



ROUTLEDGE  
HANDBOOKS



# The Routledge Handbook of Translation and Health

Edited by Şebnem Susam-Saraeva and  
Eva Spišáková



# The Routledge Handbook of Translation and Health

*The Routledge Handbook of Translation and Health* provides a bridge between translation studies and the burgeoning field of health humanities, which seeks novel ways of understanding health and illness. As discourses around health and illness are dependent on languages for their transmission, impact, spread, acceptance and rejection in local settings, translation studies offers a wealth of data, theoretical approaches and methods for studying health and illness globally.

Translation and health intersect in a multitude of settings, historical moments, genres, media and users. This volume brings together topics ranging from interpreting in healthcare settings to translation within medical sciences, from historical and contemporary travels of medicine through translation to areas such as global epidemics, disaster situations, interpreting for children, mental health, women's health, disability, maternal health, queer feminisms and sexual health, and nutrition. Contributors come from a wide range of disciplines, not only from various branches of translation and interpreting studies, but also from disciplines such as psychotherapy, informatics, health communication, interdisciplinary health science and classical Islamic studies.

Divided into four sections and each contribution written by leading international authorities, this timely *Handbook* is an indispensable resource for all students and researchers of translation and health within translation and interpreting studies, as well as medical and health humanities.

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*Edited by Şebnem Susam-Saraeva  
and Eva Spišiaková*



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# Contents

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|  |           |
|--|-----------|
| <i>Acknowledgements</i>  | viii      |
| <i>List of contributors</i>  | ix        |
| <br>Beyond translation and medicine: initiating exchanges between<br>translation studies and health humanities<br><i>Šebnem Susam-Saraeva and Eva Spišiaková</i> | <br>1     |
| <br><b>PART I</b>  |           |
| <b>Travels of medicine from ancient to modern times</b>  | <b>11</b> |
| 1 Medical translations from Greek into Arabic and Hebrew<br><i>Elaine van Dalen</i>  | 13        |
| 2 Translations of Western medical texts in East Asia in the second<br>half of the 19th and early 20th centuries<br><i>Ji-Hae Kang</i>                            | 27        |
| 3 Dissemination of academic medical research through translation<br>throughout history and in the contemporary world<br><i>Carmen Quijada Diez</i>               | 45        |
| <br><b>PART II</b>   |           |
| <b>Translation in medicine and medical sciences</b>  | <b>63</b> |
| 4 Medical terminology and discourse<br><i>Joost Buysschaert</i>  | 65        |
| 5 Quality, accessibility and readability in medical translation<br><i>Wioleta Karwacka</i>   | 80        |

## Contents

|  |   |            |
|--|---|------------|
| 6  | Inter- and intralingual translation of medical information: the importance of comprehensibility<br><i>Matilde Nisbeth Brøgger and Karen Korning Zethsen</i>                     | 96         |
| 7  | Machine translation in healthcare<br><i>Barry Haddow, Alexandra Birch and Kenneth Heafield</i>  | 108        |
| 8  | Medical humanities and translation<br><i>Vicent Montalt</i>   | 130        |
| 9  | Knowledge translation<br><i>John Ødemark, Gina Fraas Henrichsen and Eivind Engebretsen</i>  | 149        |
| <b>PART III</b>  |   |            |
| <b>Translation and interpreting in healthcare settings</b> |   | <b>163</b> |
| 10   | Community/liaison interpreting in healthcare settings<br><i>Bruce T. Downing</i>  | 165        |
| 11   | Child language brokering in healthcare settings<br><i>Rachele Antonini and Ira Torresi</i>  | 184        |
| 12   | Healthcare interpreting ethics: a critical review<br><i>Robyn K. Dean</i>   | 198        |
| 13   | Remote (telephone) interpreting in healthcare settings<br><i>Raquel Lázaro Gutiérrez</i>  | 216        |
| 14   | Reducing health disparities in the Deaf community: the impact of interpreters and the rise of deaf healthcare professionals<br><i>Christopher J. Moreland and Laurie Swabey</i> | 232        |
| <b>PART IV</b>   |   |            |
| <b>Areas of health</b>                                     |   | <b>251</b> |
| 15   | Translation and interpreting in disaster situations<br><i>Patrick Cadwell</i>   | 253        |
| 16   | Translating global epidemics: the case of Ebola<br><i>Tony Joakim Sandset</i>   | 269        |

|    |   |     |
|----|---|-----|
| 17 | Interpreter-mediated communication with children in healthcare settings<br><i>Anne Birgitta Nilsen</i>  | 285 |
| 18 | Disability in translation<br><i>Eva Spišiaková</i>  | 300 |
| 19 | Queer feminisms and the translation of sexual health<br><i>Michela Baldo</i>                            | 314 |
| 20 | Translation and women's health<br><i>Nesrine Bessaïh</i>  | 331 |
| 21 | Translation in maternal and neonatal health<br><i>Şebnem Susam-Saraeva and Luciana Carvalho Fonseca</i> | 348 |
| 22 | Dialogue interpreting in mental healthcare: supportive interference<br><i>Hanneke Bot</i>               | 369 |
| 23 | Nutrition and translation<br><i>Renée Desjardins</i>  | 385 |
|    | <i>Index</i>  | 403 |



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# Beyond translation and medicine

## Initiating exchanges between translation studies and health humanities

*Şebnem Susam-Saraeva and Eva Spišiaková*

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### 1 Introduction

This volume was born out of curiosity. As translation studies<sup>1</sup> scholars focusing on maternal and neonatal health (Susam-Saraeva) and disability (Spišiaková), and coming from descriptive and sociological perspectives on translation, we were familiar with a small portion of the field of translation and medicine and aware that both interpreting within healthcare settings and translation of medical texts had been growing areas of research. The linguistic, social and ethical aspects of community interpreting that takes place in hospitals and general practices have been studied extensively; literature on the specificities of medical texts, terminology and translation has been flourishing. Invaluable as these studies are in making the process of translation and interpreting in medicine visible, emphasising their crucial impact on patient/healthcare provider interactions as well as on health literacy and knowledge transfer, they inevitably look at a small part of what goes on in relation to translation and human health.

The overriding question for us was this: what would happen if we changed the focus from translation in healthcare settings, or more generally, translation and medicine, to translation and health? Medicine is but one component of health and wellbeing, which signify more than the absence of disease or illness. The more we looked into translation and health, the more it has become apparent to us that they intersect in a multitude of settings, historical moments, genres, and users. With the increasing emphasis on person-centred healthcare, which recognises the initiative, responsibility and empowerment of ‘the patient’, and on the promotion of health across populations, interesting avenues of research open up to scholars working on translation and interpreting in relation to health, beyond the diagnosis and treatment of diseases.

This line of thought, novel as it may be for translation studies, is of course not entirely new. Since the early 21st century, the discipline of health humanities has gradually emerged, encompassing the slightly older and arguably narrower discipline of medical humanities. Health humanities suggests that health matters are too important to be entrusted solely to doctors and other healthcare professionals, and that health is an issue all academic disciplines may approach, examine, sustain and enhance. It seeks novel ways of understanding

health and illness, borrowing methods and frameworks from the humanities and social sciences to bear on biomedicine, clinical practice, and the politics of healthcare. To this end, several disciplines in the humanities, such as literary studies, film studies and cultural studies, have so far been used to shed light on health matters.

Considering that discourses around health and illness are dependent on languages for their transmission, impact, spread, acceptance and rejection in local settings, one can begin to appreciate the wealth of data, theoretical approaches and methods translation studies can offer in studying health and illness globally. Conversely, translation studies can learn from the developments in health humanities regarding the expansion of topics for research, recent frameworks and debates shaping areas of health. Therefore, while this handbook ensures that well-established research areas in translation and medicine are covered, it also intends to open up new avenues of exchange between translation studies and health humanities by initiating research into previously neglected areas.

Compared to medical humanities, interdisciplinarity and interprofessionality are much more emphasised and encouraged in health humanities, bringing in contributions from groups previously marginalised in the former, such as allied health professionals, nurses, patients and carers (Jones *et al.* 2017). The implications of such a broadening of the field for translators and interpreters cannot be underestimated; it would mean more interaction and cooperation between the different professions, as translators and interpreters become an organic part of care-giving, involved in the developments and decision-making processes in healthcare settings.

