at VSNU was expected to have expired by then at the latest. Yet, as Clarke and Star (2008, p. 120) note, "the key feature of staged intersections is that despite the fact that this may be a one-time-only meeting for representatives of those worlds, the events can be highly consequential for the future of all the social worlds involved, for that arena—and beyond". Related to this, changes in one social world – such as side-lining academic libraries from leading Open Access negotiations with major publishers – could be expected to possibly "cascade to other worlds through shared boundary objects" (Gal et al., 2004, cited in Clarke & Star, 2008, p. 126). That is, through the broad notion of Open Access as a shared boundary object, a sole design decision made by a small group of actors in the Netherlands may have had far-reaching cascading effects and (un-)intended consequences for a number of follow-up events. This indeed also happened in the present empirical case, when VSNU made an effort to popularise "the Dutch approach" for negotiating Open Access agreements in other European countries (see especially the map in sub-chapter 8.4 *Lost in translation, stuck in transition?*).

Therefore, although studying the changes in the setup of negotiation teams might at first appear as a "singularly unexciting" thing (Star, 1999), it opens the door for gradually exploring the "taken-for-granted and surprisingly complex relations embedded in the work practices, procedures, conventions and sociotechnical installed base" (Simonsen et al., 2020, p. 120) of the academic

publishing infrastructure. As observed by Simonsen et al. (2020), even apparently minor changes such as those meant for improving the monitoring and management of patients' fasting time before medical operations can subsequently "reveal the multiple relations connected over multiple organizational boundaries" and grow into "carrying out infrastructural inversion of the related practices" (pp. 121–122). Being sensitive to such discoveries throughout empirical observations, where the neatly aligned interplay of various teams (or disturbances thereof) becomes strikingly visible, is of great importance for carrying out an infrastructural inversion.

Following this line of thinking, I next trace some implications for infrastructural relations that were set in motion in connection with Dekker's letter and the VSNU-led Open Access negotiations in the Netherlands. While it appears quite straightforward to identify changes in infrastructural components, such as the adjustment of the next round of Big Deals with dedicated Open Access publishing quotas, to get closer to understanding the changing relations between key actors in the academic publishing infrastructure, one needs to dig deeper below the immediate surface. In instances of re-infrastructuring, this requires that we pay particular attention to the embeddedness and maturity of a given infrastructure, as well as the multiple temporal and spatial scales at which infrastructures usually operate (Grisot & Vassilakopoulou, 2017). To proceed with studying changes in infrastructural relations, in *Table 2* I first provide a brief summary of how the current or predominant journal subscription system and the new APC-based Open Access world were portrayed in Dekker's letter (OCW, 2014) and in related empirical materials. This is followed by the incorporation of additional insights derived from Grisot and Vassilakopoulou's (2017) instructive study of re-infrastructuring.

Characteristic feature	Perceptions of the conventional journal subscription system	Imaginaries of the new APC-based Open Access publishing system
Modus operandi	Bundling journal subscription packages into Big Deals between big publishers and research institutions or their consortia	Publishing all journal articles in Open Access only, by substituting journal subscriptions with publishing fees (APCs)
Participation criteria	Paywall for “pay-to-read”	Paywall for “pay-to-say”
Main narratives	Deficiencies of the old system	Promises of and expectations for the new system
Deviant points and counter-narratives	Widespread use of academic social networks and informal sharing practices, i.e. the current system is not completely “closed”	Creating new participation barriers and dividing lines between “rich” and “poor”, i.e. the new system is not completely “open”
Discursive silences	Complicity of institutional and individual actors in the status quo; close entanglement of academic publishing cultures with strong competition logics	Preserving many elements of the old system and only partially tinkering with the current academic publishing infrastructure; unwillingness to lose privileged positions

Table 2: Juxtaposing the publishing modes in the envisioned Open Access transition

As can be seen from *Table 2*, the main narratives that circulated about this envisioned new publishing mode were characterised by huge promises of and expectations for how opening access to scholarly publications in this way could help solve scientific and societal challenges. The subscription-based publishing system, in contrast, was mainly described in terms of the deficiencies that it was apparently riddled with. At the same time, any (self-)criticism towards the projected development trajectory was missing. Most importantly, this includes a foreseeable outcome in which authors (or their institutions) might find themselves divided into “rich” and “poor” classes according to their ability to afford APCs and/or acquire funds for this purpose. The worries that this new publishing regime could lead to an elitist mode of functioning and thus be not completely “open” were solely expressed in the interviews with researchers in the Netherlands. Interestingly enough, some of them were discriminated against in such VSNU-negotiated institutional Open Access prepayment agreements themselves (see sub-chapter 9.4.3 on “home-made exclusions”). Another set of deviant arguments and counter-narratives relates to the affordances brought by the advent of electronic publishing, even under the currently prevailing subscription-based mode. Here, the notorious access paywalls of scholarly journals were reportedly (and routinely) circumvented through informal sharing practices and purpose-built academic social networks. That is, the old subscription-based system was not entirely “closed”, as had often been argued.

Next, there were a number of discursive silences (Clarke, 2005) that emerged through the ensuing analysis of empirical materials. While publication pressures and fallacies in customary research assessment procedures were frequently denounced, most interviewees occupied deeply ambivalent positions when it came to changing their own practices for the better. The complicity of institutional and individual actors in the endurance of the status quo, therefore, appears as one of the original findings from my analysis of inverting infrastructural relations. This leads to another observation with respect to the envisioned new APC-based Open Access publishing mode. Despite the revolutionary rhetoric used in Dekker's letter and the like, many elements of the old-world order were to be duly preserved. Most notably, except for the need to get accustomed to swapping invoices for subscription licenses with those for APCs, the (business) relationships and financial flows were still to be arranged between multi-national publishing giants and established research institutions, represented by their libraries.

Furthermore, considerations of any truly disruptive or innovative publishing models were completely absent from these negotiations. As commented by one of the negotiators on the VSNU team: "now it is a call for action for anybody who publishes already in the system, to make that as open as possible, so that's why we started discussing gold and green [open access routes], but we are not discussing other options, not really" [int_4:151-152]. In the end, it appears, the involved parties were mostly interested in keeping their own established positions and dominance on the global (academic publishing) map, and thus engaged in only partially tinkering with the current setup of the academic publishing infrastructure. That is, as is typical to re-infrastructuring processes (Grisot & Vassilakopoulou, 2017), some parts of the existing academic publishing infrastructure had to be re-oriented in order for it to suit the new APC-based Open Access logic. On the one hand, this meant that the novel-type Open Access publishing agreements had to fit into established modes of work organisation and inter-relations between academic libraries and major scientific publishers. At the same time, a more nuanced consideration of the old and new elements in the VSNU-Elsevier negotiations on Open Access reveals several instances where a far-reaching structural change appeared to be ongoing.

First, this concerns the basic principles of the currently predominant and envisioned future working modes in the academic publishing infrastructure. Formerly, it used to gravitate around the needs of the *subscribers* and (potential) *readers* of scholarly journals who were to be supplied with access to the content, typically through large-scale subscription packages like Big Deals. In these work and information flows, the authors of scholarly journal articles were not assigned any active role. Yet in order to switch to a fully Open Access publishing mode, as desired by state secretary Dekker (OCW, 2014), this fundamental logic had to be turned upside down. Because under a new scenario, it was now the *authors* whose publishing activities were to become a central reference point in defining the multilateral relations between research institutions, their funders, and scientific publishers.

Accordingly, the new focus on the authors in this universe of interactions also generated new information needs. For instance, technical and organisational procedures had to be established to check for the institutional affiliations of Dutch researchers and their eligibility to benefit from

the pre-arranged Open Access publishing quotas. This differed substantially from previous workflows where members of a given institution were allowed to pass through access paywalls and download a copy of a journal article, if they desired. For this purpose, scientific publishers have built special dashboards where academic librarians can verify the institutional credentials claimed by the authors of submitted manuscripts. Under the new workflow, authors themselves, in turn, were now presented with a choice to opt in for an Open Access offer in their author-side manuscript processing interfaces. In this way, managing predetermined Open Access publishing allotments within VSNU-Elsevier agreements and the like has become a constituent part of implementing the envisioned Open Access transition.

However, although creating author-centred dashboards for validating their Open Access articles was a new addition and component in this process, it still had to replicate the main characteristics of subscription-oriented workflows. Here, defining the lists of applicable journals as well as the validation procedure itself essentially remained an institutional-level library–publisher interaction. Practically, existing systems were extended with a new functionality for exchanging information about submitted author manuscripts. Theoretically, refurbishing regular Big Deals with Open Access quotas meant working with embeddedness as a resource – which, in turn, comes with an advantage to facilitate a “quick deployment and circumnavigate the bootstrapping problem” (Grisot & Vassilakopoulou, 2017, p. 25). Yet at the same time it requires that university libraries collaborated with vendors who were already in place and engaged them in the design and development process, as well as dealing with their own systems and different work practices (ibid.). That is, even brand-new features in a given infrastructural arrangement cannot be addressed independently and would have to accommodate the scale and requirements of provider-controlled parts (ibid.). Or, applied to the present case, academic institutions and their funders could still find themselves *locked-in* to demands of powerful publishing vendors. Therefore, maintaining embeddedness of the old and new elements can be best viewed as both a constraint and a resource that designers of such interventions need to deal with (Grisot & Vassilakopoulou, 2017).

Research universities and their libraries needing to face such ambivalent demands was not the only paradox that I observed when examining changes in components and relations of the academic publishing infrastructure that were prompted by Dekker’s letter (OCW, 2014). Grisot and Vassilakopoulou’s conceptualisation of re-infrastructuring (2017) delivers a set of insights that can be applied to this empirical case. Namely, that designers of such interventions were inevitably charged with meeting essentially contradictory challenges – like ensuring the continuity of existing infrastructural arrangements and transforming them at the same time (ibid.). Therefore, in order for a shift from a *pay-to-read* to a *pay-to-say* principle to happen, negotiators at VSNU had to “rework well-established connections [while] ensuring a smooth transition to a novel envisioned configuration” of the academic publishing infrastructure (Grisot & Vassilakopoulou, 2017, p. 11). However, as I have shown on the previous pages, such a shift appeared to turn upside down some of the underlying logics for organising the academic publishing infrastructure and especially the work of academic libraries. Borrowing from a related body of literature, I will conclude this

empirical chapter with some additional remarks for understanding the dilemmas of engaging in (re-)infrastructuring processes in academic publishing.

