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Garda Elsherif

From Authority to Autopsy How Translations Reflect Changing Scientific Norms

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Abstract

This paper examines translations of books in the natural sciences into French from the sixteenth to the eighteenth centuries. Specifically, it examines the scientific reader's expectations of contemporary book translations. To that end, this study investigates review reports on manuscripts of translations submitted to the leading French institution of modern sciences—the Académie Royale des Sciences. These are compared to review reports of manuscripts of translations submitted to the Faculté de Médecine of the Paris University, which remained longer in the pre-modern attempt to preserve classical 'auctores' in translation. The comparison of the review reports reveals interesting shifts in translation norms, highlighting the demand for critical scientific translations wherein the translator, as a member of the scientific community, critically investigates and comments on the translated text.

Keywords: Translation in the scientific field, translation norms, translation and modern sciences, critical translation, translation and commentary, history of sciences

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Abstract:

This paper examines translations of books in the natural sciences into French from the sixteenth to the eighteenth centuries. Specifically, it examines the scientific reader's expectations of contemporary book translations. To that end, this study investigates review reports on manuscripts of translations submitted to the leading French institution of modern sciences—the Académie Royale des Sciences. These are compared to review reports of manuscripts of translations submitted to the Faculté de Médecine of the Paris University, which remained longer in the pre-modern attempt to preserve classical 'auctores' in translation. The comparison of the review reports reveals interesting shifts in translation norms, highlighting the demand for critical scientific translations wherein the translator, as a member of the scientific community, critically investigates and comments on the translated text.

Introduction

The role of translation in the academic field has enjoyed growing interest in translation studies and in the history of sciences since the beginning of the 2000s with studies looking at the translation of academic texts at very different times and places, investigating the many ways in which translation is *involved* in the academic field (Sarukkai 2001; Montgomery 2002), such as in generating reputations for translated or translating academic authors (Gipper & Stefanelli 2021), canonizing academic knowledge (Schögler 2018), functioning as an argument in scientific controversies (Elsherif forthcoming), transforming scientific and philosophical concepts (Heller 2019), establishing scientific and philosophical languages (Endress 1989, Singh 2022), enabling exiled scientists to connect to a foreign scientific tradition (Rozmysłowicz 2023; Schippel 2023), and educating and training early research scholars (Avkiran 2022: 270; Elsherif 2024: 241–278).

This paper aims to build on the prior research and asks for the *specificity* of translation in the "scientific system" (Luhmann 1990) or the scientific "field" (Bourdieu 1997, 1998) – in other words, the specificity of translation taking place in the *game* of sciences. This game possesses its own rules, logic, and mechanisms. The central question of this paper is how these rules and mechanisms of sciences affect the translation involved in it. This paper, thus, has a very similar concern to the recently published monograph by Schögler (2023), in which he looks at book translation in the humanities and social sciences from 1945 onwards, asking "how translation is controlled in this field [of the humanities and social sciences, G.E.] and how its control affects the social construction of translational practice" (ibid.: 15, tl. G.E.).

Unlike Schögler, however, this paper focuses on the emerging *natural* sciences¹ in France in the sixteenth, seventeenth, and eighteenth centuries. This period is noteworthy because it is in the seventeenth century that modern natural sciences slowly began to emerge and to develop own norms. This paper observes the development of these norms and asks how they influence the production of scientific book translations. In other words, this paper concerns the central question of what ideas of a 'good' and 'useful' translation existed in the (early) modern scientific system and how that idea changed from early modern to the modern scientific system. What *norms* had scientific book translations to fulfill? More precisely, what expectations were placed on scientific translations by scientific readers, and how are they related to the *logic* of the natural sciences? Accordingly, this work has two further limitations that narrow its focus in addition to being confined to the *natural* sciences. Firstly, it focuses exclusively on book translations, as the production of translations in the (early) modern scientific system is far too complex to be satisfactorily depicted in one paper. Expectations of published book translations differed from expectations of translations published in *journals*. Due to their specific and limited context of use, unpublished translations produced for internal purposes were, in turn, subject to wholly different expectations than published translations (see Elsherif 2024).² A single paper cannot do justice to this breadth of scientific translation production. Secondly, the paper focuses exclusively on the expectations of the scientific readership. By 'scientific readership,' this paper refers to all readers who perceive themselves as part of the scientific community and are perceived as such by other community members. Among them are professors and members of scientific academies, as well as practical surgeons, pharmacists, mining experts, and experimenting amateurs. It is not the institutional position that determines membership in the scientific community – instead, it is whether one is published and cited. The present analysis is limited to this scientific readership.

This raises the methodological question of how to discern what is expected of scientific book translations. Roughly speaking, there are two ways to distinguish these expectations: One can analyze statements by scientific recipients who explain through translation criticism or reviews why they think a particular translation is useful or not. Alternatively, one can go down the route of looking for regularities in translation production aided by quantitative analyses.

This paper attempts to combine both above approaches, however, with a certain focus on the first way. Primarily, the article examines review reports written in the *Faculté de Médecine* of the University of Paris (~1200–1793) and the *Académie Royale des Sciences* (officially founded in 1699).³ In both institutions,

¹ By 'natural sciences,' I refer to what was known among contemporaries as *sciences et arts*. These included the following technical and scientific fields of knowledge: Astronomy, mathematics, natural history (geology, biology), mineralogy, chemistry, pharmacy, physics, mining science, agriculture, forestry, medicine, surgery, architecture, and military science. For a more differentiated discussion of the concept of "sciences et arts," see BRET & MOERMAN (2014).

 $^{^2}$ The fact that the distinction between published and unpublished translations became a crucial one in the second half of the 18^{th} century will become clear later on in this article.