It is increasingly recognised that ‘medicine is only a minor determinant of health in human populations alongside other social factors’ (Jones *et al.* 2017: 933), such as class, education, occupation, religion, environment, race, disability, sexuality and gender. Given these overlapping determinants – and the influence of other disciplines such as women’s studies, disability studies, postcolonial studies, and queer studies starting to have a bearing on medical education – courses ‘far more concerned with individual and cultural experiences of illness and disability and with the social/structural/political impediments to health and healing’ have begun to be offered as part of medical education (*ibid.*). This shift is in line with an emphasis on intersectionality, another key concept borrowed by health humanities, which highlights the health-related discrimination and disadvantages caused by the interconnected nature of social categorisations as they apply to a given individual or group. In this volume, we endeavoured to reflect the impact of intersectionality on translation and health-related concerns, in chapters focusing on women’s health, disability and health in LGBTQ communities.

In translation studies, the focus has traditionally remained on translation and interpreting within biomedicine, ‘owing to its economic and political power and prestige’ (Montalt in this volume, p. 134). Examining translation and interpreting both in relation to biomedicine and outside its boundaries, several contributions in this volume underline the links between translation, medicine and power (e.g. Baldo, Bessaih, Kang, Moreland and Swabey, Sandset, Spišiaková, Susam-Saraeva and Carvalho Fonseca). The power in question goes beyond ethical considerations surrounding the interpreter/healthcare provider/patient triad, and encompasses a range of issues, such as patient autonomy, informed consent, empowerment of oppressed and/or marginalised groups, challenging institutional attitudes and practices, and the connection between the adoption of ‘Western’ medical knowledge and nationalism, including the processes of modernisation. Other contributions on enhancing health literacy through improving accessibility and readability, on recent projects in medical terminology and machine translation, and

on knowledge translation between science in laboratories and clinical application reveal further implications regarding the positioning of the ‘patient’ vis-à-vis biomedicine.

## 2 Healthcare-focused research in translation studies

While the topics covered in this handbook are, in many cases, well-established areas of research either within or outside translation studies, there has been, to our knowledge, no single volume that brought together such a range of topics on human health and well-being as seen through the prism of inter- (and intra-)lingual transfer. The following brief overview outlines some of the most prominent general works on the subject of health in translation, in order to complement the highly specialised information included in the contributions to this handbook.

The first volume bringing together research on a range of topics related to translation in medical settings was Henry Fischbach’s *Translation and Medicine* (1998). The volume explores topics such as the historical and cultural aspects of medical translation, the training of translators in healthcare settings, and the translation of medical terminology, and as such, could be considered an early precursor to the current volume. With the rise of translation studies as an academic discipline in the early 2000s came the increasing specialisation of its subfields, and research on subjects related to translation and health have gradually become more subject-specific. Out of these subjects, the most comprehensively covered one relates to interpreting in healthcare settings, reflecting the growing need to ensure equal access to medical care in increasingly multilingual societies. The first volume bringing together research articles on the subject was Franz Pöchhacker and Miriam Shlesinger’s *Healthcare Interpreting: Discourse and Interaction* (2007), which focuses on cross-cultural communication, the role played by interpreters in healthcare settings, and the discursive patterns of interaction involving a medical interpreter. A later volume by Brenda Nicodemus and Melanie Metzger, *Investigations in Healthcare Interpreting* (2014), centres on the communicative aspects of interpreter-mediated encounters in healthcare, and explores the different methods for improving accuracy in these encounters. The bilingual volume (Spanish and English) *Translating and Interpreting Healthcare Discourses/ Traducir e interpretar en el ámbito sanitario*, edited by María-José Varela Salinas and Bernd Meyer (2015), comprises both interpreting and translation, and touches upon subjects such as sign language interpreting, quality assurance in the translation process, and translation of specialised medical texts and terminology. The most recent addition to the field is the *Handbook of Research on Medical Interpreting*, by Izabel de V. Souza and Effrossyni Fragkou (2020), which covers areas such as healthcare administration and education, patient care and safety, and interpreting for victims of violence, amongst others.

Another area frequently explored in studies on medical translation and interpreting is the question of intercultural communication. Claudia Angelelli’s volume *Medical Interpreting and Cross-Cultural Communication* (2004) has an ethnographic study of a bilingual hospital at its core, and uses interviews with interpreters to highlight their agency in situations where they are required to bridge cultural as well as linguistic divides. *Health, Communication and Multicultural Communities: Topics on Intercultural Communication for Healthcare Professionals* by Carmen Valero-Garces (2014) places an emphasis on the communicative element of interpreted encounters, and offers reflections and experiences from the author’s long career in training mediators and translators in multicultural medical settings. Elaine Hsieh’s *Bilingual Health Communication: Working*



with *Interpreters in Cross-Cultural Care* (2016) likewise uses interviews with both interpreters and healthcare providers to explore the phenomenon of bilingual healthcare in a wide range of language combinations. Finally, *Multicultural Health Translation, Interpreting and Communication* by Meng Ji, Mustapha Taibi and Ineke Crezee (2019) brings together a range of research topics in empirical health translation, and covers both macro questions concerning national healthcare systems and micro studies of areas such as mental health interpreting.

Several other volumes in the field of medical translation are aimed specifically at professional translators and interpreters with no formal training in interpreting within healthcare settings. These volumes are particularly important, as not all institutions teaching translation and interpreting offer specialised courses on the topic. Ineke Crezee's *Introduction to Healthcare for Interpreters and Translators* (2013) serves as a comprehensive guidebook for those with no prior experience in healthcare interpreting, and provides a well-organised overview of the terminology, concepts and systems they are likely to encounter. The handbook has generated versions for specific languages, including Spanish (Crezee, Mikkelson and Monzon-Storey 2015), Japanese (Crezee and Asano 2016), Chinese (Crezee and Ng 2016) and Arabic (Crezee, Gailani and Gailani 2016). Claudia Angelelli's recent volume *Healthcare Interpreting Explained* (2019) is likewise a guidebook for students and practising interpreters, and teaches problem-solving strategies through real-life examples, alongside chapters on ethics, protocol and professionalisation. Vicent Montalt and Maria González Davies' volume *Medical Translation Step by Step* (2007) turns towards the problem of translation in the medical sphere and offers a comprehensive overview, including detailed instructions on the writing and improving of drafts, and large-scale issues related to the role and responsibilities of translators specialising in medical texts.

It is on the basis of this existing body of research that this handbook intends to propel studies on translation and health into areas beyond healthcare interpreting and medical translation. Crucial though the emphasis on the interpreter/translator working in/on medical encounters/texts has been, we hope that contributions in this volume will demonstrate the significance of other agents translating and interpreting in relation to health, as well as of the various contexts that sustain or hinder translation and interpreting.

### 3 Editing a handbook on translation and health during a pandemic

The final stages of the editing process of this handbook were completed in the midst of the COVID-19 pandemic. When we exchanged emails with our contributors, we sent greetings from one lockdown to another, often starting 'Hope this email finds you and yours well, under the circumstances'. While the situation is still unfolding and scholarly studies on translating and interpreting within this pandemic are only in their initial stages, we feel we need to mention some pointers here for future research.

Translation has been used as a trope in medicine for the last 20 years or so, in terms such as translational research and knowledge translation; however, it has rarely been applied as a critical concept, unlike its use in the humanities (Engebretsen 2 July 2020).<sup>2</sup> This trope tends to suggest a linear production of knowledge, produced in laboratories and medical institutions, which is then supposedly disseminated intact to healthcare providers, clinical practitioners, and ultimately, lay people. The COVID-19 pandemic, however, laid bare the messiness of this process, as well as its cultural-embeddedness, as opposed to the 'timeless' and 'universal' aspects of scientific knowledge. Which type of mask is

most effective against the virus? Would face coverings as opposed to medical-grade masks suffice? How much social distancing is required: two metres, one and a half, or one? At the time of writing this introduction, debates range from the anti-malarial drug trials to the widening use of remdesivir. In short, there has not been sufficient time to establish the truth of scientific knowledge in the case of this particular pandemic. As one of our contributors, Eivind Engebretsen, aptly notes in an interview, during the COVID-19 pandemic ‘the distinction between the moment of production and the moment of translation of knowledge is fundamentally blurred’ (*ibid.*). The pandemic has forced us to act without relying on an established body of evidence-based knowledge (based on e.g. randomised controlled trials) that is temporally associated with the past – in translation studies terms, a solid ‘source text’ – and to ‘translate’ what little knowledge we have on the virus and possible treatments into global clinical practice.