10.6 Paradoxes of (re-)infrastructuring in academic publishing, or: *When is breakdown?*

To reflect on changing infrastructural relations in academic publishing, as exemplified by zooming in on the role of libraries and librarians, it is helpful to return to some of the main lessons learned from earlier re-infrastructuring studies. One of the main motivations behind the Norwegian government's eHealth initiative, as Grisot and Vassilakopoulou (2017, p. 15) note, was to "strengthen the citizen's role in healthcare by making it easier [for patients] to find and choose health providers, providing access to personal health information, and by offering services of self-service and self-help". In the established configuration of healthcare information infrastructure, related information flows were oriented to the needs of their providers. Here, healthcare staff used the electronic patient record systems to register and retrieve information about patients' consultations and other encounters in the offices of general practitioners, such as prescription messages, orders of laboratory tests, or referrals to specialists. In these communication flows, the patient was not an active participant (Grisot & Vassilakopoulou, 2017, p. 19). The introduction of the new "eDialogue" services, in turn, made it possible for patients "to register directly some of their own information and also, to receive information and act upon it" (ibid.). Their inclusion as active participants in these processes meant that the whole electronic information flow had to be re-oriented from catering to the needs of healthcare providers to those of the patients themselves (ibid., pp. 19–20).

As described above, shifting from a subscription-based to an APC-based Open Access system in academic publishing infrastructure required similar reconfigurations. While academic libraries used to service the needs of *the readers* of scholarly journal articles and other literature at their institutions, they were now asked to re-orient their organisational workflows to administer the publishing fees for *the authors* thereof. Strengthening the role of the authors and raising awareness among them about their heightened position and responsibilities was also a recognisable aim identified throughout numerous interviews with negotiators on the VSNU team. What came up repeatedly on several occasions was the strong dedication of team members to benefiting Dutch researchers by offering them better publishing conditions and remedying some of the deficiencies in the current subscription-based academic publishing system. As commented by one of the interviewed librarians: "I think making the costs transparent and the revenue streams transparent will help a lot of researchers to be more like, being proponents of open access" [int_2:283]. However, as this interviewee remarked further, "but at this time, they have really no incentive to publish open access" [int_2:284].

A hope that this might eventually change, and a certain anger about the current situation, was also perceptible in deliberations provided by a fellow librarian. In the words of this interviewee:

"The only [way], the key to get a grip on the budgets, on the costs in general, is to get these academics to start thinking about their own behaviour ... and I think, one of the

main collective actions should be within the academics themselves; they should get aware that, what they are publishing, what the publishing system costs, and they should start to think about other ways to derive impact from the work that they are publishing, and, of course, together with the boards of the universities etcetera and the system itself, *but it starts with them, it all starts with them*. They should be more aware what they are paying and why they are paying it" [int_4:117-125; emphasis added].

Ironically, then, the efforts of academic librarians and other members of the VSNU negotiation team seemed to run contrary to this objective. Instead of sensitising authors about the publishing fees that were taken over for them by their institutions, integrating the optional Open Access offer into customary manuscript processing interfaces with major publishers was aimed at making this choice as easy and as seamless as possible. Because such pilot Open Access agreements within regular Big Deals were prepaid for eligible authors, such authors were not to be burdened with settling invoices for APCs from their own budgets – nor with learning about the actual costs charged by the publishers. Indeed, it was not until the public access request submitted by a former librarian at Delft University of Technology in spring 2016 that the financial aspects of such agreements were made public (see also 8.2.3.2 *On specifics of negotiating with Elsevier*).

In terms of re-infrastructuring, if these new Open Access publishing workflows were to become embedded into researchers' existing practices and social arrangements, they would be rendered transparent and taken for granted, once again (Star & Ruhleder, 1996; Grisot & Vassilakopoulou, 2017). However, there has been incisive criticism of the tendency to overstate the invisibility of infrastructures in a mantra-like adoption of their initial conceptualisation and characteristic properties. As argued by anthropologist Brian Larkin:

"It is commonplace, seemingly obligatory, for almost any study of infrastructure to repeat Star's (1999) assertion that infrastructures are 'by definition invisible,' taken for granted, and that they only 'become visible on breakdown' (p. 380; see also Collier 2011, Elyachar 2010, Graham & Marvin 2001, Larkin 2008). But this assertion is a partial truth and, as a way of describing infrastructure as a whole, flatly untenable. Invisibility is certainly one aspect of infrastructure, but it is only one and at the extreme edge of a range of visibilities that move from unseen to grand spectacles and everything in between" (Larkin, 2013, p. 336).

Citing Carse (2012), Larkin further suggests that "all visibility is situated and what is background for one person is a daily object of concern for another" (ibid.). Therefore, the point here is not to make generic statements about the visibility or invisibility of infrastructure as an inherent condition thereof, "but to examine how (in)visibility is mobilized and why" (Larkin, 2013, p. 336). This argument goes in a similar direction as the findings from a growing body of literature on maintenance and repair (e.g., Jackson, 2014; Denis, 2019). As argued by Denis (2019, p. 284), "maintenance and repair studies help reconsider an old legacy of ANT: The opposition between breakdown (crisis, controversy) and routine (taken-for-grantedness)". Denis recommends foregrounding breakdown as laying on a continuum (Rosner & Ames, 2014, cited in Denis, 2019), and urges us to investigate things in intermediary states, instead of thinking in binary categories;

in this way, “an incredible variety of hitherto neglected objects and practices” can be brought to light (Denis, 2019, p. 284). As the author explains:

“To call this binary reading of technology into question is one of the main contributions of maintenance and repair studies. Indeed, studying maintenance and repair practices precisely consists [of] paying attention to all the overlooked situations that take place in the interstices of routine and breakdown, situations in which technologies are never completely functional and never completely broken” (Denis, 2019, p. 285).

At the same time, such warnings to bear “the relationality of breakage” (Denis, 2019, p. 286) in mind appear not so alien from Star’s own considerations. Indeed, one of her much-repeated arguments was for understanding infrastructure as a fundamentally relational and ecological concept: “it means different things to different groups and it is part of the balance of action, tools, and the built environment, inseparable from them” (Star, 1999, p. 377). In this regard, an important analytical question that was put forward by Star and Ruhleder (1996) has been to ask “when”, and not “what”, is infrastructure. In response to such thought-provoking impulses, I have largely dedicated the empirical chapter at hand to studying the role of academic librarians as maintainers of the academic publishing infrastructure (see especially my arguments in *10.2 Libraries, librarians and their shifting position in the quest for Open Access*).

In the same vein, we can continue by asking “when is breakdown?”. Throughout the VSNU-Elsevier negotiations, there have reportedly been several near-breakdowns. This happened in particular when the two delegations found themselves at an impasse with the looming risk of not renewing the next subscription agreement. In such stressing moments, as recalled by one of the interviewees, “all the libraries were prepared for the black hole” [int_4:264] with no regular access to Elsevier’s journals. Yet such “a nightmare” [int_3:279] didn’t materialise and the contract was prolonged several times afterwards, albeit often apparently at the very last minute. At the same time, a survey conducted by VSNU was said to deliver comforting results, with many consulted researchers supporting the decision to cancel the Big Deal, if necessary (see also *8.2.2.2 Who will pull the plug? Considering a no-deal situation*). Therefore, in keeping with relational tradition in infrastructure studies, we shall subsequently scrutinise *for whom* (and *of what*) would this have been a breakdown?

The mission of the maintenance workers, as Denis and Pontille (2015, cited in Denis, 2019, p. 286) note, “is to detect breaches and flaws before any breakdown can be experienced” by the users. When applied to the VSNU negotiations with major scientific publishers, the breaches to the seamless access to their journals were to be prevented before the Big Deals expired. However, in light of the widespread formal and informal sharing of electronic publications (see also *9.2.2 Contesting usefulness of Open Access*), would the users thereof indeed have suffered any serious damage with no deal? While the consequences of the cancellation could be best estimated in hindsight and in places where this indeed happened, experiences from the Swedish library consortium’s decision to break up with Elsevier have shown that researchers’ reactions were markedly ambivalent (Olsson et al., 2020). This raises a somewhat provocative follow-up question:

would cancelling the Big Deals (with or without Open Access components) primarily become a breakage for the maintainers themselves, i.e. VSNU negotiators and particularly academic librarians, who would not be able to continue their long-lasting relationships with multi-national scientific publishing companies?

This hypothetical question appears all the more plausible when considering the lessons learned from the infrastructural inversion. As Grisot and Vassilakopoulou (2017, p. 12) note, “one fundamental insight from CSCW studies is the recognition of how technology is intimately intertwined with organizational structures and work practices”. In the case of patient record systems, these were shown to be closely related to the organisational development of hospitals and the professional development of medical and other healthcare staff (Berg & Winthereik, 2003, cited in Grisot & Vassilakopoulou, 2017). The resulting technologies for the documentation and coordination of work can, thus, be said to have “co-evolved together with organizational structures, personnel’s skills and work routines” (Grisot & Vassilakopoulou, 2017, p. 12). Similarly, since the introduction of Big Deals some twenty years ago, subscribing to such packages has become intimately intertwined with the organisational structures and work practices of academic libraries. In a remark about why it would have been “a nightmare” to not renew the contract with Elsevier, one of the negotiators tellingly added that “we have no experience with that” kind of situation [int_3:279].

Paying close attention to maintenance and repair work also has important consequences “for the way in which infrastructures can be questioned and analysed beyond the rhetoric of great catastrophes and collapses” (Denis, 2019, p. 285). As Denis continues further:

“Whether accomplished by dedicated workers or lay persons, made on huge technological systems or small objects, these operations, which are ‘the main means by which the constant decay of the world is held off’ (Graham & Thrift, 2007, p. 1), are indeed countless. Their close and careful examination should, therefore, considerably help refine and strengthen our understanding of the role of objects and technology in the very constitution and continuation of modern societies” (ibid., p. 286).

The dilemmas faced by the designers of the VSNU-Elsevier agreement demonstrate once again that infrastructures are not just technical objects but that they also reveal “forms of political rationality that underlie technological projects” (Larkin, 2013, p. 328). Taking up the infrastructural inversion approach, then, allows us to examine changes in infrastructural arrangements as “*the installation of a certain order* through a process by which practices and artefacts become parts of social and technological networks” (Bossen & Markussen, 2010, cited in Grisot & Vassilakopoulou, 2017, p. 11; emphasis added). What is at stake when attempting to prevent a breakdown in established relationships between a group of universities and major commercial publishing companies, therefore, “is not only the reconsideration of breakdown, but also of stability and order itself, as relational phenomena that draw on and are inscribed in specific repair and maintenance activities” (Denis, 2019, p. 287).

What is more, according to Larkin (2013), one of the most interesting aspects of studying

infrastructures is that they can potentially give rise to new social relations. By choosing to reinvent Big Deals with Open Access publishing targets as a measure to implement the envisioned Open Access transition (OCW, 2014), the designers thereof aimed at ultimately changing the publishing practices of academic authors. The authors were now increasingly expected to publish their work solely in Open Access, albeit only with the major scientific publishers. For this purpose, the inner logics of the publishing system and particularly the work of academic libraries also had to be reconfigured accordingly. Adopting the overall re-infrastructuring framework (Grisot & Vassilakopoulou, 2017) has been instrumental in uncovering how some parts of the academic publishing infrastructure had to be re-oriented according to this new logic, while others were duly preserved.