³ After the unofficial establishment of the Academy in 1666, it is not before 1699 that the Academy received their first Royal Statute. It is then that the Academy started to approbate manuscripts (including translations) prior to publication. The Academy was closed 1793 during the French Revolution and re-established in 1795 as the first of three classes of the

book translations (as well as original writings) in manuscript form could be submitted for examination to publish the translation with its approval and printing privilege. Comparing these review reports over time and considering the different social positions of both institutions in the field of sciences allows us to grasp how the emergence of the modern natural sciences came along with the emergence of specific translation norms (Toury 2012).

Second, this analysis of the review reports will be flanked (in the second half of this paper) by quantitative data analysis of a corpus of book translations into French from English, German, and Italian.⁴ These data will enable us to examine historical developments from 1600 to 1815 and consider the translation-related expectations of the mentioned institutions in a broader context.

From authority to autopsy: the epistemological ideal of modern sciences

The emergence of modern natural sciences in Europe can be traced back at least to the seventeenth century and was accompanied by a series of each interconnected linguistic, social and epistemic changes: The linguistic change is perhaps the most striking. While Latin was long regarded as the "langue naturelle" (Anonym 1649: ij) of scholarly discourse and no other language was permissible for writing down scholarly knowledge, the vernacular languages began to come into view as languages of equal value around the 16th century. The long-held belief that there was a natural hierarchy between languages was increasingly called into question, perceiving language as a *cultural* asset that could be developed and expanded through the creative use of language (see Speroni 1542; Du Bellay 1549). This shift was accompanied by the conviction that everything can be expressed in any language. The decrease of Latin and the increase of the vernacular languages in the field of sciences and philosophy was, thus, accompanied by a certain pre-assumption in language theory, i.e., the separation of res and verba (BENNETT 2011, 2024): Scholastic and Renaissance humanist scholars acquired knowledge precisely by learning Greek and Latin. Knowledge, so the assumption goes, is contained in the ancient languages themselves. In contrast, the conviction that content and linguistic form can be separated from each other and that any content can be expressed in any language became stronger in the course of early modernity, an idea of language that is particularly well represented by the Grammar of Port Royal. On the basis of such an understanding of language, translation becomes unproblematic (in the field of scholarship and sciences) and a legitimate and desirable alternative to language learning, which 'costs many years of life' - a narrative that became increasingly strong from the 16th century onwards (see again Speroni 1542, but also

Institut de France, being now a national rather than a royal institution, and re-established as independent institution in 1816. In this paper we focus on the review reports written by the Academy in the period of 1699–1815.

⁴ The corpus of French book translations from English, German, and Italian from 1600 to 1815 was compiled jointly by the sub-project *Scientific Translation in France in the Classical Age (1600–1815)* of the priority program *Early Modern Translation Cultures (1450–1800)*, which the German Research Foundation funded (see introduction in this issue). The corpus comprises all scientific book translations known to date from the languages mentioned. It enables us to make representative statements about which characteristics are identifiable and in how many translations over the span of 215 years. In this paper, I strictly distinguish between scientific book translations and those published in periodicals.

D'ALEMBERT 1866 [1750]). Although this understanding of language is often dismissed as naïve in translation studies, it must be noted that this conviction in the separation of thought and form and the potential equality of all languages was nevertheless a basic prerequisite that made the shift in scientific communication from Latin to vernacular languages possible in the first place – a linguistic shift that was itself important for the greater social inclusion into the 'game' of sciences. This brings us to the second – namely social – change that was closely related to this language change and that Edgar ZILSEL (2003 [1976]) has analyzed particularly well. Whereas in the Middle Ages and the Renaissance, scholarship was restricted to a small social circle (i.e. clergymen), in the 16th century practitioners (i.e. surgeons, architects, painters) also began to write down their knowledge. These writings and authors (such as the surgeon Ambroise Paré) were not considered part of traditional scholarship at the time (the authors were not professors at universities) and they themselves aimed their writings not primarily at scholars but at other practitioners. As both the authors and the readers did not go to schools and universities and therefore had no knowledge of Latin, these writings were written and published in vernacular languages. The shift from Latin to vernacular languages in the writing and dissemination of knowledge was thus initiated in the 16th century largely by people who were not considered scholars, either in their own perception or in the perception of others. The fact that vernacular languages came to the center of scientific communication became apparent in the 17th century with the founding of new scientific institutions in Europe (Accademia dei Lincei, Académie des Sciences, Royal Society), which each chose a vernacular language to communicate knowledge. These new institutions were an expression of a 'new' understanding of science (what we today call 'natural sciences') and were partly in a (polemical) relationship of demarcation with institutions of the 'old' classical scholarship following the Aristotelian Organon (in France primarily the universities). The designation of 'modern' sciences is thus a self-designation, while that of 'old' science is an external designation of the 'moderns', who attempt to distinguish themselves from the 'old'. This demarcation finds its clearest expression in the Querelle des Anciens et des Modernes (GIPPER 2015). What distinguished the 'modernes' most from the 'scholastici' (LUTZ-BACHMANN 2022) was their attitude towards classical antiquity. While *scholastici* (and also Renaissance humanists) regarded classical antiquity as an unsurpassable model that can and should be imitated but not surpassed, the 'moderns' argue that the ancients can and already have been surpassed. The ancients appear as important predecessors whose knowledge, however, one can build on and generate new knowledge. It is the idea of a forward-looking collectivity (i.e., subsequent scientists shall build on existing knowledge) and the idea of progress that was to become constitutive for the emerging natural sciences and which can – according to Zilsel – first be observed among the practical surgeons and architects of the 16th century. While medieval scholars aimed to *preserve* and *organize* externally generated (ancient) knowledge through the learning of ancient languages and encyclopedicclassificatory efforts (cf. Stichweh 2013: 76-77), knowledge was now to be generated by experiments in the laboratory and by observing nature itself; subsequent generations should *build on* current knowledge and develop it further. However, the concept of building upon knowledge implies a reference back to existing knowledge: its inadequacies, imperfections, and falsehoods must first be critically discerned to enable the overhaul of existing knowledge (cf. NIEMANN

2019: 62). Existing knowledge is thus not (or no longer) accepted as true without pause but is regarded as potentially false and downgraded to an opinion requiring further scrutiny.