Arguably, at no other time in recent history were we forced to make sense of disease and illness on such a global scale and so rapidly as we have been since the start of the pandemic. Lay people had to ‘translate’ the languages of science, politicians and statistics on a daily basis in order to make sense of the situation (cf. Gardini 15 May 2020),<sup>3</sup> as well as rely on various forms of interlingual translation in order to supplement the frequently insufficient information provided in their local languages. They had to adjust their daily lives to the changing narratives and guidelines in accordance with these ‘translations’. The changes were not limited to behavioural ones; language was also implicated. New terms emerged almost overnight (mostly in Anglophone countries), such as ‘lockdown’, ‘social distancing’, ‘contact tracing’, ‘flattening the curve’, ‘self-isolation/self-quarantine’ and ‘herd immunity’. Through international health organisations which rely on English as a lingua franca, these terms spread worldwide, and were translated into – or simply borrowed and transliterated in – a multitude of languages, with varying degrees of success. While the speed and spread of the virus necessitate that we ‘speak the same language’, preferably that of science, it is becoming increasingly clear that the vastly different responses to the pandemic in each country also reflect the languages of politics, culture, infrastructure, and, most importantly, socio-economic power or the lack thereof. As one senior health advisor at BBC Media Action puts it:

Many organizations are promoting concepts that are alien to our audiences, no matter how they are described [...]. Social distancing and self-isolation present particular problems if you live in a two-room house with 10 others, and then even more so if that house is in a slum with thousands of other people. Another issue is advice around hand-washing, if people don’t have access to enough water or don’t have the money for soap or hand sanitizer.<sup>4</sup>

As widely discussed in the media, the pandemic has made certain existing inequalities starkly visible. These inequalities and their impact on translating and interpreting are not restricted to countries with limited economic means. One debate, for instance, revolved around the provision of sign language interpreting during the UK government’s daily briefings on the pandemic. British Sign Language users and activists argued that they have been discriminated against, because critical information was not being conveyed to them; they accordingly initiated legal proceedings against the government.<sup>5</sup> Elsewhere, previously neglected areas of translation and interpreting were brought to the fore. Over the course of the pandemic, the Slovak sign language interpreter of COVID-19 press briefings, Barbara Randušková, has become a national celebrity due to her nearly constant

on-screen presence, providing much-needed visibility to the practice of sign language interpreting amongst the wider population in Slovakia.<sup>6</sup>

The pandemic impacted not only on the people at the receiving end of translation and interpreting services, but also on translators and interpreters themselves. Owing to shortage of interpreters, cancellation of short-term and long-term interpreting contracts and the exponential increase in remotely-held meetings, EU officials were unable to express themselves in their mother tongues in parliamentary meetings and had to revert to English.<sup>7</sup> In US medical settings, a sudden decline in on-site interpreting (up to 40%) and a corresponding, and seemingly long-term, increase in the use of telephone/video interpreters were noted (Heilweil 2020). Beyond the damage to their livelihood and the transformation of the way they worked, (remote) interpreters have found themselves

in the middle of some of the pandemic's most sensitive, stressful, and heartbreaking moments. They're frequently called upon to share the results of a COVID-19 test, and if it's positive, the interpreter must communicate the next steps, including the rules of social isolation. Interpreters can be asked to help patients in tough times, like being admitted to the hospital or discussing the scenario of going onto a ventilator. More rarely, they can be called upon to interpret the news from a doctor that a family member has died of COVID-19.

*Heilweil 2020*

The situation has been further complicated by the fact that healthcare providers at the other end of remote interpreting devices wear protective masks which render them hard to understand and that the patients themselves may be on ventilators (*ibid.*)<sup>8</sup>

The pandemic has been labelled as 'history's biggest translation challenge'.<sup>9</sup> To cope with the amount of material that needed to be translated in such a short period of time, some volunteer organisations have introduced unprecedented initiatives. Translators without Borders (TWB), for instance, launched the COVID-19 Community Translation Program, 'providing community organizations with free and open access to TWB's online translation environment'<sup>10</sup> so that they can connect and collaborate directly with 'TWB's community of over 30,000 translators, many of whom are generously donating their time to help people access COVID-19 information in their language'.<sup>11</sup> The translations requested have included 'translating travel ban information for refugees and immigrants into Chinese and Korean; translating what social distancing means into Spanish; and translating infection prevention and control information into Spanish, Chinese, French and Portuguese'.<sup>12</sup>

We anticipate that the COVID-19 crisis under which this volume is edited will shift the discourse on health, translation and interpreting into entirely new directions, and bring about questions and research areas we are, as yet, unable to foresee.

#### **4 Future directions**

When we first put together the proposal for this handbook, we had a rather ambitious wish-list for the topics we wanted to cover. Soon, however, we found out that very few researchers focused on areas that we thought would have been particularly noteworthy. The following overview sketches out some of the directions we were not able to pursue in this volume, signalling potential directions for research at the intersection of translation and health.

Our section on the travels of health-related translations focuses overwhelmingly on the transfer of Western sources, with scholarship largely based on the writings of Galen and harking back to Ancient Greece. Translation and transfer of medical knowledge from other parts of the world, including Ayurvedic texts, ancient Egyptian medicine and Chinese medicine, remain underexplored. Translations related to particular events in human history – e.g. doctors' testimonies during the Holocaust, the dissemination of scientific findings such as the germ theory of disease or the invention of penicillin – represent further avenues of research. The role of colonial structures in the spread of biomedical knowledge through translation remains largely untouched, as does the historical and present-day production and transfer of healthcare information in the southern hemisphere. Another area we hope to see further research in is the medical knowledge of indigenous peoples around the world and how this knowledge has been translated. Last but not least, while several chapters in this volume touch upon the subject of translations and interpreting for refugees, translation and health as part of the so-called European migrant crisis is yet to be explored in full.

Another significant area in which we anticipate seeing rapid progress is the use of technology and corpus-based approaches in supporting and improving medical translations. The chapter by Haddow, Birch and Heafield on machine translation in this volume represents an insight into these possibilities; many other areas, such as the role of translation technologies and localisation in the distribution of medical information, or the challenges presented by the interlingual transfer of digital medical records, will likely become the focus of extensive future research.

Recent years have also seen a boom in the publication of narratives penned by healthcare professionals for a general public, from Oliver Sacks' now iconic *The Man Who Mistook His Wife for a Hat* (1985) to more recent bestsellers, such as Paul Kalanithi's *When Breath Becomes Air* (2016). The translations of these works, requiring considerable technical knowledge as well as expertise in literary translation, present a number of challenges worth exploring. Such studies will particularly address the interdisciplinary nature of both health humanities and translation studies, not only by bringing together these two disciplines, but also literary studies and different medical fields, such as neurology and oncology.

As we have deliberately chosen the title translation and health, as opposed to medicine, we also wanted to explore other areas that contribute to human wellbeing than just those that treat illness and disease. We hoped to complement the chapter on translation and nutrition in this volume with others, for instance, on translation, sports and exercise; there is large research potential in the growing interest in self-help publications aiming to improve overall physical wellbeing. Books, blogs, websites and social media apps aiming to enhance people's health, many of which require translation and localisation in order to match their rapid global spread, all represent a gap in current scholarship.

Spiritual, emotional and mental health is another direction we hoped to pursue in more depth. While the chapter on mental health in this volume by Bot provides an illuminating insight into the process of interpreting during therapy sessions, there are many other areas where translation and mental health intersect, including clinical care for mental health patients and global campaigns raising awareness about anxiety or depression. Other areas such as translation of meditation, yoga or mindfulness apps, books or videos will also need to be covered in future publications. Lastly, we hope to see future research exploring the occupational health of translators and interpreters themselves; as many contributions in this volume demonstrate, their work is frequently associated with high levels of stress

and pressure, and perhaps never more so than when their work has a direct effect on human lives and wellbeing.

## 5 Structure of this handbook

The handbook is divided into four sections that reflect the key thematic clusters of present-day research on translation and health. The first part focuses on journeys of medical texts from ancient to modern times, following informational flows in different eras and geographic locations. The contributions unpick the spread of Western medical knowledge from Ancient Greece through Arab empires to medieval Europe, and later through the invention of the printing press, into other regions including East Asia in the 19th and early 20th centuries. The section also considers the role of the various lingua francas of medical knowledge, from Arabic through Latin, to the present-day prevalence of English.