Taking up additional twists through the maintenance and repair lens helps to sharpen our understanding of “the ongoing activities by which stability (such as it is) is maintained, the subtle arts of repair by which rich and robust lives are sustained against the weight of centrifugal odds, and how sociotechnical forms and infrastructures, large and small, get not only broken but *restored*, one not-so-metaphoric brick at a time” (Jackson, 2014, p. 222; emphasis in original). At this point, we could further ask: whose livelihoods were to be eventually sustained (Callon, 1986; see also 7.2 *Learning from St. Briec Bay, or: Who are the “scallops” in the Dutch story?*), when choosing to translate the huge political ambitions to “make the Netherlands an interesting test case for other countries” in the transition to Open Access (OCW, 2014, n.p.) by way of expanding contractual agreements with multi-national publishing giants into ever bigger Big Deals?

In the end, it appears that it might be exactly these publishing giants who benefited most from such novel deals. With researchers and science policy-makers being offered the promise of publishing in “prestigious, highly-ranked journals” (OCW, 2014, n.p.), along with toll-free access to Dutch researchers’ publications across the globe, the best parts of the old and new academic publishing worlds were allegedly combined. Recalling observations made by Larkin, infrastructures are “not just technical objects ... but also operate on the level of fantasy and desire” (Larkin, 2013, p. 333; see also sub-chapter 4.2 *Seeing through the (re-)infrastructuring lens*). The resulting agreement between VSNU and Elsevier, then, can be accordingly said to encode the dreams and fantasies of Dutch negotiators and decision-makers. Quite tellingly, the announcement of the agreement was met with an Elsevier representative describing it as “essential to the Netherlands maintaining its position as one of the world’s most impactful research nations” (Terheggen, cited in VSNU, 2015c). Yet given that the Open Access publishing quotas that were prepaid for eligible researchers in the Netherlands in 2016–2018 were not fully exhausted, it is tempting to say that major scientific publishers like Elsevier have managed to capitalise precisely on such desires. What happened next in the aftermath of the VSNU-Elsevier negotiations will be summarised shortly in the next chapter.

11. Epilogue: A post-script on the aftermath of the initial VSNU-Elsevier negotiations

In introducing this empirical case study, I dedicated a whole chapter to explaining the significance of state secretary Dekker's letter (OCW, 2014) for the unfolding of the Dutch Open Access story. Because of the ambitious targets that were announced therein, along with the provisions on how to fulfil them, this letter has substantially affected the course of events and particularly the negotiations on Big Deals with major scientific publishing companies in the Netherlands and beyond. In one of its e-zines, the VSNU itself described this letter as a "starting shot" for expediting the progression of Open Access at that time:

"State Secretary Dekker of the Ministry of Education, Culture and Science (OCW) has fired the starting shot in connection with open access. Dekker's aim is that in 2024, 100% of Dutch scientific publications will be open access. In the council conclusions of the European ministers in connection with the Dutch presidency of the EU, an agreement was even reached that open access should become standard at the European level by 2020" (VSNU, 2017, p. 3).

With considerable confidence in accomplishing these aims, and after reviewing some of the latest news, VSNU enthusiastically asserted to its readers that it was moving "full steam ahead": "The train has left the station and we are on a clear course to achieving State Secretary Dekker's goal. There is no going back now!" (ibid., p. 4).

For these reasons, it was quite straightforward to single out the delivery of this document to the Dutch parliament in late 2013 as a starting point for my empirical analyses, as well as to do further background research into its genesis (see, for more details, *7.1 Taking the letter as a starting point of this empirical case study*). Yet making a decision on when and where to conclude my own observation period and the scope of this empirical study appeared to be less clear cut. For one, I am well aware of the highly dynamic pace in this area and the impossibility of capturing all, albeit intriguing, facets in related debates and developments. At the same time, there have been several notable occurrences that seemed to demand additional attention or at least a brief mention before moving on to the final discussion. In what follows, I will therefore provide a short update on some salient events in the aftermath of the initial VSNU-Elsevier negotiations.

To start with, I shall briefly recall the most important milestones in the timeline covered in this case study. In reaction to Dekker's letter, in mid-2014 the VSNU had started negotiating with selected publishers on prolonging Big Deal agreements with dedicated Open Access components. After several phases of being reportedly stuck at an impasse and a deadlock, the university association announced that a "constructive turn" had been reached in negotiations with Elsevier in late 2015. This was followed by an agreement in principle shortly before Christmas in that year and was crowned by the signing of a new three-year contract valid for 2016–2018. Although the details on the list of applicable journals for a pilot Open Access publishing amendment and other

remaining particularities were finalised only in March of 2016, this agreement between Dutch universities and the scientific publisher Elsevier came into force retrospectively from January 2016 onwards.

I was able to conduct individual interviews with numerous members of both negotiation teams (see also chapter 3. *Materials and methods*). Most of these interviews took place in autumn of 2016 and spring of 2017. That is, at a stage when memories of the tedious negotiations were still vivid, but enough time had passed to allow interviewees to look back and reflect on past events from some distance. Moreover, given that at this point in time the 2016–2018 agreement was well into and shortly after its first year, the interviewees could also take into account some of the results and observations on the uptake thereof among researchers in the Netherlands. With the benefit of hindsight (Akrich, 1992), I have likewise gained new insights from analysing the situation of inquiry in light of the rapidly evolving academic publishing landscape in the Netherlands and elsewhere, as well as the sometimes surprising turns in its development trajectories.

One such surprise relates to the multiple early resignations that took place from the negotiation team on the VSNU side. Most notably, as communicated in the VSNU e-zine in the beginning of 2017, the president of the executive board of Radboud University Nijmegen and chief negotiator for the agreement with Elsevier, Gerard Meijer, was about to bid adieu to the Netherlands. The readers were informed that, “starting in 2017, a new team will be conducting these negotiations [with eight major publishers]; Tim van der Hagen (TU Delft) will be taking over the role of negotiator from Gerard Meijer” (VSNU, 2017, p. 5). A little further on, a short interview with Meijer was added. There, it reported that he was “returning to the Max Planck Society's Fritz Haber Institute in Berlin, the home base where he first acquired the knowledge and experience that inspired his efforts on behalf of the VSNU during the recent Dutch open access discussions and negotiations” (ibid., p. 16). However, the experiences he had gathered over the past years were not to be lost entirely. As this article concluded:

“With Meijer now heading home to Berlin, he will be back in the setting that made him an advocate for open access in the first place. But that’s not all. ‘I’ll soon be representing the German institutions in negotiations, so I’ll be sitting down opposite the same publishers all over again...” (VSNU, 2017, p. 17).

Indeed, the “Projekt DEAL”, an undertaking of the German Rectors’ Conference “to negotiate nationwide transformative ‘publish and read’ agreements with the largest commercial publishers of scholarly journals on behalf of all German academic institutions”, had commenced its talks with Elsevier in 2016; Gerard Meijer joined its efforts as a member of the negotiation team and also became its deputy spokesperson.¹³⁴ Yet unlike in the Dutch case, numerous institutions in Germany have been “cut off” from accessing new content in Elsevier’s journals as a result of not prolonging their contracts, and no formal negotiations have taken place since August of 2019.¹³⁵

134 See <https://www.projekt-deal.de/about-deal/> [last checked on 26/03/2022].

135 See <https://www.projekt-deal.de/elsevier-news/> [last checked on 26/03/2022].

The resignation of Meijer from the executive board of Radboud University in Nijmegen and consequently from representing it at VSNU, including Dutch Open Access negotiations, came earlier than initially planned. In a number of interviews given for the *Vox*, a magazine of Radboud University, one can read about the reasons Meijer provided for this decision. For instance, when announcing his withdrawal in September 2016 it reported that “Gerard Meijer does not feel obligated to stay in Nijmegen longer – his contract was for six years. ‘I feel like I can leave after four years’” (Haverkamp, 2016, n.p.). Here and in other interviews, he repeatedly stressed that he had realised “that my heart was in research rather than management” (Haverkamp, 2017, n.p.).

In this regard, a certain disappointment was clearly noticeable, especially in an interview published on the day of Meijer’s departure. When asked about engaging with “The Hague politics” during his tenure in Nijmegen, Meijer explained: “Thanks to the negotiations on behalf of the universities with Elsevier regarding Open Access, I built a solid contact network, for example with State Secretary Sander Dekker. ... It’s not my world, though. Politicians often have a double agenda, and they are not always honest” (Haverkamp, 2017, n.p.). Such encounters with state secretary Dekker were further highlighted among the most incisive moments in the career of Gerard Meijer as president of the executive board. As Meijer elucidated himself (cited in Haverkamp, 2017, n.p.):

“One example was my interaction with Sander Dekker. He did a lot to promote Open Access. Later it turned out he was prepared to let the Ministry of Economic Affairs sign the new NWO law. I let him know that I disagreed on principle and that I thought it essential that this should remain a matter for the Ministry of Education, Culture and Science, but he simply ignored my objections. He even wanted to send a quick letter on valorisation policy to the House of Representatives. It was only then that I understood that he was trying to position himself as the next Minister of Economic Affairs, and that he was prepared to sacrifice the crown jewels of his current ministry to do so. That was one of those moments when I thought: I don’t want to have anything to do with this; just as well I’m going back to research. At least there I understand what’s going on”.

Yet instead of becoming the next Minister of Economic Affairs, Sander Dekker emerged as Minister for Legal Protection at the Ministry of Justice and Security during the third cabinet of Prime Minister Mark Rutte from October 2017 until January 2022.¹³⁶ In an interview with the Dutch newspaper “*De Telegraaf*”, he commented that he would not return to this position in the subsequent fourth Rutte cabinet and had decided that it was time to leave big politics “for something different”.¹³⁷

To continue with these remarkable occupational changes, another series of resignations stands out. As reported in the VSNU e-zine in spring of 2018, its Open Access programme management was also to be reshuffled. On the final pages of this electronic magazine, it was briefly stated:

136 See https://en.wikipedia.org/wiki/Third_Rutte_cabinet [last checked on 26/03/2022].

137 See <https://www.telegraaf.nl/nieuws/1091005094/minister-sander-dekker-keert-niet-terug-in-rutte-iv-tijd-voor-iets-anders> [last checked on 26/03/2022].

“The project organisation will be directly managed by the General Board of the VSNU, with a great deal of support from experts in the field. This is the same organisation in which Robert van der Vooren established the original open access strategy, which will be continued by the new project manager Wilma van Wezenbeek over the next two years” (VSNU, 2018, p. 17).

Although no plans to leave early were outlined in the interview with the former project manager for this case study, it seemed that VSNU was attempting to begin afresh with Open Access negotiations. However, the new Open Access project manager also appeared to have quit this job earlier than initially planned. In February of 2019, just one year later, VSNU’s Newsletter open access No. 47 announced that the university association was “aiming to strengthen the already close links between open access and open science. From 1 March [of 2019], Darco Jansen will be the new programme manager for open access and open science. He is taking over from Wilma van Wezenbeek” (VSNU, 2018, n.p.). Subsequently, yet another programme manager has been in office since.¹³⁸ The reasoning provided by VSNU points at another change and shift in the focus for advancing the Open Access agenda. Before proceeding with a closer look at reframing Open Access publishing within the broader realm of Open Science, I shall add some updates on the state of the initial VSNU-Elsevier agreement for 2016–2018.