The increased significance of criticism in the sense described above goes hand in hand with a loss of significance of authorities (cf. Löschner 2016). As Foucault (cf. 1998: 212–213) states in the essay, *What is an author?*, authorizations by reference to individual names have lost significance in the differentiation process of modern sciences from the seventeenth century onwards (unlike in literature, as one example). Whereas the authority of a person or an institution to which truth claims could be made was previously how truth claims were legitimized, it is now the approval of the scientific community that does so: experiments and theories must be presented publicly and subjected to critical scrutiny by the scientific community. With the decreased importance of authorities, the *autopsy* – seeing with one's own eyes – becomes the new ideal of knowledge. Truth claims are, thus, created through intersubjective experience: the repetition of experiments, the application of medical therapy proposals, and the repeated observation of geographical and biological occurrences – in other words, failed attempts at falsification (cf. POPPER 1963).⁵

To examine whether this loss of importance of *authority* and the simultaneous gain in the importance of autopsy as the dominant ideal of knowledge is reflected in the expectations of scientific book translations, we will now look at the available review reports on submitted manuscripts of translations of the Faculté de Médecine and compare them with the available review reports of the Académie des Sciences. The selection of these two institutions lends itself to this since in France it was particularly the universities - as representatives of classical scholarship - that were opposed to the new scientific developments (STAMBUL 2023), and that was criticized by the 'moderns' as unworldly and rigid (LUTZ-BACHMANN 2022). This was particularly true of the Faculty of Medicine of the University of Sorbonne, as it was precisely in the field of medicine that the education of 'modern' medicine was characterized by a particularly high level of controversy and debate. It is important to know that until the 18th century, 'medicine' was the theoretical study of medical authorities (especially Hippocrates and Galen) and was strictly separated from practical surgery. The fact that surgeons began to publish surgical knowledge in the vernacular languages in the 16th century was initially perceived as an affront by the Faculty of Medicine (Chatelain 2006: 200). The fact that the Faculty of Medicine remained critical of 'modern' medicine in the 18th century is evidenced by the founding of the Académie royale de Chirurgie (1731–1793) and the Société royale

⁵ With this increase in the significance of *autopsy*, the author's name does not entirely lose its relevance in the scientific field, but its function shifts from a form of authorization to an 'index of "reality" (FOUCAULT 1969: 20)—not for the truth or validity of what has been established

but for the truthful description of circumstances that determine the research result. The author becomes the 'guarantor of the text' (GENETTE 2001 [1987]: 50), assuming responsibility for having observed the facts described or for having checked the trustworthiness of the sources consulted. The reference to the author's name thus remains relevant to the extent that the author vouches for having adhered to the methodological rules of scholarship (AZZOUNI 2015: 106).

de Médecine (1778–1793), last of which names this – and the intention to strengthen 'modern' medicine – as a founding motive in its founding statues.⁶

Expectations toward translations and the differentiation of modern sciences

Fifteen review reports from the Faculty of Medicine on submitted manuscripts of translations issued in the period 1528–1749 were found. These fifteen review reports can be compared with 42 the Academy issued from 1701–1814. The comparison between the review reports of the two institutions thus also contains a diachronic perspective, as the reports of the Faculty of Medicine begin as early as the 15th century, while the reports of the Academy of Sciences all date from the 18th century. In addition, seven of the fifteen translations examined by the Faculty of Medicine (and published between 1528 and 1678) are translations from Greek into Latin. The remaining eight translations (issued between 1675 and 1649) are translations into French (one from Greek, to which we will refer again later, the others from English, German and Italian). The 42 translations of the *Académie royale des sciences* are in 37 cases from other European vernacular languages (English, German, Spanish, Italian), in two cases from contemporary Latin texts, and in three cases from ancient Greek texts (the latter three translations all appeared at the beginning of the 19th century between 1806 and 1814).

The fact that only fifteen review reports from the Faculty of Medicine will be compared to 42 review reports from the Academy of Sciences must be methodologically problematized, as this small number of review reports allows only cautious statements about the translation norms to which the Faculty adheres. At the same time, this striking difference reflects the increasing multilingualism of the scientific field from the 17^{th} century onward and the great increase in the production of translations that accompanied the development of the modern natural sciences. The high number of translations approved by the *Académie des Sciences* moreover emphasizes the role the Academy played, which acted as an important driving force behind scientific translation production in the 18^{th} century (ELSHERIF 2024).

Before we begin to analyze the review reports, it is important to work out the different institutional contexts in which they were prepared: The issued review reports in the Faculty of Medicine are part of a larger context of *authentication* and *censorship*. The reports are part of the context of *authentication*, as the Faculty has also issued certificates that certify that a certain person has produced a specific drug formulation in a specific way before their eyes and, thus, before the public.⁷ The context of *censorship* also pertains to these reports as, on March

⁶ See the document "Observations sur l'Etablissement de la Société Royale de Médecine" folder *SRM 114 d 4* in the Archives of the Academy of Medicine in Paris, where the Societies aim to "favoriser le progress de la médecine" [=to support the progress of medicine] (ibid.:2) is formulated and where they state on page 10–11: "La faculté soutient qu'elle est le seul tribunal legal en Médecine [...]. On lui repondra d'abord qu'il n'y en a point et net peut jamais y en avoir, parceque les causes des maladies étant souvent incertaines, la manière d'agir des Remèdes inconnues et les Maladies susceptibles des variations, la Médecine ne peut être soumise des jugemens déficiles." [= The faculty maintains that it is the only legal tribunal in Medicine... The first response is that there is none, and there never can be, because the causes of disease are often uncertain, the way in which remedies work is unknown, and diseases are subject to variations, so medicine cannot be subject to deficient judgments.]