The second section is dedicated to the role of translation in medicine and the medical sciences. The chapters explore challenges posed by medical terminology, international standards of patient information leaflets, and questions of intralingual and interlingual medical translation. Other contributions in this section highlight the growing applicability of machine translation to medical contexts, consider the dual meaning of the word translation in relation to medicine (interlingual translation and knowledge translation), and investigate how the field of translation studies intersects with medical humanities.

The third section turns towards the role of interpreting in healthcare. The contributions explore not only the challenges of interpreting delivered by trained professionals, both in-person or remotely via telephone and videoconferencing, but also the role of non-professional interpreters in healthcare settings, such as child language brokers. Other chapters in this section consider the ethical aspects of interpreting in healthcare settings and the role of language concordance between deaf healthcare professionals and deaf patients.

The final section of the handbook presents insights into and case studies in a range of areas where health and translation intersect. The contributions attest to the specific challenges in providing language access in emergencies, such as disaster situations and pandemics, as well as in everyday life: the health of minoritised groups, such as the disabled and LGBTQ+ communities; women's health, including maternal and neonatal care; the highly sensitive issues related to interpreter-mediated communication with children and in mental health; and, the ever-growing importance of nutrition and health.

We hope that the handbook will be an invaluable resource for students and researchers in translation studies interested in health-related issues, as well as those in health humanities interested in language and communication. Healthcare practitioners who work in multilingual and multicultural environments, as well as translators and interpreters working in healthcare settings will also undoubtedly benefit from the contributions.

## Notes



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- 1 Throughout the handbook, we have used translation studies as an umbrella term covering translation and interpreting studies, except in contributions which specifically focus on interpreting.
- 2 <https://podcasts.ox.ac.uk/masks-vaccine-and-cure-translating-medical-evidence-during-and-after-pandemic>. Podcast with Eivind Engebretsen, by Marta Arnaldi, 2 July 2020. Also available at [www.youtube.com/watch?v=to49m8TcfBI](http://www.youtube.com/watch?v=to49m8TcfBI) (Accessed: 8 July 2020).
- 3 <https://podcasts.ox.ac.uk/translating-illness-case-COVID-19>. Podcast with Nicola Gardini, by Marta Arnaldi, 15 May 2020. Also available at [www.youtube.com/watch?v=gujukayRJ28](http://www.youtube.com/watch?v=gujukayRJ28) (Accessed: 8 July 2020).
- 4 [www.devex.com/news/how-do-you-say-social-distancing-in-swahili-96856](http://www.devex.com/news/how-do-you-say-social-distancing-in-swahili-96856) (Accessed: 8 July 2020).
- 5 [www.bbc.co.uk/news/disability-52323854](http://www.bbc.co.uk/news/disability-52323854) (Accessed: 8 July 2020).
- 6 See e.g. [www1.pluska.sk/spravy/z-domova/exkluzivne-vdaka-matovicovi-ju-pozna-cele-slovensko-minulost-sexi-tlmocnicki-vas-dostane](http://www1.pluska.sk/spravy/z-domova/exkluzivne-vdaka-matovicovi-ju-pozna-cele-slovensko-minulost-sexi-tlmocnicki-vas-dostane) (Accessed: 10 November 2020).
- 7 [www.politico.eu/article/coronavirus-COVID-19-confinement-restrictions-create-havoc-in-the-secret-world-of-eu-interprets/](http://www.politico.eu/article/coronavirus-COVID-19-confinement-restrictions-create-havoc-in-the-secret-world-of-eu-interprets/) (Accessed: 8 July 2020).
- 8 The compulsory use of masks and other facial coverings in public spaces also significantly affected the lives of deaf or hard-of-hearing persons who partially or mainly rely on lipreading for communication.
- 9 [www.wired.com/story/covid-language-translation-problem/](http://www.wired.com/story/covid-language-translation-problem/) (Accessed: 9 November 2020).
- 10 <https://translatorswithoutborders.org/translations-COVID-19/> (Accessed: 9 November 2020).
- 11 <https://translatorswithoutborders.org/COVID-19-application> (Accessed: 9 November 2020).
- 12 *Ibid.*

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## Part I

# Travels of medicine from ancient to modern times

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# Medical translations from Greek into Arabic and Hebrew

*Elaine van Dalen*

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This chapter will consider a wave of Greco-Arabic translations that experienced their peak in the ninth century CE, and the Arabic-Hebrew translations that took place in the 12th and 14th centuries. The two movements had wide-ranging implications for medical research and practice both during their own era and subsequent ones. The chapter will briefly discuss the methods and techniques of pioneer translators such as al-Biṭrīq (active around 800), as well as those of the prolific translator Ḥunayn ibn Ishāq (809–873) and his colleagues, including his son Ishāq ibn Ḥunayn (c.830–c.910) and nephew Ḥubaysh ibn al-Ḥasan (died in late ninth century). In addition, the chapter will introduce leading views on the increased demand and production of medical translations between the 8th and 10th centuries, highlighting practices of patronage that involved both wealthy families and the caliphs. It will also explain patrons' and translators' preferences for particular Greek medical texts, and the influence of translations on medical education and scholarship. Lastly, the chapter will look at the practices of Hebrew translation in Italy and Southern France, including the work of the Tibbonide family, Shem Tov ben Isaac (born in 1196) and Nathan ha-Me'ati (1279–1283), and discuss the role of medical translations in Jewish communities in Southern Europe.

## 1 Greco-Arabic translations: beginnings

The majority of translations from Greek into Arabic in the Middle East were conducted in the 7th to 10th centuries CE, in an era characterised by wide-ranging political and linguistic reconfigurations. The Arabs, arriving from the Arabian Peninsula, established vast empires that stretched from Southern Europe and North Africa to the Middle East and South East Asia, regions previously ruled by the Byzantines and the Persian Sassanid dynasty. The scholarly languages in these regions had been predominantly Syriac, Greek and Persian, and this did not change immediately. Syriac, a dialect of Aramaic, was an important language among Christian intellectual communities in late antiquity. In the centuries prior to the Muslim conquests, Syriac scholars translated Greek works into Syriac and produced Syriac scholarship (Tannous 2010). Such activities continued, as will

be illustrated below, after the conquests. Gradually, the use of Arabic spread; it officially replaced Greek as an administrative language in the 7th century, and increasingly took the place of Syriac and other languages as the main scholarly language in the 9th and 10th centuries. With this Arabisation came the demand for Arabic translations of scholarly texts written in Greek, Syriac, Persian and other languages.

The first of these Arab empires, the Umayyad Empire, lasted from 661 until 750 and had its capital in Damascus in modern day Syria. Not many translations into Arabic were produced during this time, possibly because Greek and Syriac continued to be used by intellectuals even though Arabic had been made the official administrative language. The main translations from this era that are alluded to in Classical Islamic records are alchemical texts. According to the bookseller Ibn al-Nadīm (died *c.*995 CE), the first Umayyad caliph Mu'āwiyā, who ruled between 661–680, asked a group of Egyptian scholars to translate alchemical works from Coptic and classical Greek (Ibn al-Nadīm 1970: 581; Saliba 2007: 45). Medical books seem to have been sporadic among these Umayyad translations. According to the Islamic scholars Ibn Juljul and Ibn al-Qiftī, an 8th-century Jewish scholar called Māsarjawayh translated a Syriac medical compendium, written by the Christian Ahrun ibn A'yun, into Arabic during the reign of the Umayyad caliph 'Umar ibn 'Abd al-'Azīz (ruled 717–720) (quoted in Van Koningsveld 1998: 351–352). Most Greco-Arabic translations however took place in later eras, after the 'Abbasids took over from the Umayyads in the 750s.

## 2 Medical translations in the 'Abbasid Empire

In the 750s, a revolution brought a new family into power in the Middle East, the 'Abbasids. They founded a new capital, called Baghdad, in what is today's Iraq, which had a more central location than the previous capital Damascus. The early 'Abbasid Empire flourished politically and economically, and brought together Persians, Syrians, Copts, Arabs and others. Although each of these groups had their own language, Arabic became increasingly important as a unifying political and scholarly language, much more so than during the Umayyad Empire. This era was characterised by a large-scale translation effort originating in Baghdad, and the most commonly translated languages were Persian, Syriac, and Greek. Translators from Greek first focused on medicine and applied sciences such as astrology and geometry, later followed by philosophy. By the end of the 10th century, translators had rendered nearly all available Greek works of science, medicine, and philosophy into Arabic.