After the parties had formally entered into the contract on 17 March 2016, it was set to expire on 31 December 2018. Yet this contract was successively amended six times.¹³⁹ First, the then-ongoing agreement on licensing and the Open Access publishing pilot was extended by six months until 30 June 2019 in order “to continue discussions”, including topics like “open science, how a new licensing agreement contributes to an aspired future open science infrastructure for the Netherlands, and the implications of Plan S” (VSNU, 2018). Then, another six-month extension was announced through 31 December 2019, in which the subscription license and the Open Access pilot were prolonged once again. According to a short news item at Elsevier, the aim of this extension was to “allow for continued explorations between Elsevier, VSNU, the Netherlands Federation of University Medical Centres (NFU) and NWO on how to work together on aspired future Dutch open science infrastructure services” (Boucherie, 2019, n.p.).

Subsequently, a joint press release was published in December 2019 stating that the Dutch research institutions VSNU, NFU, NWO and “the global information and analytics business Elsevier” have reached a “framework agreement” (Elsevier, 2019, December 19, n.p.). This agreement was said to provide Dutch researchers with full reading access to all Elsevier journals and allow unlimited Open Access publishing in its journals. In addition to these provisions, this press release announced that “a range of pilots will be undertaken to develop tools and services in support of (open) science and research intelligence” (ibid.). Eventually, after a transition period from January

138 See https://www.universiteitenvannederland.nl/en_GB/vsnu-team-detail.html/medewerker/230 [last checked on 26/03/2022].

139 The scanned original copy of the contract (with some parts blackened out) is available online at: https://www.openaccess.nl/sites/www.openaccess.nl/files/documenten/elsevier_2016-2019_fully_signed_geredigeerd.pdf [last checked on 26/03/2022].

to May 2020, an “Open Science Platform Products and Services Agreement” entered into force as of 15 May 2020. It was set to retroactively commence on 1 January 2020 and is set to continue until the end of December 2024.¹⁴⁰

This current agreement covers “Reading Services”, “Publishing Services”, and “Professional Services for Research Intelligence and Workflow”.¹⁴¹ Some examples of such professional services and possible use cases, as listed in a supplementary FAQ sheet, include aggregating and deduplicating separate CRIS systems used by research institutions, as well as interlinking research data sets in subject or domain-specific repositories that were produced by affiliated researchers from member institutes. Moreover, it is aimed at connecting Dutch research outputs with funding information about grants and funders “to allow for improved tracking / assessment of impact of funded research” and at establishing a secure health data management platform by linking Dutch health “data silos” (VSNU, 2020c, pp. 2–3). Because of this much broader scope, it was described as “not a conventional contract about licensing scholarly content” anymore, but one that “is centred around the provision of a set of services to support part of the (open) science ambitions of the Netherlands” (ibid., p. 1).

It bears mentioning that the contents of this agreement have provoked heated controversy. As Dutch online magazine ScienceGuide extensively reported on the matter, many observers were worried that Elsevier’s “unlimited” Open Access offer would come at a high price, resulting in a situation in which research-related (meta)data were to be transferred exclusively to Elsevier to fuel its data analytics business even more (De Knecht, 2019a, 2019b). Referring to a leaked internal negotiations document, one of the potential goals of the planned data pilots was cited as to “use this data to enrich and substantiate science policy” (De Knecht, 2019b, n.p.). In this regard, Sarah de Rijcke, professor of science and evaluation studies and director of the Centre for Science and Technology Studies (CWTS) at Leiden University, commented that “this deal may effectively transfer crucial means to influence Dutch science policy to private enterprise” (ibid.). In a similar vein, Gerard Meijer warned about not making the same mistake with data as had already experienced when “letting commercial publishers take over the process of academic publishing, and now we are fighting to take back what is ours” (ibid.).

Presumably in reaction to such objections, in the announcement of the framework agreement in December 2019, the negotiating parties acknowledged that “especially the development of these new services has been a cause for some concerns in the community” (Elsevier, 2019, n.p.). Therefore, in this press release, and in an accompanying Q&A sheet, a set of “rules of engagement” have been specified, which were agreed upon by the partner organisations (VSNU, 2019c, n.p.; emphasis added):

- *Interoperable*: no vendor lock in. Researchers and institutions can also use their own tools;

140 See <https://www.openaccess.nl/en/publisherdeal/elsevier-2020-2024> [last checked on 26/03/2022].

141 The scanned original copy of the contract (with some parts blackened out) is available online at: https://www.openaccess.nl/sites/www.openaccess.nl/files/documenten/countersigned_ukb_elsevier_sd_2020-2024_agreement_gereedigd.pdf [last checked on 26/03/2022].

- *Future proof*: system should be flexible to different setups and different agreements;
- *Vendor/publisher neutral*: system development is not limited to any specific vendor;
- Researchers and/or institutions *own their own research data* (not Elsevier).

In the same Q&A sheet, it was further indicated that a “working group of experts from member institutions” was set up to work out the principles and rules of engagement in more detail over the coming months (VSNU, 2019c, n.p.). The “Dutch Taskforce on Responsible Management of Research Information and Data” ensuing from this effort was then established in early 2020 and charged with addressing “issues around the responsible use of research information and the role of commercial third party providers in particular” (VSNU, 2020a, p. 1). Its tasks included reflecting under which terms and conditions “this (meta)data can be (re)used and enriched” as well as how “undesired network or platform effects” can be avoided (ibid.). According to the answers provided in the Q&A sheet, the negotiation parties behind this agreement had followed the advice of the taskforce and committed themselves to an agreed set of collaboration principles (VSNU, 2020c, p. 4).

However, in a blog post published shortly after the latest Open Science agreement with Elsevier was announced, De Rijcke (2020, n.p.), herself a member of the aforementioned taskforce, publicly questioned “how does the deal [with Elsevier] hold up when compared to our Guiding Principles?”. In the following, she shared her concerns that bundling Open Access and data services in the agreement with Elsevier could still “basically let a public infrastructure be controlled by Elsevier modules by building them in from the start” (ibid.). She further argued that Elsevier was given “an insurmountable competitive advantage in terms of access to research intelligence” and that it “would have been far more preferable if the research institutions would have first formulated general principles for collaboration with private parties, and only then had started to engage in projects and look for third-party interest” (ibid.). On a final note, De Rijcke concluded:

“I am not persuaded by the contract, and still find it disconcerting that this deal may effectively transfer crucial means to influence Dutch science policy to a monopolistic private enterprise” (De Rijcke, 2020, n.p.).

As of today, the bond that VSNU, UKB, NWO, and some other research organisations in the Netherlands have entered into with Elsevier remains effective.¹⁴² Its commencement was announced by VSNU with conspicuous pomposity as the “world’s first national Open Science partnership” with “a global leader in research publishing and information analytics”, that “includes publishing and reading services as well as the joint development of new open science services for disseminating and evaluating knowledge” (VSNU, 2020b, n.p.). With regard to its (almost) unlimited “Open Access Publishing and Reading services”, it became possible to make “95% of Dutch articles published in Elsevier journals” immediately available in Open Access through this agreement (ibid.).

142 See <https://www.elsevier.com/open-access/agreements/VSNUNL> [last checked on 26/03/2022].

As of today, such pre-arranged Open Access article quotas and their uptake among Dutch researchers have indeed increased remarkably. More precisely, the number of Open Access articles in Elsevier journals under such large-scale agreements in the Netherlands has grown from 358 in 2016 to 4462 in 2020, and 5805 in 2021.¹⁴³ The total share of Open Access (including fully Gold Open Access journals as well as hybrid and Green Open Access routes) among all scientific journal articles published by authors at Dutch universities and other research institutions increased from approximately 42% in 2016 to 73% in 2020.¹⁴⁴ More recently, 82% of peer-reviewed scientific publications were said to have appeared in Open Access in 2021.¹⁴⁵ If not exactly in line with the “commitment to 100% open access by 2020, as set out in the National Open Science Plan” (VSNU, 2018a), the latest monitoring statistics suggest that these recent agreements have helped to significantly contribute to this official goal.

Lastly, another huge controversy over Open Access publishing that erupted in the aftermath of the initial VSNU-Elsevier negotiations concerns the so-called “Plan S”. This plan was announced in September 2018 by a group of mostly European national research funders including the Dutch Research Council (NWO), the Austrian Science Fund (FWF), the Swedish Research Council FORMAS, the UK Research and Innovation, the French National Research Agency (ANR), and the Science Foundation Ireland (SFI), who were later joined by Wellcome Trust and the Bill & Melinda Gates Foundation, as well as some further charitable and international funders and research organisations.¹⁴⁶ As explained in a dedicated preamble, “Plan S was initiated by the Open Access Envoy of the European Commission and further developed by the President of Science Europe and by a group of Heads of national funding organisations. It also drew on substantial input from the Scientific Council of the European Research Council” (Schiltz, 2018, n.p.).

The “cOAlition S”, as this group of research funders has named itself, declared a target such that:

“After 1 January 2020 scientific publications on the results from research funded by public grants provided by national and European research councils and funding bodies must be published in compliant Open Access Journals or on compliant Open Access Platforms” (cOAlition S, 2018, n.p.).

In addition, it established that the “‘hybrid’ model of publishing is not compliant with the above principles” as well as that the funders “will monitor compliance and sanction non-compliance” (ibid.). Furthermore, the deliberations presented in the preamble of Plan S left no doubts about the coalition’s firm stance on the predominant academic publishing model and its objective to bring about “the complete elimination of publication paywalls in science” (Schiltz, 2018, n.p.). In their own words: “There is no longer any justification for this state of affairs to prevail and the subscription-based model of scientific publishing, including its so-called ‘hybrid’ variants, should

143 See <https://www.openaccess.nl/en/publisherdeal/elsevier-2020-2024> [last checked on 26/03/2022].

144 See <https://www.openaccess.nl/en/in-the-netherlands/monitor> [last checked on 26/03/2022].

145 See https://www.universiteitenvannederland.nl/nl_NL/nieuws-detail.html/nieuwsbericht/875-p-nederland-zet-weer-grote-stap-naar-100-open-access-nbsp-p [last checked on 31/10/2022].

146 See <https://www.coalition-s.org/organisations/> [last checked on 26/03/2022].

therefore be terminated” (ibid.).

It didn’t take long for a storm of protest to break loose from (potential) grantees of these funding agencies and other actors. One of the most noted examples includes an open letter from a number of researchers, mostly in chemistry and related fields, which was titled “Reaction of Researchers to Plan S; Too far, too risky?” (Kamerlin et al., 2018; Schneider, 2018). In their appeal to European funding agencies, academies, universities, research institutions, and decision-makers, the authors argued, among other things, that Plan S was “a serious violation of academic freedom” and posed “a serious risk that it leads to a surplus of papers of low quality/originality/newsworthiness” (Kamerlin et al., 2018, p. 2). Some other commentators further claimed that “Plan S would bar researchers from publishing in 85% of journals, including influential titles such as *Nature* and *Science*” (Else, 2018c, p. 17; emphasis in original).