⁷ For example, on May 22nd, 1670, the Faculty of Medicine issued a certificate attesting "que M. Moyse Charas, apothicaire ordinaire de M. Frère unique du Roy, a dispensé et parachevé

 2^{nd} , 1535, the French parliament issued a regulation stipulating that no book on medicine or surgery could be printed or sold by booksellers in France unless it had been examined in advance by representatives of the Faculty and found to be unproblematic (cf. Puylon 1672: 14). From 1535 onwards, the examination of manuscripts by the Faculty was obligatory—not optional. Then, the Faculty lost this authoritative status in 1701 with Jean-Paul Bignon's promulgation of a royal censorship authority, after which every new publication had to receive approval from the so-called *Censeur Royal*; the approval of the Faculty, now indicated the exceptional quality of only a few books. This return from an obligatory to an optional examination is reflected in the Faculty's review reports, which became again more detailed from 1701 onward. If not all books had to be approved by the Faculty before publication, then a more comprehensive explanation was needed to explain why one particular book deserved approval by the Faculty over others. Regarding publications approved by the *Académie des Sciences*, its approbation never fulfilled a function of censorship, so submitting one's writing to this institution was always optional. The review reports are part of a wider context of testing and proving, as review reports were drawn up for submitted original writings, translations, machine designs, or measuring instruments that could be submitted to the Academy for approval. However, in this paper, only the review reports of submitted manuscripts prior to publication are of interest. Article 30 of the Academy's Royal Statute of 1699 mentions:

L'Académie examinera les ouvrages que les académiciens se proposeront de faire imprimer; elle n'y donnera son approbation qu'après-une lecture entière faite dans les assemblées, ou du moins qu'après un examen et rapport fait par ceux que la Compagnie aura commis à cet examen.

[The academy will examine the works that the academicians propose to have printed; it will give its approval only after a complete reading in the assemblies, or at least after an examination and report made by those whom the Company will have assigned to this examination.]

Before approbating any of the submitted manuscripts, the Academy required that each manuscript be read and examined by at least two of its representatives, who then wrote a review report arguing for or against the manuscript's publication.

Criteria of approval by the Faculté de Médecine

If we first look at the fifteen examination reports of the Faculty of Medicine, it is worth distinguishing between the reception of Greek authorities (mainly Galen and Hippokrates but also Paul of Aegina) and the translation of contemporary authors. The former characterized the work of the Faculty in the $16^{\rm th}$ and $17^{\rm th}$ centuries, the latter does not appear before the end of the $17^{\rm th}$ century.⁸ As far as

en notre présence publiquement la composition de trois cents livres de Thériaque, selon la description d'Andromacus, [...]" [= M. Moyse Charas dispensed and completed in our presence the composition of three hundre pounds of Theriac, according to the description of Andromacus] (Charas 1668: 11). This practice of public demonstration and authentication can itself be regarded as characteristic for the sciences in the modern sense and highlights again that the Faculty cannot be described as strictly opposite to the modern sciences.

⁸ The first translation into French approved by the Faculty of Medicine is a collection of translated writings of Nehemiah Grew, Robert Boyle and Antoni Van Leeuwenhoeck published in 1679. The review report by the Faculty of Medicine was written by Jean Garbe

the translations of ancient authorities are concerned, the review reports show clearly that the Faculty's interest in these translations was determined by the ancient authorities. In the review report on the Greek-Latin edition of all the writings of Galen and Hippocrates, translated into Latin by Claude Chartier, the Faculty members emphasized that the medical teachings of Galen and Hippocrates are the most outstanding in the history of medicine and that their doctrine had been confirmed time and again throughout history (FdM 1679: 6). What made the translation attractive for the Faculty was the fact that it presented a complete translation of the two "fathers of medicine" ("utriusque parentis Medicinae", ibid.). The decisive criterion for authorizing the publication was therefore the authority of the source text authors. A very similar picture emerges when looking at the review reports of the translations of Galen (1528, 1538) and Paul of Aegina, both translated into Latin by Johann Winter von Adernach (Jean Gonthier d'Adernach). The members of the Faculty praise the fact that Adernach only made changes to the text when they were absolutely necessary. Otherwise, they emphasize the importance of the authors of the source text. 10 With regard to the translation of Paul of Aegina, they also praise Gonthier's efforts to correct the copyists' errors and emphasize that the commentaries Gonthier added were purely for the sake of better comprehensibility and the exegesis of the source text.¹¹ Once again, the impression is created that it is the authors of the original in particular who make their translation into Latin appear valuable.

In all these translations of ancient authorities, it was also crucial for the Faculty that the target language was Latin – and not French. This can be seen particularly well in the review report on the French translation of Galen by Claude Tardy in 1657, the publication of which was rejected by the Faculty on the grounds that "des Oeuvres des Princes de la Médecine" [= the works of the Princes of Medicine] shall not appear in a vulgar language (FDM in HAZON 1773: 48).

If the authors were not Greek authorities but contemporary authors, translations into French seem to have been acceptable to the Faculty. This is evidenced by the seven review reports on French translations from the end of the 17th century onward. However, although the remaining seven review reports were all

and Louys Morin on March 4th, 1679 and is reprinted in GREW & BOYLE & VAN LEEUWENHOECK 1679. The translator(s) remain unknown.