The need for translations can be seen as a sign of flourishing scholarship at the time. The medical translations were often made by scholars who were themselves trained physicians and therefore familiar with many of the concepts in the texts. A prolific translator at this time was Ḥunayn ibn Iṣḥāq (died around 873), a Syriac speaking Nestorian Christian who learnt Greek. He was himself a physician who practised medicine and translated Greek medical texts into Syriac and Arabic with his son Iṣḥāq ibn Ḥunayn (died 910), nephew Ḥubaysh ibn al-Ḥasan (active around 860), and other colleagues.

According to a legend, the activities of these translators began after caliph al-Ma'mūn (ruled 813–833) had a dream about Aristotle. The historians Ibn al-Nadīm (died 990 CE) and Ibn Abī Uṣaybi'a describe how, in his dream, al-Ma'mūn asked Aristotle what the ultimate good was, to which Aristotle replied, 'that which is considered good to reason'. He explained this as meaning 'that which is considered good by law', which in turn means 'that which people consider good'. Ibn al-Nadīm further recounts that this dream led al-Ma'mūn to contact the king of Byzantium and ask permission to send a group of

scholars to procure books treasured in Byzantium. After these books were brought back, al-Ma'mūn ordered them to be translated (Dodge 1970; Saliba 1970: 48; Gutas 1998; Van Koningsveld 1998: 356). Another account claims that caliph 'Umar ordered all the books in Alexandria to be destroyed when he conquered Egypt.<sup>1</sup>

These legends make it appear as if the translation efforts were an attempt to import books to an empire which was alien to these scholarly traditions. In fact, however, many of the medical books that were present in the region before the conquests could still be found there under Umayyad and early 'Abbasid rule, and Alexandrian practices of medical scholarship continued in the early Islamic world. In 6th- and 7th-century Alexandria, scholars such as Palladius, John of Alexandria and Stephen of Athens produced medical commentaries that offered interpretations of earlier Galenic and Hippocratic material. They moreover worked in an academic environment where medicine was taught using a particular collection of Galenic and Hippocratic texts, which became known as the Alexandrian curriculum. These included four works of Hippocrates, four Aristotelian works on logic (the first four of the *Organon*) and the *Sixteen Books* of Galen, including *On Sects*, *On the Art of Medicine* and *On the Pulse for Beginners*. Early translators such as Yaḥyā ibn al-Biṭrīq (died in early 9th century) and his father al-Biṭrīq (died around 800) had started translating some of these books into Arabic already before Ma'mūn's mission to Byzantium. A few decades after this mission, the translator Ḥunayn ibn Ishāq recounts in a letter<sup>2</sup> addressed to his patron 'Alī ibn Yaḥyā how he searched widely for copies of Greek manuscripts in the former Byzantine cities which were now part of the Islamic Empire, such as Alexandria and Damascus. Ḥunayn mentions that it was easier to find manuscripts of Galenic texts that were part of the Alexandrian curriculum than of texts that were not; for example, the manuscript of *On the Therapeutic Method* was difficult to locate 'as it was not read in the school of the Alexandrians', according to his comments (Lamoreaux 2016: 48). This illustrates that, rather than having been destroyed with the conquests as the myth of caliph 'Umar suggests, many of the Greek medical and philosophical books central to late-antique Alexandrian medical scholarship continued to be present and possibly used in the early Islamic world, and they did not all have to be brought from Byzantium. Not only were these works still available in Greek, many of them also circulated in the region in Syriac translations.

Ḥunayn and his colleagues followed in the steps of Syriac scholars who had translated Greek texts into Syriac in previous centuries. An example of these earlier translation activities is the work of Sergius of Resh 'Ayna (died 536), who translated Galen's *Ars Medica* (also known as the *Tegni* or *Microtegni*), the second of Galen's *Sixteen Books*, into Syriac. Such activities continued after the Muslim conquests with the work of Christian scholars such as Jacob of Edessa (died 708) and Ḥunayn himself, who often first translated texts into Syriac and used them as an intermediary to then translate into Arabic. For instance, Ḥunayn retranslated the *Ars Medica* into Syriac three centuries after Sergius' translation and then also rendered the work into Arabic (Tannous 2010). When studying the Greco-Arabic translations, it is important therefore to keep the central role of Syriac in mind.

### 3 Patronage

Translations produced in this time period were the result of well-organised efforts supported by statesmen and elite families, and executed by highly skilled translators. According to Dimitri Gutas, the 'Abbasid caliphs supported the translations partly out of ideological concerns, seeking political legitimisation by adopting the

intellectual traditions of the Sassanid Empire that they replaced (Gutas 1998). He further demonstrates that members of the elite paid for translations as they could benefit from them practically. A quote from the Andalusian physician Ibn Juljul (c.944–c.994), where he argues that scholars appear only in states whose kings seek knowledge (Vernet 2008), seems to support this view. On the other hand, George Saliba suggests that it was middle-class administrators competing for governmental positions who were responsible for the increase in translations (Saliba 2007).

We can get an insight into the role of the elite in supporting the translation movement from Ḥunayn's *Epistle*. In this text, Ḥunayn also gives information about his patrons, who were either related to the 'Abbasid court or were themselves physicians who wished to enhance their medical knowledge, such as the Bukhtīshū' dynasty. This prominent family of physicians spanning six generations over 250 years commissioned medical texts such as Galen's *Book on the Method of Healing*. So did the Banū Mūsa, another family with close ties to the caliph. The caliphs themselves also commissioned translations and patrons generally supported multiple translators. Jibrīl Bukhtīshū' (died 828), for instance, payed both Ḥunayn and Job of Edessa (died around 835), another translator of Greek into Syriac. Ḥunayn further reports that at least five other patrons supported him, both Christian and Muslim, physician and courtier. Some works he would first translate into Syriac for one patron and then into Arabic for another, as he did for example with Galen's works *Pulse to Teuthras* and *Therapeutics to Glaucon*. This patronage contributed to the large number of translations created in this era.

#### 4 Translation techniques

Different translators adhered to different approaches in their medical translations. The historian al-Ṣafadī describes two main strategies, one he characterises as word-for-word translation (*ad verbum*) and the other as focusing on the meaning of the entire sentence (*ad sensum*) (Rosenthal 2003: 17). Al-Ṣafadī mentions the translator Yaḥyā ibn al-Biṭrīq as an example of the first approach. The reputation of this translator was generally not positive (Ullmann 2002–2007: 28–48). His versions were word-for-word translations that did not always pay enough attention to the meaning of the sentence. Manfred Ullmann identified his father, Abū Yaḥyā al-Biṭrīq, as the translator of an early version of the *Aphorisms*, of which the later translator Ḥunayn disapproved (Ullmann 2002–2007: 52–53). These early translators were nevertheless pioneers who did important work in developing Arabic medical terminology. According to al-Ṣafadī, Ḥunayn ibn Iṣḥāq translated by first grasping the meaning of a sentence and subsequently rendering it into Arabic (or Syriac). Ḥunayn's translation approach was precise and had a reputation among historical scholars for being 'without error' (Rosenthal 1946: 254), even though he himself thought it necessary to retranslate several of his earlier translations. He would follow particular strategies to render linguistic features such as conjunctions, conditionals, and subjectivity (Vagelpohl 2011; Overwien 2012, 2015; Van Dalen 2017). For instance, when he considered a sentence to be the reflection of Galen's own views, he would clearly mark this subjectivity by using first-person active voice where Galen had used a passive. He was also aware of the fact that the text was written in a Greek cultural context; when Galen used 'we' as a reference to a general subjectivity, Ḥunayn rendered this as 'the Greeks' (Van Dalen 2017). His nephew Ḥubaysh's language has been characterised as 'translation Arabic', a language that demonstrates clear influence of the source language (Rosenthal 1946: 253).

Another issue Arabic translators dealt with was the polytheistic nature of the texts they translated in a predominantly monotheistic culture. This had consequences for instance in translated references to the Greek gods and can be seen in the way the Hippocratic Oath was translated into Arabic. The beginning of the Greek version of this oath reads in English translation as: ‘I swear by Apollo the physician, and Asclepius, and Hygieia and Panacea and all the gods and goddesses as my witnesses, that, according to my ability and judgement, I will keep this Oath and this contract’ (for the Greek see Littré 1844: 628–633). In the Arabic this has become: ‘Hippocrates said: I swear by God, the Lord of Life and Death, Giver of Health and Creator of Cures and Treatments; and by Asclepius, and by all men and women who are close to God and whom I take as witnesses’ (Savage-Smith, Swain and Van Gelder 2020: 4.1.3.1). In this translation, the gods and goddesses have become ‘men and women close to God’, and Apollo, Hygieia and Panacea have disappeared. Instead, the translator has included the monotheistic God, and only Asclepius remained (see also Pormann and Savage-Smith 2007: 33; for more examples see Picken 2018: 104).