While some fellow academics have responded in support of Plan S and attempted a rebuttal of “a number of highly problematic and logically fallacious statements” (FOAA, 2018, p.1) in the chemists’ above-mentioned letter, a public consultation was later launched and culminated in the initial timeline being postponed by one year to 1 January 2021 (cOAlition S, 2019a).¹⁴⁷ As a result, the hybrid subscription-based journals are now being tolerated by the funders, if solely “within a clearly defined timeframe, and only as part of transformative arrangements” and until the end of 2024 (cOAlition S, 2019b, p. 2).

To conclude this chapter, it is striking to compare the strong and emotional reactions to Plan S with the rather unexcited and pragmatic attitude of the interviewed researchers in light of the similar ambitions of state secretary Dekker to induce an Open Access transition in the Netherlands (see especially 9.3.3 *It takes (more than) two to tango: “We will just adapt” and other ambivalences*). The main difference between the two undertakings, it seems, lies precisely in the preferential treatment of hybrid journals by the latter and its friendly demeanour vis-à-vis multinational scientific publishing giants. While one of the Plan S principles states that, when assessing research outputs and making funding decisions, the funders “will value the intrinsic merit of the work and not consider the publication channel, its impact factor (or other journal metrics), or the publisher” (cOAlition S, 2019b, p. 2), in Dekker’s letter one could read rather the opposite. There, the letter rushed to state that researchers “prefer to submit their work to prestigious, highly-ranked journals”, with an allegedly “strict and reliable system of peer review” (OCW, 2014, n.p.). This was also the reasoning that underpinned the selection of measures for implementing the Dutch Open Access goals and partnering with the publishers of such journals. As for reinventing the Big Deals for this purpose, as the letter claimed, the publishers were “interested in a good business case” – and there was “no reason why that could not be a new business case based on open access publishing” (ibid.). I will now move on to some concluding observations in light of more recent events and develop my arguments further in the final discussion of the thesis.

147 I have commented on the evolution of Plan S elsewhere in more detail; see Šimukovič (2020).

12. Discussion and conclusions

12.1 Linking my research findings with the latest BOAI declaration

In the run-up to the 20th anniversary of the original BOAI declaration, and to help prepare a new set of recommendations, the BOAI steering committee has invited the global Open Access community to respond to a set of questions and to assess “the success or failure of the OA movement” (BOAI, 2022).¹⁴⁸ The comments sought included reflections on achieving the “long-term hopes or goals for OA”, beyond the mere quantitative growth of Open Access publications, as well as whether certain implementation strategies did “cause harm” (ibid.). The resulting anniversary declaration has become an incisive call to reconsider some recent developments and to abandon publishing and business models that appeared to lead astray those engaged in Open Access publishing from the original declaration’s overarching aims:

“We became increasingly clear that OA is not an end in itself, but a means to other ends, above all, to the equity, quality, usability, and sustainability of research. We must assess the growth of OA against the gains and losses for these further ends. We must pick strategies to grow OA that are consistent with these further ends and bring us steadily closer to their realization.”

More precisely, the past 20 years were said to “have sharpened our understanding of certain systemic problems. We know more today than we knew before about the harms caused by proprietary infrastructure, commercial control of research access, commercial control of research assessment indicators, journal-based research metrics, journal rankings, journal business models that exclude authors on economic grounds (just as subscription journals exclude readers on economic grounds), embargoes on repository OA, publisher exclusive rights, narrow fixation on a journal’s version of an article, and tenacious misunderstandings about different methods for providing OA itself” (BOAI, 2022, n.p.). Therefore, BOAI’s four key recommendations in 2022 focused on hosting research outputs on open, community-controlled infrastructure; reforming a research assessment and rewards system to eliminate disincentives for Open Access publications; favouring inclusive publishing and distribution channels such as Open Access repositories and non-APC journals (i.e. Green and Diamond Open Access models) and, consequently, moving away from APCs and so-called “Read-and-Publish” agreements (ibid.).

Careful readers will notice that these recommendations stand in sharp contrast with the VSNU-Elsevier agreement for 2016–2018, analysed extensively in this thesis, as well as with the latest and much broader agreement on Open Science “platform products” and services that is valid until the end of 2024 (see 11. *Epilogue*). Instead of designing interoperable and vendor-neutral systems and services as recommended by a special task force (VSNU, 2019c), and which would reflect concerns voiced by the BOAI (2022) steering committee, the current agreement was criticised as empowering a private enterprise to control crucial parts of the scholarly communication and evaluation infrastructure (De Rijcke, 2020). But we should recognize that the prior agreements,

148 See <https://eifl.net/news/boai-20th-anniversary-questions-oa-community> [last checked on 18/01/2023].

along with the VSNU-led negotiations with the other Top 8 publishers (VSNU, 2016b), have effectively channelled financial and other resources to commercial publishing giants, helping to position them as the biggest producers of Open Access publications and to entrench the APC model as a new standard among international English-language Open Access journals (Annemark, 2017; Morrison, 2017; Piwowar et al., 2018; Pölönen et al., 2021; Crawford, 2022).

In this light, reading the anniversary edition of BOAI feels like receiving a sobering intermediary diagnosis, highly seasoned with a smouldering discontent over some of the directions in which the Open Access project has travelled over the past couple of years. Taking a step back to reflect on my research findings, a chain of hitherto failed attempts to transform the academic publishing world towards a more open and just system runs like a common thread throughout the history of Open Access. It ranges (at least) from Stevan Harnad's "subversive proposal" in June 1994, in which he urged all scholars to systematically share their online preprints, to the visionary declaration of BOAI in early 2002, to protests such as "The Cost of Knowledge" that started in 2012, or, more recently, to Plan S and various roadmaps at national and international levels that were aimed at arriving at "100% Open Access" by a certain target year. In addition, there have been numerous visions and deliberations for reforming scholarly publishing and academic work altogether (e.g., Odlyzko, 1994; Nentwich, 2001; Dryburgh, 2003; Van de Sompel et al., 2004; Hess & Ostrom, 2007; Whitworth & Friedman, 2009a, 2009b; Bailey, 1994, 2010; Bellanger & Verdicchio, 2011; Fitzpatrick, 2012; Priem & Hemminger, 2012; The Royal Society, 2012; Ottina, 2013; Kenner, 2014; Albagli et al., 2015; Bilder et al., 2015; Lagoze et al., 2015; Steinberg, 2015; Moore et al., 2016; Neylon, 2017; Taubert, 2017; Csiszar, 2018; Curry, 2018; Esposito, 2018; Bowker, 2019; European Commission, 2019; Mayer, 2019; Skinner, 2019; Caldwell, 2020; Czerniewicz, 2020; Maryl et al., 2020; Asmussen et al., 2021; Attenborough, 2021). Yet the sharing of preprints still plays only a marginal role (Piwowar et al., 2018); the work towards achieving BOAI's goals has had mixed success (BOAI 2012, 2022; Rizor & Holley, 2014; Herb, 2017); many of the protest signatories have abandoned their commitment to abstain from Elsevier journals (Heyman et al., 2016); initial Plan S principles have been partially watered down in response to reactions from some researchers and publishers (cOAlition S, 2019b); and the Open Access targets of the Dutch (and other) governments were not met by 2020 (Bosman et al., 2021).

When making an effort to interpret such results, it is tempting – at first sight – to rely on master narratives where the roles of heroes, villains, and victims are clearly distributed (Felt et al., 2007). However, while drawing upon shared narratives may provide a source of stable explanations, it usually forecloses alternative reference frameworks (ibid.; see also Czarniawska, 2004; Wittmayer et al., 2019). As observed in various science policy-making practices, such imaginaries "tacitly define the horizons of possible and acceptable action, project and impose classifications, distinguish issues from non-issues, and actors from non-actors" (Felt et al., 2007, p. 73). Therefore, as Felt and colleagues warn, if not reflected upon critically, such a shorthand meaning-making functionality of master narratives carries a huge risk of misinterpretation. Because "the once functional properties of these master narratives or myths may become dysfunctional" and inhibit "our institutional capacity or willingness to experiment with possible alternatives" (2007, pp. 74–

79).

When approaching the controversies studied in this thesis, a number of discrepancies with regard to the struggles described above, as well as disappointments at *still* unaccomplished promises and hopes, suggest that any clear-cut explanatory frame would be ill-informed or at least imprecise. In particular, the bottom line in various analyses is that an alarming process of *commodification* of the Open Access concept and practice is taking place (Nentwich, 2001; Fyfe et al., 2017; Weingart & Taubert, 2017; Neylon et al., 2019; Neff, 2020; Knöchelmann, 2021; Meagher, 2021; Kunz, 2022) and that by growing in popularity, it also “became *co-opted* by large, commercial publishers looking to profit from the success of this new approach to publishing” (Moore, 2019, p. 7; emphasis added). To illustrate this trend, it is sufficient to note that in the meanwhile, there is not only an “oligopoly of academic publishers in the digital era” (Larivière et al., 2015), but “a fast-rising oligopoly” in Open Access publishing dominated by just a few players (Rodrigues et al., 2020). As Rosângela Schwarz Rodrigues and colleagues (*ibid.*) have ascertained, the four biggest commercial publishers are currently responsible for more than 60% of the journal titles indexed in the Directory of Open Access Journals (DOAJ) with the DOAJ quality seal. Even more pressing, the remarkable concentration of ownership seems to have taken on an ever more dramatic scale when adding together the figures for Springer and its imprints – because then “we find 35% of journals and 65% of articles in just one company” (Rodrigues et al., 2020, p. 10).

Without doubt, the ability and ingenuity of big commercial publishers to adapt to – and, I would say, outmanoeuvre – increasing demands towards more “open” accessibility of scholarly literature have been very impressive. But the strategies of multi-national publishing giants wouldn’t be nearly as effective if researchers, librarians, research funders, administrators, and policy-makers didn’t come along with them. To elaborate this argument further, I argue that the same actors are *complicit* in the faltering state of affairs in the Open Access transition (BOAI, 2022). While *researchers* (and their evaluators) continue to chase JIF and conflate journal-level metrics with the quality or value of individual and institutional contributions, *librarians* continue to sign Big Deals, as of late with pre-paid Open Access publishing quotas, despite the well-known detrimental effects that distort libraries’ acquisition policies and squeeze out ever bigger shares of their budgets. *Research funders* are keen to finance staggeringly high APCs and so contribute to their inflation, instead of genuinely nurturing non-profit and community-owned publishing venues and scholarly communication infrastructures, and *policy-makers and administrators* have become hooked on quantitative scores and university rankings that tend to favour the same JIF metrics and so believe their institutions will receive higher accolades or attract brighter talents. It is thus not surprising that attempts to reform the academic publishing infrastructure have often been met with indifference or even active resistance, as exemplified, most notably, by the controversial reactions to Plan S (see 11. *Epilogue*).