⁹ "Gonthier a suivi la loi prescrite aux Interprètes ; il s'est conformé au plan de ses Auteurs ; ou s'il s'est permis quelquefois des changemens, on s'appercevra aisément qu'ils ne sont pas considérables" [= Gonthier has followed the rules laid down for interpreters; he has conformed to the plan of the authors ; when he has sometimes allowed himself changes, it will easy be seen that they are not considerable.] (FDM in HERISSANT 1765: 73).

¹⁰ Concerning the translations of Galen, they mention that with Galen, Gauthier has chosen an author that is "vraiment utile" [= truly useful] (FDM in HERISSANT 1765: 75) and concerning Gauthiers translation of Paul of Aegina they emphasize that Paul of Aegina was "celui de tous les Médecins qui, depuis Galien jusqu'à Gonthier, avoit écrit avec la plus de certitude sur son Art" [= of all the physicians, from Galen to Gonthier, he wrote with the greatest proficiency about his art] (FDM in HERISSANT 1765: 83)

¹¹ "Gonthier eut à vaincre dans cette traduction […] d'abord la négligence des Copistes […]. Il a joint […] quelques Commentaires qui expliquent la raison de ces changemens, & éclaircissent ce que l'Auteur n'avoit fait qu'indiquer obscurément" [= In this translation, Gonthier had to overcome…first of all, the negligence of the copyists. He had appended … a few commentaries, which explain the reason for these changes, and clarify what the Author had only obscurely indicated] (FDM in HERISSANT 1765: 84).

translations of contemporary authors of lesser authority, here too the author's reputation and the success of the source text appear to be the primary criteria for approval. This criterion is mentioned as an argument in all review reports without exception. For example, the French self-translation of Jean Palfin (1731) was worthy of approval, as the author's earlier books had already proved useful (FDM 1728: xv); likewise, the translation of George Chevne by Jean-Baptiste de la Chapelle (1749) was "digne de la réputation, que son Auteur s'est faite par d'autres Ouvrages" [= worthy of the reputation that its author has earned for his other works] (FDM 1748: vij). In the review report on Gottfried Rothe's *Introduction à la Chymie* (1741) [*Gründliche Anleitung zur Cymie*], the numerous editions of the original in Germany appear as an additional argument alongside the author's reputation: "Nous [...] après une lecture attentive de cet Ouvrage, avons jugé qu'il étoit digne de la réputation qu'il a en Allemagne, ou servant, pour ainsi dire, de Manuel de Chymie, il a été imprimé plusieurs fois dans sa langue originale" = [After a careful reading, we judged this work worthy of the reputation it has in Germany, where it serves, so to speak, as a Manual of Chemistry. It has been printed several times in its original language.] (FDM 1741: 4).

Four of the seven French translations approved by the Faculty include the translator's commentary on the scientific content of the translated text, whether in footnotes (Cornaro / de la Bonodière 1701; Palfijn 1731; James / Diderot et al. 1746) or in the case of de la Chapelle's translation of Cheyne (1749), as an unusually long (90 pages) Avertissement du Traducteur. Such efforts by the translators and editors to supplement and optimize the text are only mentioned in the review reports for two of the four translations, however. For example, de la Bonodière's annotations in his anonymously published translation of Cornaro – prominently announced on the title page - remain unmentioned in the review report. Thus, the representatives of the Faculty sought to emphasize the usefulness of the source script. In de la Chapelle's conspicuously long preface to his translation of Cheyne (1749), he meticulously attempts to reflect the current state of research, which goes completely unmentioned in the review report. Only for Jean Palfijn's self-translation (1731) does the review report mention that Palfijn added new *planches* to his French self-translation and supplemented the text with a few notes (cf. FDM 1728: xvj). However, this is a unique case: Palfijn, as a self-translator, also occupied the role of author. In addition to Palfijn's additions in his self-translation, Robert James's dictionary (1746), translated by Diderot, Eidous, and Toussaint and revised and expanded by Julien Bossun himself a member of the Faculty—contains praise for the efforts of Bossun in completing the dictionary:

On ne peut que savoir gré à l'Éditeur du soin qu'il a pris de donner à l'Ouvrage plus d'universalité, par l'augmentation de plusieurs Articles, par l'addition de quelques-autres qui avoient été omis, & par des notes judicieuses qu'il a placées dans les endroits, qui paroissoient avoir besoin d'éclaircissement. (FDM 1745: n. p.)

[We can only be grateful to the Editor for the care he has taken to give the work greater universality, by increasing several Articles, by adding others which had been omitted, & by the judicious notes he has placed when clarification was needed.]

In sum, according to the analyzed review reports, the author's reputation or the source text's success appears to be the primary criteria for the Faculty's approval of a submitted translation. This applies to the Latin translations by Greek authorities in the 16th and 17th centuries and continued to a certain extent in the French translations of the 18th century. Any additions or annotations to the translation do not appear to be an obstacle; however, neither do they appear to be obligatory for approval. Efforts to supplement and annotate thus appear to be an asset that is at least worth mentioning occasionally.