In terms of vocabulary, Ḥunayn and his colleagues drew on contemporary medical terms but also had to create new words to translate Greek terms. They sometimes Arabised words by transliterating them in Arabic script, and occasionally added explanations of their meaning to the translation. In other cases, they used Syriac words that we assume were known to contemporary readers. Sometimes Ḥunayn described the meaning of a Greek term with multiple Arabic words (for examples see Picken 2018: 103–104; Overwien 2012: 156–157; Cooper 2016: 12–23). As medical scholarship progressed, some terms were adopted and others were re-interpreted.

## 5 Translations and scholarship

Medical translations had great impact on medical scholarship in the classical Islamic world. Through the translation efforts that started in Baghdad, all of the Alexandrian curriculum was made available in Arabic and became required reading for medical students (Iskandar 1976). Not only did Islamic physicians follow Alexandrian educational practices, they also adopted late-antique genres such as the medical commentary, and adhered theoretically to what has been described as Galenism<sup>3</sup> more broadly (Temkin 1973). Greek works had competed in the beginning with translated Persian and Sanskrit texts, some of which had themselves adopted the central premises of Greek medical thought. The physician ‘Alī Rabbān al-Ṭabarī (838–870), for instance, draws from Persian texts and translations of Sanskrit texts in his medical encyclopaedia *Paradise of Wisdom*. We also find quotes from Persian and Sanskrit texts in al-Rāzī’s *Comprehensive Book of Medicine*, the *Kitāb al-Hāwī* (Kahl 2015). Generally, however, interest in medical texts was very much directed at the Greek physicians Hippocrates and Galen. For example, the largest part of Ḥunayn’s translations consisted of Galen’s texts, and he lists over 100 of Galen’s works that he translated in his *Epistle*.

One way to study the impact of the translations on medical scholarship in the classical Islamic world is to analyse Arabic commentaries on Greek works. A good example of such commentaries are those on the *Aphorisms*, one of Hippocrates’ most influential medical works. It is a collection originally written in Greek consisting of seven books of short medical verses, the first of which opens with the well-known phrase ‘life is short, art is long’.<sup>4</sup> The *Aphorisms* was first translated into Syriac and Arabic, and later into Latin and Hebrew. Its popularity in teaching and research is evidenced by the large amount of surviving manuscripts, which number over 70 in Arabic (Magdelaine 1994: 87), in addition to their

transmission in the numerous commentaries on the *Aphorisms* in which they are quoted. These commentaries illustrate the importance of the text for teaching and research. Over 20 Arabic commentaries on the *Aphorisms* written over six centuries are known, at least 15 of which have survived to this day.<sup>5</sup> The commentators, all of them physicians, did not only rely on Ḥunayn's translation of the text, but also on his translation of Galen's commentary of it. Even if direct quotations from that text decrease over centuries (Karimullah 2017), Galen's exegetical format was constitutive of the tradition and his theoretical framework remained influential throughout each commentary. Adopting and occasionally rejecting Galenic theory allowed Islamic physicians to make numerous innovations in the exegesis of the Hippocratic source text (Van Dalen 2020). At the same time, one should keep in mind that the Greco-Arabic scholarship only represents the theoretical medicine at the time. Medical practices were probably not always aligned with what has come down to us in the written traditions (Álvarez-Millán 2010, 2000; Pormann and Savage-Smith 2007: 144–162).

For contemporary scholars, the Arabic translations are valuable witnesses of the Greek texts. For example, Galen's commentary on the Hippocratic *Epidemics*, the largest commentary on a Hippocratic work, is only extant in its Arabic translation (Vagelpohl 2011). In other cases, the Arabic translations offer comparative material to Greek texts which are extant in later or sometimes deficient Greek versions.

## 6 Translations from Arabic into Hebrew

After the 'Abbasids took over from the Umayyads, the Umayyads founded an emirate in Andalusia in 756. After this, Arabic scholarship began to diffuse into Islamic Spain, where medical scholarship continued in conversation with research done in the Islamic East over the following centuries. From here, Arabic texts also made their way to Southern France and Italy in the 12th century, where they were translated into Latin and Hebrew. The Arabic-Hebrew translation period lasted approximately 300 years between 1100–1400, with its peak in the 13th century. Although these efforts took place on a much smaller scale than the Greco-Arabic translations in Baghdad, they had a large impact on Hebrew scholarship. Translators first focused on Jewish Arabic works in the fields of grammar and theology, and then moved on to philosophy and medicine, where they translated original Arabic works such as Ibn Sīnā's (c.980–1037, known in Latin Europe as Avicenna) *Canon of Medicine* (hereafter *Canon*), and Arabic translations of Greek works, such as Hippocrates' *Aphorisms* and Galen's *Microtegni*. Moritz Steinschneider listed most of these works in his monumental *Die Hebräischen Übersetzungen des Mittelalters und die Juden als Dolmetscher* (The Hebrew Translations of the Middle Ages and the Jews as Interpreters, Steinschneider 1893). Most of these translation activities took place in Southern Europe, especially in Toledo and Barcelona (Christian Spain), cities in Southern France such as Marseille, Lunel and Montpellier, and in Naples (present-day Italy).

In the 12th century, Andalusian Jews fled to Southern France from persecution by the Almohad Caliphate, bringing with them knowledge of Arabic language and scholarship. One of these emigrants was Judah ibn Tibbon (1120–1190), a physician born in Andalusia (Granada), who settled in the French city of Lunel. His descendants, known as the Tibbonides, became a famous family of physician-translators who lived and worked in Southern France and began the Arabic-Hebrew translation movement. They based their translations directly on Arabic sources, including many Arabic translations of Greek medical texts. Judah Ibn Tibbon's son Samuel ibn Tibbon (1150–1232) translated Galen's *Microtegni* in 1199. Gad Freudenthal has confirmed that he also translated the popular

commentary on this text by ‘Alī ibn Riḍwān (Freudenthal 2016: 38–41). His son Moses ibn Tibbon, who was active between the years 1240 and 1283, translated medical works by Ḥunayn ibn Ishāq, al-Rāzī and Ibn Sīnā (Lindberg 1980: 69).

There were multiple reasons for these prolific Arabic-Hebrew and Latin-Hebrew translation activities in Southern Europe, and especially in Southern France. According to scholars such as Friedenwald and Steinschneider, the movement indicates the scientific interest of Jewish physicians who wanted to increase their medical knowledge (Friedenwald 1934: 88). At the end of the 12th century, there were almost no Hebrew medical books in Southern France, as the medical scholarship available at the time was either in Arabic or in Latin translations of Arabic texts. The Jewish communities in Southern France were not proficient in Arabic or Latin, the language of the elite, and aspiring Jewish physicians were generally not allowed into Latin medical schools. The translator Salomon b. Abraham ben Daud (c.1110–1180), quoted by Steinschneider, noted that this shortage led him to translate two ‘splendid ones’, one text by Averroes and one by Ibn Sīnā (Steinschneider 1893: 672; also in Friedenwald 1934: 88; and compare with Ferre 1998). The fact that Jewish scholars did not have access to libraries and books while their Christian colleagues did, gave Christian physicians considerable advantage. The anonymous translator who used the pen name Doeg the Edomite (12th century), as well as Shem Tov of Tartosa (born 1196) explain that they translate in order to give Jewish physicians the opportunity to compete with Christian physicians (see Barkai 1998: 18–22). Both translators observe a tendency among Jewish people to consult Christian doctors, who were ahead of their Jewish counterparts, and therefore ended up taking non-kosher prescriptions (Barkai 1998: 18–22 and Bos 1998: 102–103). Aside from the risk of non-kosher treatment, another motivation was the desire to demonstrate that Hebrew scholarship was not inferior to Latin or Arabic, as the Jewish community was frequently scorned for its lack of literature (Steinschneider 1893: xvi; Friedenwald 1934: 88; Bos 1998: 102; Barkai 1998: 18–22). The translator Nathan ha-Me’ati for instance explains that ‘[in response to] the contempt in which learnt Christians hold the Jews because the medical works of Solomon and their later writers have been lost, he wished to follow the example of the Tibbonides who had drawn up the books from the marsh and the well of the Arabic language’ (Friedenwald 1934: 88).