Related to such observations, there are several important lessons to be learned from STS and related intellectual treasures. Most importantly, while a transition to full Open Access in scholarly publishing has been at the heart of the Open Access concept since its very inception (BOAI, 2002), over recent years, ways of implementing this idea have gone through several distinct

metamorphoses and have, at times, mutated into unexpected forms. As argued by Michel Callon with regard to the attempt to domesticate scallops in St. Brieuc Bay, the initial problematisation stage only defines “a series of negotiable hypotheses on identity, relationships and goals of the different actors. ... But this consensus and the alliances which it implies can be contested at any moment. Translation becomes treason” (1986, p. 219; see also sub-chapter 7.4 *Short interim discussion, or What is not being problematised?*). Similarly, referring to the notion of “traduction/trahison”, John Law (2006) explains that each representation or translation of an object entails both similarity and difference to it. In extreme terms, all representations can be even seen as a *betrayal* of their own object (ibid.; see also Sørensen, 2002; Pels, 2004).¹⁴⁹

When applied to the case of Open Access, it is clear that recent developments where scientific journals can now “charge authors up to €9,500 to make research papers free to read” (Else, 2020, p. 19) are increasingly distant from the BOAI’s original goal of facilitating knowledge exchange between “the rich with the poor *and* the poor with the rich” (2002, n.p.; emphasis added). More specifically, whether charged individually or pre-paid for eligible authors at selected institutions, such a transition pathway from the subscription-based to Open Access publishing of academic journals is effectively becoming a one-way road. In other words, research results can be only communicated *from the rich to the poor*, depending on one’s ability to pay for APCs. Even with the aid of different waiver programmes, such economic discrimination issues cannot be counterbalanced. As argued by Sara Rouhi of PLOS and her colleagues, “APCs have always had a potentially fatal equity issue baked into their core”, with various attempts to circumvent them ultimately failing to compensate for this drawback (Rouhi et al., 2022, p. 5). Such Open Access transition strategies, then, as actively pursued in the Netherlands and other mostly rich European countries, apparently strive primarily to strengthen the position of their own researchers, institutions, and the overall research sector, rather than to genuinely transform the research system in a more open and equitable way.

On top of that, a number of further questions need to be addressed when exploring such issues, especially with regard to the roles ascribed to major commercial publishers. Remembering a curious inquiry after one of the interviews that I conducted for the present study, I am compelled to return to the metaphor of Trojan horses used in my thesis title. More particularly, we should ask: What or who exactly has been betrayed? By whom? From which perspective(s)? One of the foundational works on Open Access had already suggested that “OA isn’t an attempt to neither to punish or undermine conventional publishers” (Suber, 2012, p. 24). Such a “publisher-friendly” stance (Hofmann, 2014), with propositions that are “deferential to the interests of subscription publishers” (Aspesi & Luong, 2014, p. 2), is even more prominent in Sander Dekker’s letter to the Dutch parliament and MPDL’s influential white paper. Quite remarkably, the declared goal at MPDL was “to *preserve* the established service levels provided by publishers that are still requested

149 In addition, by analogy to the taming of wild animals, numerous scholars have argued that new media and technologies first need to be “domesticated” or adapted by their users in order to become accepted in local settings such as households and workplaces. In light of such interactions between technologies and their users, as well as possible re- and de-domestication processes, this line of thinking stands in contrast with the linear innovation diffusion logic (see Berker et al., 2006; Sørensen, 2006).

by researchers, while redefining and reorganizing the necessary payment streams” (Schimmer et al., 2015, p. 1; emphasis added). Their proposed solution, thus, was to disrupt *only* the underlying business model, while protecting “the viability” of the established commercial journal publishing system (ibid.). To this end, all actors and especially academic libraries were urged to repurpose their acquisition budgets and to start paying for publishing in journals that had been “flipped” to an APC-based Open Access model (ibid.). Even more strikingly, similar ideas appeared in Dekker’s letter (OCW, 2014), where reinventing Big Deals with major publishers was clearly positioned as “an obligatory passage point” (Callon, 1986) for the Dutch Open Access transition (see chapter 7. *Zooming in on the micro-dynamics of the letter*).

A representative at Elsevier, in turn, commented on the discussions at that time in the following way:

“What I strongly believe is that the publishing world is a reflection of the scientific world. We are the results of what the scientific world is making. So as such it is almost like *a commercial answer to what is happening*. What you are seeing today is an evolution. Some are saying a revolution, I don’t think so; I think it’s an evolution. And changes are coming” – Stephane Berghmans (then VP Academic & Research Relations EU, Elsevier), Open Access Tage 2015, Zurich, September 2015 (emphasis added).¹⁵⁰

The creators of the OA2020 initiative that ensued from MPDL’s propositions were presumably aware of such critiques. In particular, the initiative’s FAQ list included some critical queries such as “Why not simply (re-)integrate scholarly publishing into universities and research institutions?” and “Wouldn’t converting journals to a ‘pay to publish’ model be another way of giving the big commercial publishers an opportunity to consolidate their market power?”.¹⁵¹ In this respect, the OA2020 initiators maintained the need “to reinvest” public money into the Open Access “publishing services” provided by major publishing companies (ibid.). Yet despite the early warnings to “beware of Greeks bearing gifts”, when some major publishers started to offer combined licencing deals with Open Access quotas in their hybrid journals “at no extra cost” (Frantsvåg, 2009), national Open Access strategies mostly resulted in exactly such agreements. Therefore, efforts of actors from the “scientific world” to establish Open Access with author-facing publishing fees as a new dominant publishing paradigm – among them, most prominently, the Finch report (2012), MDPL’s white paper (Schimmer et al., 2015), and VSNU’s negotiations – bring an unsettling concern to light. That is, has the idea(l) of Open Access been betrayed *from within* the ranks of its own advocates?

In the end, it appears that instead of *disempowering* major commercial publishers, as was often claimed, such agreements as those concluded by VSNU in the Netherlands have actually led to their collective *re-empowerment*. But there are more illuminating conclusions to be drawn from this thesis, and which largely result from engaging with various conceptual lenses. On the following

150 See the programme of the conference at <https://open-access-tage.de/open-access-tage-2015-zuerich> and a video recording of this talk at https://cast.switch.ch/vod/clips/1kn6m93rdb/link_box [last checked on 18/01/2023]. See also Šimukovič (2016a).

151 See https://oa2020.org/learn_more/#frequently [last checked on 18/01/2023].

pages, I will first return to my initial research questions and respond to each of them. Afterwards, I will present major lessons learned and how they might inform future work.

12.2 Getting the gist of Open Access controversies

When starting my PhD thesis, I formulated several overarching questions to help guide my research efforts (see sub-chapter 2.1 *Research questions*). In the following, I try to capture the essence from my findings. First, I asked what expectations towards science and the academic publishing system are expressed through the shift to Open Access. I have come to answer this question in the following way. On the one hand, ensuring Open Access to scholarly literature is seen as a long overdue *moral imperative* and an inherent necessity for communicating research results. Not only does much scientific research rely on public funding – entailing an obligation to inform interested publics about its outcomes – but also the advancement of scientific knowledge is itself dependent on the broadest possible examination of its claims. This argument was sometimes extended with suggestions to openly share not only conventional scholarly publications such as articles in scientific journals, but also other elements and products of academic work – such as research data, protocols, software, or teaching materials (often under the umbrella term of Open Science). On the other hand, enhancing one's own visibility and citations as compared to closed-access publications, especially under a fee-based APC regime, can be associated with self-serving interests at individual, institutional, and national levels. The taxpayer argument, which is routinely utilised in science policy justifications, is then further coupled with an *economic imperative*. That is, to increase return on investment and to benefit local R&D industries or, not least, to obtain a competitive advantage for domestic institutions in the race for a talented workforce, international students, and favourable attention from media channels and influential actors.

Second, I was interested to find out how Open Access is imagined by different actors. Although the term “Open Access” is commonly described as a new publishing paradigm and a unified movement, it is neither coherent nor homogeneous as a concept or practice. Rather, its history and latest interpretations are marked by *competing understandings* that reflect a variety of interests and personal convictions on how best to translate its goals into practice. Although such discordances seem to have been inscribed in its socio-technical fabric from the very beginning – starting with the two distinct implementation routes that were proposed by the initial BOAI (2002) and which later became known as the Green and Golden roads to Open Access – recent large-scale initiatives, such as the one examined in this thesis, build on a narrow selection of APC-based publishing models. As I argue in one of the sub-chapters (see 5.3 *The Open Access Multiple*), it is equally important to pay attention not only to the neglected colours and flavours in the wide spectrum of Open Access models, but also to examine the arguments in favour or against particular approaches. By choosing to prioritise so-called Big Deals and expand them with pre-paid Open Access publishing quotas for authors at selected institutions, efforts to transition to full Open Access in the Netherlands were modelled as continuing partnerships with the main incumbents of the publishing market. In summary, despite the often revolutionary rhetorical tone that promised to bring about a fundamental reform and to correct perceived deficiencies in the current research publishing and

evaluation regime, the mainstream initiatives have largely inherited most of the elements of the status quo. As a result, instead of destabilising the cornerstones of the academic publishing system, they seem to have preserved or even amplified the imbalances in infrastructural and power relations between the incumbent commercial publishing giants, research institutions, their libraries, and individual scholars.

Third, I inquired into the ways in which the shift to Open Access affects actual publication practices. Given the central role that publishing activities play in academic life-worlds – as a means to present research findings, to establish reputational profiles, and to support community-building processes when facilitating communication among peers, as well as the institutionalisation of emerging research fields, choosing where to publish one’s work inevitably entails various consequences. This choice largely depends on the expected match between the inner qualities of a given contribution, as well as the aspirations of its author(s), and the best suitable venue to accommodate these needs. Whether this matching effort will result in some form of Open Access publication has been mostly of *secondary importance* to the interviewed academic authors and did not seem to have affected the primary logic of their decision-making tree. Therefore, the offer to opt in for the Open Access publication as arranged under institutional publishing agreements was typically perceived as “nice to have” or just an “add-on” feature, yet not a crucial factor in itself.

However, this reasoning radically shifted when interviewees were asked to imagine a then-hypothetical scenario to publish their work solely in Open Access journals. Not only was such possible enforcement perceived as interfering with much-cherished academic freedoms, but it also raised concerns that it could trigger a variety of counterproductive effects and *adaptation strategies*. Such “what if” scenarios and future considerations ranged from new types of gaming tactics to confront research assessment exercises, shifting of formal authorship roles to comply with corresponding author eligibility requirements, choosing a comparable publishing venue from the long tail of academic journals, setting up a journal ranking according to the pricing of their APC fees, limiting one’s own publishing activities to the number of available “tokens” in publishing budgets, or even using such restrictions as an indirect censorship tool against certain disagreeable research fields or persons. What is more, many interviewees were concerned that imposing an Open-Access-only rule could create a pernicious internal pecking order between individual departments and groups at research institutions over priority rights to publish their work under an APC-based publishing regime (see chapter 9. on *Key areas of tension*). It appears, then, that rather than seeing an extensive Open Access strategy as a step in the right direction, helping to align the publishing practices with the fundamental needs of researchers, the forceful implementation of the specific pathway as chosen in the Netherlands was largely seen as being at odds with the desires of the research community.