Review Reports of the Académie des Sciences

As we have already mentioned, neither the approval procedures of the Faculty nor those of the Academy involved *specific* procedures for translations; both original writings and translations were submitted and examined before publication. The translational character of a manuscript – that is, whether a manuscript is 'original' or 'translated' – played no role in its admission for examination. What was relevant, however, was that the manuscript fell within the Academy's area of responsibility, prompting the exclusion of metaphysical, theological and literary works. Once a manuscript had been accepted for examination, it was crucial for a positive assessment that the work fulfilled the principles of *novelty* and *criticism* in accordance with the modern model of knowledge. Jacob Winslow, then *pensionnaire anatomiste* at the Academy, formulated these criteria in a letter to Jean-Paul Bignon dated December 2nd, 1724:

Elle [= L'Académie, G.E.] suit l'intention de son auguste Fondateur de glorieuse mémoire, en n'adoptant que des Observations de Mathmématique & de Physique, qui soient ou tout à fait nouvelles, ou propres à éclaircir, à vérifier, ou à réfuter celles dont on a déjà fait part au Public, soit dans les Mémoires de l'Académie, soit ailleurs. (WINSLOW 1725: 61)

[The academy follows the intention of its august founder of glorious memory, in adopting only observations of mathematics and physics, which are either entirely new, or suitable for clarifying, verifying or refuting those which have already been made known to the public.]

For a positive assessment, the scientific writing had to either shed light on a completely novel aspect or provide new findings (thus contributing novelty), build on previously published writings and clarify them, support them with additional experiments or observations, or refute them in a comprehensible manner (thus contributing criticism or falsification).

Meanwhile, the review reports of submitted manuscripts of translations are consistently divided into two parts: In the report's first part, the writer examines if it is worth publishing a translation of *this particular book* – in other words, the usefulness of the source script. The report's second part focuses on whether it is worth publishing *this particular translation* of a particular book, thus querying the usefulness of the translation. These two aspects are explicitly formulated in the report on the submitted translation of Brook Taylor's *Traité de perspective* [*New Principles of Linear Perspective*], in which the examiners provide the following introductory statement:

L'examen de la traduction d'un ouvrage étranger doit se faire sous deux point de vue bien distincts: il faut d'abord discuter l'utilité dans notre langue, et ensuite le mérite intrinsèque de la traduction. (ADS 1801: 360)

[The examination of a translation of a foreign work must be made from two quite distinct points of view: first, the usefulness in our language, and second, the intrinsic merit of the translation.]

Each submitted translation manuscript had to adequately demonstrate the value it added to the translated source text's existing merits. It was not the source text in French translation that was examined; instead, the examiners focused on the submitted (translation) manuscript alongside its translational and nontranslational parts (i.e., including annotations, prefaces, added chapters, etc.). A closer analysis of all available review reports shows that the two criteria mentioned were not weighted equally. In cases of doubt, the second aspect—the translation manuscript's added value—was given greater importance than the source script's relevance. The following two cases make this weighting apparent: The first concerns the French translation of Piattoli's Essai sur les lieux et les dangers des sépultures (1778) [Saggio intorno al luogo del seppellire], submitted to the Academy by the French physician and anatomist Félix Vicq d'Azyr. In the review report, the Academy's representatives first note that although Piattoli adhered to the basic scientific principles in his work—reasoned argumentation and the citation of sources—the work does not provide any new scientific knowledge: "Il n'y a rien de nouveau dans la partie scientifique de cet ouvrage" [= There is nothing new in the scientific part of the volume (ADS 1777: 97). The first criterion, the source text's relevance to the French scientific discourse, was thus assessed negatively, yet the translated manuscript was still approved due to its added scientific value. This value originated in the work's detailed Discours préliminaire, where Vicq d'Azyr discusses Piattoli's writing relative to other works of natural history and gives medical advice on how people who are in danger of suffocating from foul-smelling exhalations could be saved:

M. de Vicq d'Azir a completté [sic!] l'ouvrage italien, dont il donne la traduction en françois par le discours préliminaire qu'il a mis à la tête. Ce discours renferme des extraits, des ouvrages et des règlements qui ont paru en France sur le danger des inhumations dans les Eglises et dans les villes. [...] M. de Vicq donne aussi des conseils pour secourir les gens suffoqués par des vapeurs méphitiques et il rapporte les opinions et la pratique des meilleurs auteurs sur ce sujet. [...] Nous pensons que l'Académie doit applaudir aux bonnes intentions et au zèle de M. de Vicq d'Azir et que son discours préliminaire est bien digne de l'impression pour tout ce qui a rapport à la médecine et à la physique. (ibid.: 97–98)

[M. de Vicq d'Azyr has completed the Italian work, which he translates into French, by means of the preliminary speech he has placed at the head. This speech contains extracts, works and regulations that have appeared in France on the danger of burials in churches and cities. M. de Vicq also gives advice on how to rescue people suffocated by mephitic vapors, and reports on the opinions and practice of the best authors on this subject. We think that the academy should applaud M. de Vicq d'Azyr's good intentions and zeal, and that his preliminary speech is well worthy of being printed in all matters relating to medicine and physics.]

In this case, the translator's *Discours préliminaire* (spanning an impressive 151 pages), with which he opens Piattoli's work and adds new insights into the treatment of asphyxiated persons, is the decisive aspect that makes the manuscript worthy of approval. This preliminary discourse thus compensated for the source text's lack of relevance and made the translation manuscript in its entirety worthy of publication. In this case, the added value of the translation manuscript was given greater importance than the relevance of the source material.

The second case is the French manuscript of Brook Taylor's New Principles of Linear Perspective (relevant to painters and architects), which was translated into French as *Traité de perspective* by 'M. Lavite.' In the review report on this manuscript dated June 15th, 1801, the Academy representatives begin by emphasizing the originality of Taylor's writing: "Le traité de Taylor doit être distingué de la foule des livres qu'on a écrits sur la perspective; il est digne de son auteur par l'originalité et la fécondité des principes sur lesquels il est fondé" [= Taylor's treatise stands out from the crowd of books that have been written on perspective; it is worthy of its author for the originality and fruitfulness of the principles on which it is based [(ADS 1801: 361). In the eyes of its examiners, the originality of Taylor's writing distinguished it from the numerous writings previously published on perspective. Accordingly, the first criterion for evaluation—the usefulness of a translation of this source writing—was assessed positively. Nevertheless, the translation manuscript was ultimately rejected (in fact, the translation was never printed). It was rejected not because of linguistic translation errors (an interlingual review of the translation never even occurred) but because Lavite did not contribute any additional value to the translated text that is, he did not supplement it or comment on the scientific content of the text in annotations or other peritexts. This lack of meta-discussion of the manuscript and lack of supplementation by the translator led the examiners to conclude that the manuscript submitted by Lavite was a simple version that could be provided by basically anyone with competence in English and French and basic knowledge of geometry:

Quant au mérite de la traduction, qui pourroit être assez grand s'il s'agissoit d'un ouvrage de style, on conviendra qu'il est presque nul dans une simple version, que peut faire tout homme qui entend la langue anglaise et la géométrie. (ibid.)