The translation activities also spread to Italy. Nathan Ben Eliezer ha-Me’ati was a translator who worked in Rome in the last decades of the 13th century, best known for his translation of Ibn Sīnā’s *Canon*. He translated medical works from Arabic to Hebrew, but unlike the Tibbonides who were native Arabic speakers, Nathan ha-Me’ati learnt Arabic during his travels in Arab-speaking lands, as he says in his translation of the *Canon* (cf. Bos 2013: 307). He also translated the Hippocratic *Aphorisms* as part of his translation of Maimonides’ commentary on this text, and Hippocrates’ *On Acute Diseases* and *Airs, Waters, Places*, including Galen’s commentary on the latter. This commentary had been translated into Arabic by Ḥubaysh ibn al-Ḥasan.

## 7 The role of Latin

In addition to the Arabic-Hebrew translations, some of these translators used Latin versions of Arabic originals as their source texts, for example al-Jazzār (c.895–979) and Zād al-Musāfir, and of Arabic translations of Greek texts, such as the early translations by Doeg. Between the years 1197–99, Doeg translated 24 medical texts from Latin into Hebrew, which included 17 works on medical practice and seven on theory. These included a Latin translation of Ḥunayn’s introduction to Galen’s *Ars Medica*, which he called *Sefer*



*Haguan* (*Book of Hunayn*), Galen's *Ars Medica* itself, Hippocrates' *Aphorisms* and the *Prognostics* (Freudenthal 2013).<sup>6</sup> While these works were normally inaccessible to Jews, Doeg was allowed to obtain Latin texts as a convert to Christianity, albeit one who later repented of his conversion. Many of these texts were also translated from their Arabic versions. The Latin texts with which Doeg worked were sometimes abbreviated, which was the main reason why Moses ibn Tibbon decided to retranslate texts from Arabic that Doeg had already translated from Latin (Freudenthal and Fontaine 2016: 17). Doeg also used technical terms in the language of the gentiles, i.e. the Romance vernacular which was not widely understood among the immigrant communities of Jewish refugees from Andalusia in Southern France. When Moses translated the text again, his version exceeded the popularity of Doeg's translation.

## 8 Major medical works translated into Hebrew

Many texts of Galen's corpus were translated into Hebrew (Lieber 1981). The Galenic work *Ars Medica*, which, as we saw above, was translated into Syriac and Arabic to feature centrally in Islamic medical education and scholarship, was translated into Hebrew three times. Two of these were translated from Latin, first by Doeg and again in the 13th century by Hillel ben Samuel, who used a Latin version by Gerard of Cremona, which in turn was based on an Arabic translation that included Ibn Riḍwān's commentary on the text. The third Hebrew translation from the 12th century was the work by Samuel ibn Tibbon and was based on an Arabic text which had been translated from Greek by Ḥunayn. Galen's *Microtegni* was called *Melaḳah qeṭannah* (*Small Art*) in Hebrew, a translation of the Arabic title *aṣ-Ṣinā'a aṣ-Ṣaḡīra* (*The Small Art*), and known in Latin as the *Ars Parva*. Samuel ibn Tibbon's translation of this text survives in nine manuscripts, of which three are incomplete (Freudenthal and Fontaine 2016: 18). Samuel's translation also included Ibn Riḍwān's commentary. In the *Microtegni*, Galen sets out the main principles of the art of medicine, and the text functioned as an introduction for medical students in the Islamic world as well as in later Latin and Jewish communities. The Egyptian physician Ibn Riḍwān (988–1061/8) glossed it passage by passage and his commentary often accompanied the *Ars Medica* in Hebrew translation as was the case in both Samuel ibn Tibbon's and Hillel ben Samuel's later versions, becoming an important element in Jewish medical education.

Ḥunayn, who translated the *Ars Medica* into Syriac and Arabic, added his own introduction to the text known in Arabic under two titles, the *Introduction to Medicine* (*al-mudkhal fī ṭ-ṭibb*) and the *Questions into Medicine* (*al-Masā'il fī ṭ-ṭibb*), which has led to confusion about whether these were two different texts (Brockelmann 1897: 224) or one and the same work (Iskandar 1978; Ferre 1995: 44; Sezgin 1970: 249–250). Iskandar has shown that shortly after the work was produced, scholars started to use two titles to refer to the same work, the first derived from the work's content and the second from its form (Iskandar 1978). The text was translated into Hebrew multiple times, usually entitled *Sefer mavo le-malakhah ha-refu'a* (*Book on the Introduction to the Art of Medicine*, Ferre 1995: 42). A shortened version of the work was also translated into Latin and became immensely popular under the name *Isagoge ad tegni Galeni* (*Introduction to Galen's Tegni*). Lola Ferre suggests that the diverse translations and large quantity of manuscripts of Ḥunayn's *Introduction* indicate that the text was popular among Jewish physicians (Ferre 1995: 52).

Ibn Sīnā's *Canon*, one of the major medical encyclopaedias produced in the classical Islamic world, became widely disseminated among European Jewish and Latin

communities. More than 100 manuscripts of the Hebrew translations survive worldwide, which indicates its popularity among Jewish physicians.<sup>7</sup> Nathan ha-Me'ati made the first translation of the complete work into Hebrew in 1279 in Rome, a hundred years after its translation by Gerard of Cremona into Latin.<sup>8</sup> Zerariah ben Isaac ben Shealtiel Gracian of Barcelona made another translation around 1280, correcting errors in the first two books of Nathan ha-Me'ati's translation. Finally, Joshua Lorki made further corrections of Nathan's translation of these first two books in 1402 (Bos 2013: 310). According to Bos, a Hebrew translation of the *Canon* printed in Naples in 1491 included all three of these translations of the first two books, together with further editions by 15th-century translators (Bos 2013: 310; Singer and Rabin 1946: lxxvi).

As was the case in the Islamic world the *Aphorisms* were of great importance in European medical scholarship. Steinschneider lists multiple translations of the *Aphorisms* into Hebrew under the name *Perakim*, most of which are part of translations of commentaries on the *Aphorisms*, for instance that of Maimonides or that of Galen (in Arabic). Nathan ha-Me'ati translated them as part of Galen's commentary on the *Aphorisms*, using Hunayn's Arabic translation of the original Greek text (Steinschneider 1893: 659). Moses ibn Tibbon translated the *Aphorisms* as quoted in Maimonides' commentary on the text. Both Hebrew translations of the Arabic Pseudo-Palladius commentary (see next paragraph) include two separate translations of this Hippocratic collection.

Just as some Arabic translations are important witnesses to Greek texts, the Hebrew translations become witnesses for Greek or Arabic texts. This is the case for instance with the 9th-century Arabic version of Palladius' commentary on the *Aphorisms*, of which only the first two books are extant in an Arabic manuscript. Fortunately, the full seven books survive in a 13th-century Hebrew translation by Shem Tov ben Isaac of Tartosa (on this commentary see Pormann *et al.* 2017). Another example is the translation of Hippocrates' *De superfoetatione* (*On superfetation*), which an anonymous translator rendered into Arabic in a poor-quality translation. A later anonymous Hebrew translation of the Arabic text is a valuable witness that helps us to further understand the extant versions of the Greek source text (Zonta 2003). Some Arabic texts only survive in Hebrew translation. An example of this is ar-Rāzī's Arabic treatise on why many people become medical charlatans, which Nathan ha-Me'ati translated into Hebrew in Rome in the 13th century (Steinschneider 1866; Bos 2013: 308; Pormann 2005).