Taken together, the aim of my main research question and the overall thesis was to seek answers to how the shift towards full Open Access is re-ordering the academic publishing system. I have come to a conclusion that large-scale (inter-)national Open Access publishing initiatives, as induced by recent science policy interventions, result in *drawing new boundaries* between the “rich” and the “poor” of the academic publishing world. While the declared objective of such initiatives

was to tear down the “paywalls” that required the readers to subscribe to academic journals, a new barrier was being erected that separated the authors into those who were *eligible* to publish their articles in Open Access under institutional prepayment agreements (or willing and able to pay the APC fee), and those who weren’t. As I have argued in this thesis (see, especially, *9.4 Key tension area IV: Ideals of openness vs. drawing boundaries*), shifting from a “pay-to-read” to a “pay-to-say” principle not only reinforces unequal knowledge production/consumption dynamics between scholars in the regions of the so-called Global North and Global South, but also generates “home-made exclusions”. That is – although this issue is mostly overlooked in contemporary Open Access debates – focusing on APC-based publishing models likewise results in marginalising poorly funded research areas locally, or anyone outside the pre-defined core in the national science systems. With the rise of bundled deals like those between VSNU-Elsevier, as well as “transformative agreements” more generally, who can have a say and, thus, who can participate in shaping the scientific discourse is increasingly defined by personal, institutional, or national economic situations. If executed further, this scenario might considerably distort research assessment principles where scholarly contributions are judged not only (largely) on their own merits, but are further skewed by the financial ability of the authors to enter the discussion stage in the first place. Such a re-distribution of privileges could ultimately lead to an unjust re-allocation of symbolic and material benefits through scholarly communication, and thus could give rise to potential new Matthew effects in the science system (Merton, 1968, 1988; Herb, 2010).

The approaches and conceptual lenses that I chose were decisive for arriving at such conclusions. As I explained in detail in chapter 3. *Working with Grounded Theory as a “theory/methods package”*, applying basic principles from constructionist Grounded Theory and Situational Analysis enabled me to productively dismantle a series of fallacies and dichotomies in my empirical analyses. Most importantly, I was sensitised to pay close attention to the “situatedness” of all claims (Clarke, 2005) and to not discredit unfitting cases as mere outliers or “residual categories” (Star & Bowker, 2007). On the contrary, it turned out to be a characteristic strength of Situational Analysis that it produces comprehensive analytical accounts that include discursive silences and marginalised actors and/or positions. Combined with my own educational and professional backgrounds in LIS and STS as well as deliberations from CSCW and infrastructure studies (Karasti & Blomberg, 2018; Karasti et al., 2018), I have come to realise that powerful attributions of “hero” and “villain” roles are inadequate to represent much messier states of affairs and the entangled interests of various actors. Without such impulses, I wouldn’t have been able to either develop my own analytical categories, such as “home-made exclusions” and academic “access bubbles”, as in chapter 9. on *Key areas of tension*, nor to turn the spotlight on the work of librarians as invisible maintainers of the academic publishing infrastructure, as in chapter 10.

At a more granular level, conceptualising the academic publishing system as a socio-technical infrastructure and approaching the controversies around Open Access publishing through the lens of infrastructure studies and re-infrastructure (Star, 1999; Grisot & Vassilakopoulou, 2017) were key to explaining the numerous paradoxes that I discovered along the way. As Susan Leigh Star (1999, p. 386) observed, the apparently “slightest small obstacle [can] often present a barrier to the

user” of a certain system. Even seemingly trivial alterations in a routine, such as “an extra button to push, another link to follow to find help, or even looking up from the screen” (ibid.) can prevent (potential) users from using the system. To give an example from this thesis, the negotiators of the VSNU-Elsevier agreement sought to build seamless workflows for the convenience of the authors of scholarly publications (such as pre-paying the APC fees in advance and asking the authors to *just* tick the right checkbox on the publishing form). Yet the same well-meaning intentions risk concealing the organisational, human, financial, and technical resources invested in such endeavours. Ironically, a much-debated issue from the library point of view with regard to the conventional journal subscription model has been the so-called serials crisis and sky-rocketing amounts of public budgets spent on institutional subscriptions (see chapter 5. *Framing the story*). The pressures on library budgets were further aggravated due to there being little knowledge of these costs among academics themselves. But striving for as convenient and invisible an Open Access publishing infrastructure as possible, instead of the old subscription-based system, appears to follow the same pattern. In this way, the new publishing infrastructure is bound to perpetuate or even exacerbate the lack of (cost) awareness among authors under this new mode, once again.

In other words, all the controversies, ambivalences, discrepancies, paradoxes, and surprises *make perfect sense* when considering attempts to reform the academic publishing system through the conceptual lens of (re-)infrastructuring. Given that infrastructures are typically characterised by their embodiment of standards as well as close links with conventions of practice (Star & Ruhleder, 1996; Star, 1999), it is obvious that they cannot be built or revolutionised overnight. Instead, changes take place in modular increments, which, in turn, need to be negotiated and adjusted in local settings (ibid.; see chapter 4.1 *Thinking with, about, and against infrastructures*). Furthermore, as I have demonstrated by applying the notion of re-infrastructuring (Grisot & Vassilakopoulou, 2017), one of the main challenges when attempting to turn an established journal subscription system towards a new APC-based Open Access publishing logic meant that its designers had to bring in novelty without harming what was in place. That is, those tasked with such objectives are inevitably trapped in *a conflict of goals*, while simultaneously having to deal with the *inertia* of the installed base (see also Kaltenbrunner, 2015b). In the end, each actor group is ready to provide a long list of excuses for their (in-)activity as well as the external pressures that they are reportedly subject to, so that “nobody is really in charge of infrastructure” (Star 1999, p. 382).

At the same time, in the empirical case study of this thesis, I encountered examples of researchers in the Netherlands who *did* think and act otherwise. These included interviewees who perceived no dilemma when choosing to publish their work in genuine Open Access venues at the alleged cost of their careers. On the contrary, sometimes they have built their entire research careers by profiling themselves as open scientists and publishing all their contributions in openly accessible and reusable formats (see 9.3 *Key tension area III: Advancement of science vs. individual careers*). What is more, such researchers were particularly sceptical about the promises of the VSNU-Elsevier agreement and have generally abstained from opting in to Open Access offers that were pre-arranged for them with major commercial publishers. By enhancing my theoretical framework with Sally Wyatt’s (2003) studies on the (non-)usage of technologies, I have come to categorise such

examples as “voluntary non-users” of the “Pilot Gold Open Access” agreement for 2016–2018 as well as to extend this analytical grid with further nuances (see 9.4.3 *Enacting closed-ness: On “home-made” exclusions and other blind spots*).

Such observations are closely related to a fundamental lesson. As I argued earlier (see sub-chapter 5.3 *The Open Access Multiple*), it is misleading to speak of a single or *the* Open Access movement, given the variety of its many sub-species and often competing implementation models or transition trajectories. Similarly, instead of insisting that there is one rightful definition of the object, John Law (2006) suggests that it is “much more interesting to trace betrayals in the practice of translation” (p. 53). This is, essentially, what this PhD thesis and particularly the empirical case study are about. By taking a spatio-temporal snapshot of Open Access negotiations in the Netherlands and examining the resulting VSNU-Elsevier agreement for 2016–2018, I have exemplified how the concept of Open Access was (re-)imagined by different actors, what expectations they attached to an Open Access transition, and how the commercially driven pathway that they have chosen could ultimately re-order the whole academic publishing world according to an economic, APC-based logic.

But there remains another nagging question that I was confronted with at a very early stage of my research. Namely, what the controversy around Open Access to scholarly publications is *a case of*. After careful consideration, I have come to the conclusion that this is a battle for control over access to scientific knowledge and, ultimately, the scholarly communication infrastructure altogether. If major scientific publishing and data analytics companies like Elsevier manage to colonise ever bigger parts of the critical scholarly communication infrastructure (Fyfe et al., 2017; Posada & Chen, 2018; Aspesi et al., 2019; De Rijcke, 2020; DFG, 2021; Kunz, 2022), they will ultimately become *indispensable* (cf. Callon, 1986) to the very functioning of scholarly publishing and academic work itself. Remembering that infrastructures “grow” embedded in other socio-technical structures and arrangements (Star & Ruhleder, 1996; Karasti & Blomberg, 2018), it would indeed be increasingly difficult to abandon such path dependencies and to build up serious alternatives. Considering that this is an area of massive economic and political dimensions, any attempts to fundamentally alter or shift paradigms in the practice of academic publishing are likely to be met with resistance from different actors who will attempt to defend their own interests and stakes.

12.3 Final remarks and suggestions for future work

At this point, I would like to connect Law’s thoughts with Janneke Adema’s suggestions for future directions of more *radical* forms of Open Access. As Adema notes, “although it is the openness of the concept of open access that brings with it a risk of uncertainty towards its (future) adaptations, it can also be seen as that which provides its potential political power” (Adema, 2014, n.p.). That is, the contingent and contextual forms of Open Access can be viewed as an invitation to experiment with and explore new institutions and practices, while simultaneously serving as “the starting point for a wider critique and interrogation of our institutions, practices, notions of authorship, the book, and publication” (ibid.). In this way, instead of attempting to direct a certain developmental

trajectory, this approach is an invitation to embrace uncertainty. In Adema's (ibid.) own words:

"Following this vision, open access should be understood not as a homogeneous project striving to become a dominant model, nor as a concept with a pre-described meaning or ideology, but as a project with an unknown outcome engaged in a continuous series of critical struggles. And this is exactly why we cannot pin down 'open' (nor radical open access) as a concept, but why we need to leave it open, open to otherness and difference, and open to adapt to different circumstances".

So (how) could it be otherwise? As we have learned from extensive historical analyses, the commercially driven operation of academic publishing is by no means an inevitable (nor continual) pathway in the evolution of scientific journals (Daling, 2011; Fyfe et al., 2017; Csiszar, 2018). But it appears that major commercial publishers have not only found ways to *live with* the quest for Open Access, but even to *profit from it* (Rizor & Holley, 2014; Annemark, 2017). At the same time, it seems equally naive to believe that a (hypothetical) publishing system dominated by non-profit scholar-led venues would be entirely trouble-free (Schlosser & Mitchell, 2019; Frantsvåg, 2021; Meagher, 2021; Dellmann et al., 2022). Instead, some version of a functional partnership might turn out to be the most sensible combination – allowing those most skilled at doing research to do so, rather than having to (re-)build scholarly communication infrastructures themselves. However, such a marriage of convenience would imply that the currently overly powerful players be *degraded* to mere service providers once again and act at eye level with scholars and their institutions, instead of imposing their own logic (Biesta, 2012). Whether such a scenario is feasible indeed remains an open question. But it seems quite clear that the roles and responsibilities will be imminently redistributed afresh in this field.