[As for the merit of the translation, which could be quite great if it were a work of style, we agree that it is almost inexistent in a simple version, which can be done by any man who understands the English and geometry.]

This second case is of note for two reasons: Firstly, it evidences that the second criterion for assessing manuscripts of translations – the added value to the translated book – could both compensate for the translated writing's lack of relevance (as the first case, Vicq d'Azyr, showed) and that the translator's lack of meta-discussion or addition to the translated writing could lead to a manuscript of a translation being rejected. This rejection could occur even if the translated source writing seemed innovative and relevant to French-language scientific discourse. This case thus further supports that the second evaluation criterion for manuscripts of translations was accorded much greater significance.

However, a second aspect in this last example remains of interest here: the judgment of the committee that the submitted translation was merely a "simple version" (ibid.) of a translated work and not an "ouvrage de style" (ibid.) - that is, not a book of architecture. What we find explicitly expressed here is a differentiation between two types of scientific translation according to their function in the scientific system. Translations that primarily fulfill a subsidiary function ('version') are distinguished from those translations that claim to add something new to the scientific discourse and are thus regarded as distinctive scientific writings. This distinction closely resembles Gideon Toury's analytical distinction between the translation of a literary text and the literary translation of a text (c.f. Toury 2012: 197). The translation of a literary text refers to any translation of "texts which are regarded as literary in the source culture" (ibid.; italics in orig.), while a literary translation is a translation of "any text, of any type whatsoever—in such a way that the product is acceptable as a literary text in the recipient culture" (ibid., italics in orig.). Similar to Toury's analytical distinction, the Academy's material shows us a distinction produced by the social actors themselves between *scientific translations*, which appear primarily as scientific publications and only secondarily as translations and the translation of scientific texts that primarily fulfill a subsidiary function, i.e., that are intended to help understand the scientific text of the other language, but which do not appear to be scientific texts in their own right and therefore not worthy of publication.

This distinction expressed very explicitly in the review report of 1801 we discussed here can already be perceived in vaguer formulations in the eighteenth century, for example, where attempts are made to distinguish annotated translations from a 'simple traduction.' The anonymous translator of Christian Wolff's *Cours de mathématique* (1747) [*Anfangsgründe aller Mathematischen Wissenschaften*], for example, claims in his translator's preface: "Je n'ai pas cru devoir me contenter d'en donner une simple traduction. Je suis entré dans un plus grand détail: [...] j'ai souvent étendu le discours beaucoup plus qu'il ne l'étoit dans l'original." [= I thought it was not good enough to give a simple translation. I have gone into greater detail: ... I have often extended the speech much more than it was in the original.] (Anonymous 1747: iij).¹² And Nicolas Heurteloup states, "il faut encore mettre quelque différence entre la traduction pure et simple d'un ouvrage, et celle que l'on accompagne de notes, d'additions" [= There is a difference between a simple and straigtforward translation of a work, and one accompanied by notes and additions] (HEURTELOUP 1808: iv).

During the eighteenth century, France's (early) modern scientific system increasingly distinguished between a 'simple' linguistic transfer of scientific content for subsidiary purposes and between completed, annotated, critical (translation) publications, with the translators as commenting authors who enter a critical relationship with the translated text and attempt to assess and improve it.

This relationship between the translators and the texts they translate can be described as *critical* insofar as the translators attempt to, on the one hand, examine the scientific content they are translating before publishing it and, on the other, express their approval or disapproval of the translated content in detailed

¹² A very similar distinction is made by Le Cozic in the preface of his translation of MacLaurin (LE COZIC 1753: iij). The French translation of Christian Wolffs *Cours de mathématique* is discussed in length in a separate chapter in my dissertation (ELSHERIF 2024: 157–163).

annotations. The translators thus do not regard the authors of the works they translate as *authorities* of information but attempt to engage critically with them. This critical engagement is formulated in numerous translator's prefaces, of which one example shall suffice. Dumas, one of the two translators of a work by Thomas Reid (1792), states in his preliminary discourse:

Je n'ai point placé mes notes pour accréditer cet ouvrage à force d'éloges, mais plutôt pour assurer la confiance du Lecteur sur ce qu'il y remarquera de bon, en lui faisant apercevoir ce qu'il renferme de défectueux. [...] Enfin, le rôle de traducteur ne m'aveuglera point sur le mérite de son livre, et l'on ne m'accusera pas d'avoir épargné les endroits qui m'auront paru répréhensibles. (Dumas 1792: 546)

[I have not placed my notes to accredit this work with praise, but rather to ensure the reader's confidence in what he will notice as good, by making him see what it contains as defective. [...] Finally, my role as translator will not blind me to the merits of his book, and I will not be accused of having spared the places that I found objectionable.]

Of the 40 translations approved by the Academy, 13 35 have extensive annotations in which a critical examination of the translated content occurs alongside additions regarding further literature or the translator's own research findings. 14 These numbers make it apparent that the Academy favored such critical translations. A rough comparison with review reports of other French institutions of modern sciences—the Société d'Agriculture (1761-1793) and the Société de *Médecine* (1778–1793) – further evidence this impression about the Academy of Sciences, as all review reports from each society have the same approval criteria. The modern academies and societies of science thus propagated a type of translation which - if one considers all scientific book translations from English, German, and Italian into French from 1600 to 1815 - became dominant from the second half of the eighteenth century onwards. While translations with critical annotations remained in the minority in the seventeenth and early eighteenth centuries, annotated translations already accounted for 72% of all French book translations in 1740–1815. However, these annotations are not primarily translation-related, in which the translator discusses translation problems or changes made to the text - translation problems discussed in footnotes are usually limited to terminological difficulties, i.e., when there are a number of competing terms for a phenomenon from which the translator has to choose or when there is no French term for a phenomenon and a new term is introduced. The vast majority of added annotations by the translators are, however, not translation-related, but notes in which the translators speak as scientists, contribute their own scientific arguments and observations, and take a critical stance (agreeing or disagreeing) with the translated text. In order to be able to provide such critical commentaries, which expand the scientific content of the text, the translator had to have an appropriate scientific background and, ideally, be an active member of the scientific community himself. The fact that this prior

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¹³ Two of the 42 submitted manuscripts of translations were rejected.

¹⁴ Concerning the five remaining translations without added annotations, in two cases (Champman / Anonymous 1779 and Ehrmann / Fontallard 1787), the Academy had a particular scientific policy interesting in publishing the translation (cf. Elsherif 2024).

scientific knowledge of the translator and his position within the scientific community was of great importance to the Academy is shown by the numerous mentions of the translator's scientific expertise in the review reports, highlighting the "Notes *savants* que le Traducteur a ajoutées" (ADS 1776; italics G. E.) or the translator's proficiency in the 'language of natural history': "On doit sentir quel avantage avait M. Dietrich qui parle les deux langues, et qui connait bien une troisième bien essentielle à l'intelligence de cet ouvrage: la langue de l'histoire naturelle" [= You can see what an advantage Mr. Dietrich had, as he speaks both languages, and is familiar with a third that is essential to the understanding of this work: the language of natural history] (ADS 1776).

The Academy recognized such critical translations as an independent scientific achievement by the translator (or, more precisely, the 'author of the translation'). In a meeting on September 12th, 1799, the Academy explicitly decided:

Sur la proposition d'un Membre, la Classe, après avoir entendu le Rapport de ses Commissaires, décide que toute traduction qui aura exigé de la part de l'auteur de grandes recherches, un travail de longue haleine, et qui sera accompagnée de notes instructives, pourra être mise en concurrence avec les ouvrages qu'elle juge dignes d'êtres proclamés par [sic !] la reconnaissance publique. (ADS 1799: 622)

[On the proposition of a Member, the Class, after hearing the report of its commissioners, decides that any translation which has required extensive research and long-term work on the part of the author, and which is accompanied by instructive notes, may be placed in competition with works which it deems worthy of being proclaimed by public recognition.]

A translation that requires meticulous research by its author (n.b.: the author of the translation, i.e., the translator) and which is provided with instructive annotations should be credited to its author (i.e., translator) as being just as valuable a scientific achievement as non-translated scientific publications.

Concluding remarks

What conclusions can be drawn from the preceding observations? The review reports of the Académie des Sciences give a clear picture of which form of translation was regarded as valuable to the modern sciences and thus worthy of publication, i.e. those translations whose translators emerge as active scientists and comment on the translated text. Published book translations were primarily regarded as scientific publications, while their translation character remained of secondary relevance. As publications, book translations had to fulfill the same requirements as all other scientific publications: They had to add new information or a new perspective on existing information to the scientific discourse. The translators, who were expected to be visible as *scientific authors*, were considered members of the scientific community, and the publication of their critical and annotated translation was thus also seen as their scientific achievement. What becomes apparent in the transition from the Faculté de *Médecine* to the *Académie des Sciences*, and from the 16th to the 18th century, is a reorientation of the institutions' examiners from the source text author (whose prestige makes a translation valuable and thus worth publishing) to the question of whether the translation surpasses its source text in novelty and is thus itself worth publishing as scientific publication. This orientation towards the novelty of

the book translation is accompanied by an orientation towards the translator (and away from the author of the source text). The translation is only worth publishing as scientific writing if the translator also emerges as a scientific author and enters into a critical relationship with the source text. The norms of novelty and criticism established in the modern scientific system are thus also clearly manifested in the scientific translation practice.

Nevertheless, it would be too simplistic to say that the Faculty, as a representative of the old model of knowledge, regarded the authors of the source texts as authorities who shall be translated by 'neutral' translators—that is, translators who do not state their opinion on the translated content—while modern scientific institutions demanded a critical relationship between translator and text. Regarding translations approved by the Faculty, those in the seventeenth and eighteenth centuries already contained some critical comments by the translators but were only mentioned in two cases in the Faculty's review reports. Moreover, regarding those approved by the Academy, it would be equally simplistic to say that this institution paid no attention to the author's reputation or the source text's usefulness at all. For example, in the French translation of Newton (1740), it was undoubtedly Newton who ensured that the French translation would be an attractive text. In the review reports of the Faculty and those of the Academy, two criteria can be identified that were applied to manuscripts of translations: (1) the author's reputation or the source script's success and (2) the intrinsic added value of the translation itself. The weighting of these two criteria has changed from the Faculty to the Academy: in the former, the reputation of the author or the source text was the primary criterion for approval, and the added value of the translation a welcome asset; in the latter, by contrast, the intrinsic value of the translation becomes the primary criterion, with the benefit or success of the author and source text serving as a welcome asset.

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