Together with key recommendations made in the latest BOAI (2022) declaration, I join the chorus of critical Open Access scholars who aim to adjust and advance the concept and practice of Open Access in line with its initial overarching goals (see, e.g., Moore, 2019; Schmidt, 2020). Therefore, these statements can be taken as my own set of suggestions for practical applications and further research on this topic (Pinfield et al., 2020). As Cameron Neylon put it to the point when he argued that researchers (and others) are not simply "hoodwinked" victims: "all choose to play the publishing game and some can choose to change it" (Neylon, 2015, n.p.; see also Fochler & De Rijcke, 2017). Through re-framing the narrative where a situated, purposeful, and self-critical understanding of Open Access becomes a better choice or the *default*, and not merely a subordinate *alternative* to the presently dominant commercial publishing models and their APC-based interpretations, the initial hopes and goals of the BOAI might eventually still be reached. But for now, the dream of Open Access instead stands as an "incomplete utopian project" (Gregory, 2000, cited in Star & Bowker, 2006), where a number of old controversies remain unsettled and new ones start to come to light.

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Appendixes

I. Project summary presented to interviewees

Project summary

Dear participants,

In this doctoral research project in the field of science and technology studies I aim to look into Open Access academic publishing as an area where expectations on science, the science system and well-working scholarly communication are formulated, tested and negotiated. How these expectations are translated into practices and lived with constitutes a further research interest.

The project is titled “Of hopes, villains and Trojan horses – Open Access academic publishing and its battlefields”. The main research questions are following:

How is Open Access academic publishing re-ordering the scientific system?

- What expectations towards the scientific system are expressed through the shift to Open Access academic publishing?
- How is Open Access imagined by different actors?
- How does Open Access affect actual publication practices?

In order to answer the research questions I aim to conduct a case study on the negotiations on Open Access between the publishers and research institutes in the Netherlands, particularly the agreement that was reached in December 2015 between the Association of Universities in the Netherlands (VSNU) and the academic publisher and scientific information provider Elsevier. The semi-structured interviews will form part of research materials and shall be conducted with main actors and institutions involved in the negotiations (phase 1) as well as Dutch researchers on the implications of the agreement in their daily practices (phase 2). Further information and a full description of the research proposal are available online at <http://hdl.handle.net/10760/29265>

In the following pages you will find an informed consent form detailing the use of the collected data as well as a preliminary questionnaire.

Thank you for your interest and I look forward to meeting you for an interview.

With best regards,

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II. Informed consent form presented to interviewees

Informed consent

By signing this form, I hereby agree to participate in an interview in the context of the doctoral research project *Of hopes, villains and Trojan horses – Open Access academic publishing and its battlefields*.

I consent to the interview to be recorded and transcribed. The audio recording and the transcript will remain with the interviewer. The collected data will be used for research purposes in this doctoral research project only.

I am aware and agree that some parts of the interview may be cited as direct or indirect quotations in the doctoral thesis and/or related publications. In this case, any personal details will be rendered anonymous to the best possible extent. Should this form of anonymity not be possible for any reason, quotations will be used after obtaining an explicit permission only. Sensitive or confidential information related to the intellectual property or market competition will not be disclosed. I will explicitly indicate this information during the interview.

I can terminate the interview at any moment without giving reasons. In this case, the interview data collected so far will be used with my explicit consent only.

Date, place

Name and signature of the interviewer

Name and signature of the interviewee

III. Questionnaire presented to interviewees (Open Access designers)

Questionnaire

for a case study on Open Access publishing in the Netherlands

1. Could you please shortly introduce your area of work / daily job. What place does Open Access take in it?
2. What goals, in your opinion, should be achieved by Open Access? Or, how would you define what Open Access is about?
3. Which implementation routes (e.g. Green, Gold, novel offsetting/partnership deals, other) would you regard as more/most suitable to achieve these goals? Why?
4. Did you or your institution participate in the negotiations on Open Access publishing in the Netherlands? In which ways?
5. How were these negotiations structured? What other actors beyond the negotiation teams did play a role?
6. What goals, in your opinion, should be achieved by such country-wide / consortia agreements?
7. Which events or circumstances, in your opinion, were important for VSNU-Elsevier agreement to be reached in December 2015?
8. Which aspects of the agreement, in your opinion, were particularly crucial or controversial points for negotiations? How happy are you with the outcomes of the agreement?
9. Could you think of different groups which would benefit to more or less extent than others from this agreement? (e.g. with regard to different research fields, geographic or economic position, personal situation, etc.)
10. The Netherlands was said to be a "test case" for other countries in negotiating Open Access publishing options. Do you think the Dutch experience could be translated to other settings or locations? What advice would give to interested parties / institutions?
11. How do you see the future of Open Access and/or academic publishing? What changes would it bring to you / your organisation?
12. Do you think there is an important aspect that I have left out, in order to understand Open Access and related negotiations better?

Disclaimer: This project receives no external funding. The author declares no conflicting interests.

IV. Questionnaire presented to interviewees (researchers)

Questionnaire

for a case study on Open Access publishing in the Netherlands

1. Could you please shortly introduce your area of work or main research questions.
2. Have you been involved in Open Access publishing as an author, a journal editor or in any other role?
3. Do you see any advantages or disadvantages of publishing one's research results in Open Access? Would it differ with regard to research fields, geographic or economic position, personal situation, etc.?
4. Have you published in Open Access under VSNU*-Elsevier agreement (starting in January 2016)? How did you decide in favour or against that?
5. Have you published in other Open Access and/or Elsevier journals? What are your experiences there?
6. Dutch government has announced a goal to reach 100% of research publications to be published in Open Access by 2024. What implications will it have for you and for other researchers in your field?
7. How, in your opinion, will scholarly communication and/or academic publishing look like in the future? What changes would it bring to your own research or publishing practices?
8. Do you think there is any other important aspect in order to understand Open Access and related issues better?

Disclaimer: This project receives no external funding. The author declares no conflicting interests.

* VSNU – Association of universities in the Netherlands (*Vereniging van universiteiten*)

Abstract

Open Access to scholarly literature has become a popular concept that rapidly catapulted onto the (European) science policy-making stage. In particular, since its inception some 20 years ago by the Budapest Open Access Initiative (BOAI), there has been an idea that the conventional subscription-based system of scientific journal publishing should be gradually replaced with free online access worldwide. Because research results reported in such publications are often paid for through public funding, suggests a common argument, broader societal groups, practitioners, and other scholars should have immediate and unrestricted access to them. However, translating this vision into practice reveals a number of varying and at times conflicting interests and goals of involved actors.

The controversies around Open Access range from the two main implementation models (the so-called Green and Golden roads to Open Access) that were initially proposed as complementary by the BOAI but have increasingly grown to be seen as competitive by their respective proponents, to more recent national and international science-policy interventions that aim to achieve 100% Open Access by a certain target year. By taking the example of negotiations between Dutch research universities and the scientific publishing company Elsevier, in this thesis I investigate how different expectations are attached to the proposed transition to full Open Access, how it has started to affect actual publication practices, and how it could ultimately re-order the whole academic publishing system according to a novel economic logic of author-side publishing fees. For this purpose, I have conducted a case study which includes interviews with negotiation team members and researchers in the Netherlands as well as Open Access monitoring statistics and other empirical materials. Building on Grounded Theory and Situational Analysis approaches as well as infrastructure studies and re-infrastructure as my overall theoretical framework, I show how controversies around Open Access can be illuminated through these lenses. In doing so, the thesis contributes to current debates by adding more nuanced perspectives and original insights.

Keywords:

Open Access; academic publishing; scholarly communication; the Netherlands; science policy; infrastructure; re-infrastructure; Grounded Theory

Zusammenfassung auf Deutsch

Offener Zugang zu wissenschaftlicher Literatur ist schnell zu einem populären Konzept avanciert, das derzeit große Aufmerksamkeit in der (europäischen) Wissenschaftspolitik genießt. Seit der Erklärung der Budapester Open Access Initiative (BOAI) vor 20 Jahren gibt es Bestrebungen, das herkömmliche Publikationssystem auf Basis kostenpflichtiger Abonnements durch freien elektronischen Zugang zu wissenschaftlichen Zeitschriften zu ersetzen. Weil viele Forschungsergebnisse, die dort veröffentlicht werden, aus öffentlicher Hand finanziert werden, so das gängige Argument, sollen andere Forschende, Fachleute aus der Praxis sowie die breitere Öffentlichkeit einen unverzüglichen und uneingeschränkten Zugang zu diesen Publikationen bekommen. Doch die Versuche, diese Vision umzusetzen, offenbaren eine Vielzahl von unterschiedlichen und teilweise widersprüchlichen Interessen und Zielen von beteiligten Parteien. Dies fängt bereits mit den zwei Implementierungsmodellen (sog. Grüner und Goldener Weg zu Open Access) an, die von BOAI ursprünglich als komplementär vorgeschlagen wurden, jedoch zunehmend in Konkurrenz zu stehen scheinen. Aber auch neuere (inter-)nationale Interventionen seitens der Wissenschaftspolitik, die die Erreichung von 100% Open Access bis zu einem bestimmten Jahr anstreben, lösen kontroverse Reaktionen aus. Aufbauend auf einem Fallbeispiel mit Verhandlungen zwischen den niederländischen Universitäten und dem Wissenschaftsverlag Elsevier gehe ich in dieser Dissertation den Fragen nach, wie an die angestrebte Open-Access-Transformation unterschiedliche Erwartungen geknüpft werden, wie sie die eigentlichen Publikationspraktiken zu beeinflussen beginnt und wie das wissenschaftliche Publikationssystem insgesamt durch neuartige Publikationsgebühren umgeordnet werden könnte. Zu diesem Zweck habe ich eine Fallstudie durchgeführt, welche Interviews mit Mitgliedern von Verhandlungsteams und Forschenden in den Niederlanden, Monitoring-Statistiken zu Open Access sowie weitere empirische Materialien inkludiert. In Anlehnung an Grounded Theory und Situationsanalyse sowie an Infrastrukturforschung und Re-Infrastrukturierung als theoretischen Rahmen zeige ich auf, wie Kontroversen um Open Access aus diesem Blickwinkel beleuchtet werden können. Dadurch trägt diese Dissertation differenziertere Perspektiven und neue Erkenntnisse zu laufenden Debatten bei.

Schlagwörter:

Open Access; offener Zugang; wissenschaftliches Publizieren; wissenschaftliche Kommunikation; Niederlande; Wissenschaftspolitik; Infrastruktur; Re-Infrastrukturierung; Grounded Theory