## 9 Hebrew translation techniques

Just as Arabic translators before them, Hebrew translators had to develop new Hebrew vocabulary to render medical terminology. They resorted to Biblical and Rabbinical Hebrew terms and used loan translations, employing existing Hebrew terms with a different meaning. They also created neologisms, used transliterations of Arabic and Romance words, or explained terms (see for instance Zonta 2003, Bos 2008 and 2013, and Ferre and Martínez Delgado 2015). Ferre has drawn attention to the fact that not all translators had the necessary language skills, and some were physicians who felt ill prepared for translation (Ferre 1998). This is illustrated by a quote from Samuel Ben Judah, saying 'I have left many places blank and free of one or more words and lines because of my limited knowledge and insufficient grasp of the Arabic language in addition to its uncommon subject matter' (Berman 1967: 305). In turn, both he and his son Samuel 'criticised their rival translators for subordinating meaning to language and style, failing to accurately reproduce difficult philosophical notions in their paraphrastic

translations' (Robinson 2005: 822). Shem Tov in the introduction of his translation of the Arabic Pseudo-Palladius commentary (written in 1268) apologises that he translated this text when he was old, which may have led to errors (Pormann *et al.* 2007: 303). This is not to say that the translation is of poor quality; in fact, it follows the Arabic closely. An anonymous translator made a different Hebrew translation of the same Pseudo-Palladius commentary which is preserved in Vatican Library manuscript ebr.567, perhaps because they disliked the first translation, but no evidence for this exists. The medical vocabulary of these two translations differs in some instances.

## 10 Future directions

Each of the different aspects of medical translation into Arabic and Hebrew introduced in this chapter represent avenues for further research. For instance, we can learn more about how medical translations influenced medical research, and how evolving medical understanding affected the use of medical terms that had entered medical discourse during the translation period. In terms of translation technique, the work that has been done on some Greco-Arabic translators can be expanded further to include more translators and translations, and also to make comparisons with contemporary translations from other languages such as Persian. The same goes for the translation techniques in translations into Hebrew, and the effects of those translations on scholarship. These medical translations offer rich sources for the study of the development of medieval scholarly Hebrew. Some of the work ahead is of a philological nature, as many translations are preserved in manuscripts that have not yet been edited and have unidentified authorship. Here scholars first need to engage in textual criticism before they can continue to address questions of translation techniques and impact, while knowledge of such techniques also aids in the establishing of the text and authorship attribution.

## 11 Conclusion

The translations discussed in this chapter show the relationship between medical scholarship and translation in the Middle East and Europe throughout history. On the one hand, the presence of committed medical scholars and intellectual activities in both Baghdad and Southern France required translation activity in places where the use of language had changed. On the other hand, these translations also encouraged such activities and stimulated medical scholarship to an unparalleled extent. In Southern Europe, Jewish physicians were able to access Arabic texts in Hebrew translations which their Christian colleagues had already been able to use in Latin translation. This in turn allowed them to provide medical services to Jewish patients who previously may have relied on Christian physicians. Where in the case of Southern France, scholarly works were imported from Andalusia and tended to be new material for the Jewish communities, the situation was different in the classical Islamic world. Here, unlike myths such as those about caliph al-Ma'mūn that made it seem that the medical scholarship was foreign to the new Islamic Empire, the medical texts were already present inside the 'Abbasid Empire in the ancient centres of learning, such as Alexandria and Damascus, and physicians in the region had already been using them in Greek and Syriac. The Arabic translations thus enabled a continuation of medical practices rather than the import of a new tradition. Greek medical texts, especially those that were part of the so-called Alexandrian curriculum, became of central importance in classical Islamic medical education. Medical students in Baghdad

studied the works of Hippocrates and Galen in Arabic with their teachers, and physicians used them as reference works and also contributed to them with new medical findings presented for instance in commentaries, such as those on Hippocrates' *Epidemics* and *Aphorisms*. Greek medical ideas, such as Hippocrates' humoral pathology and Galenic physiology, continued to be influential in the region through the translation of Greek texts and the inclusion of this translated material in new Arabic scholarship. Islamic scholars incorporated this material, sometimes improving on the Galenic theories and at other times rejecting them completely when new empirical evidence turned out to contradict them. The medieval translations of Arabic medical texts and Arabic translations of Greek medical texts into Latin and Hebrew made this scholarship accessible to European students and practitioners of medicine.

## Notes

- 1 According to this myth, which is most completely narrated by the historian al-Qifṭī (died 1248), 'Umar ordered his commander 'Amr ibn al-ʿĀṣ to destroy all ancient books found in the libraries of Alexandria. Cf. Van Koningsveld (1998) p. 364.
- 2 The *Risāla* in Arabic, edited and translated into English in Lamoreaux (2016).
- 3 Galenism refers to a set of Galenic medical theories, concepts and methods that characterised medicine in late antiquity, the Islamic world, and Europe.
- 4 For an overview of the Arabic commentaries on this first aphorism, see Rosenthal (1966: 226–245).
- 5 All of these have been edited by Pormann *et al.*, University of Manchester.
- 6 See Gad Freudenthal (2013: 118–120).
- 7 For a list of extant manuscripts of the *Canon* in Hebrew translation see Richler (1981: 145) and Bos (2013: 39).
- 8 On the history of Hebrew Canon translation see Rabin (1950). On reception of Ibn Sīnā in medieval Jewish communities see Freudenthal and Zonta (2012).

## Further reading

Gutas, D. (1998) *Greek Thought, Arabic Culture*. London and New York: Routledge.

Gutas discusses translation activities in classical Baghdad from a social perspective, focusing on translators and patrons, and offers explanations for the surge in translations in this era.

Pormann, P. E. and Savage-Smith, E. (2007) *Medieval Islamic Medicine*. Edinburgh: Edinburgh University Press.

This work provides students with an introduction to Islamic medicine, covering topics such as medical theory, everyday medical practice and prophetic medicine.

Saliba, G. (2007) *Islamic Science and the Making of the European Renaissance*. Cambridge, MA: MIT Press

This book offers different explanations for the beginnings of the translation activities in the classical Islamic world, as well as a discussion of the influence of Islamic astronomy on European scholarship.

Shatzmiller, J. (1994) *Jews, Medicine, and Medieval Society*. Berkeley: University of California Press. Shatzmiller provides students with an introduction of medical practices among Jewish people in medieval Europe.

## Related topics

Dissemination of Academic Medical Research Through Translation, Translations of Western Medical Texts in East Asia, Medical Terminology and Discourse

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# Translations of Western medical texts in East Asia in the second half of the 19th and early 20th centuries

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## 1 Introduction

This chapter provides an overview of key issues concerning translations of Western medical texts in East Asia in the second half of the 19th and early 20th centuries. Increased scholarly interest in the history of medicine in Asia and other regions in the last few decades has enhanced our understanding of the ways in which Western medicine has been perceived and disseminated in different geographical contexts (Lewis and Macpherson 2008; Worboys 1997; Kiple 1993; Pols, Thompson and Warner 2017; Bowers 1980). Despite the critical role translation plays in the transmission of thoughts and ideas across national and cultural borders, there has been a notable absence of discussions concerning the intricate connections between translation and the production and circulation of Western medical knowledge in East Asia. The few isolated studies that have touched on this topic (e.g. Hong and Wang 2014; van Hoof 1998) have failed to lead to a sustained engagement.<sup>1</sup> Against this background, this chapter outlines some of the main points and issues central to a discussion on how Western medicine was introduced, adopted, and used by countries in East Asia via translation in the second half of the 19th and early 20th centuries.

In the present chapter, the term ‘Western medicine’ is used instead of ‘biomedicine’, ‘modern medicine’, or ‘cosmopolitan medicine’, all of which commonly refer to the structured health beliefs and institutionalised therapeutic practices with roots in the ‘Western’ tradition (cf. Kleinman 1993: 16; Chakrabarti 2013: xiv). It is employed here as a label that encompasses the different terms used to denote the dominant system of medical knowledge in East Asia since the latter half of the 19th century, and highlights the geographical ‘starting point’ of the medical knowledge that has spread to most parts of the world. It was first in Europe, and then in North America, that this system of medical knowledge developed before it was disseminated to other parts of the world, thereby becoming the overriding system of medical knowledge globally. It should be noted, however, that ‘Western medicine’ is far from a homogenous category and has changed significantly over time (Andrews 2014). The discussion in this chapter will hopefully make it



clear that ‘Western medicine’ is neither a single entity nor necessarily a system of knowledge that can be unproblematically connected to ‘the West’ in the transnational knowledge transmission trajectory.

In this contribution, the geographical region at the centre of inquiry is East Asia, with the focus placed on China, Japan and Korea, where the translation of Western medical knowledge was intricately connected to nationalism and beliefs about and desires towards progress and power. Despite centuries of intraregional exchange within the historical context of Sinocentric world order, where ideas and knowledge were generally transmitted from China to Japan, often via Korea, Japan emerged in the early 20th century as the only non-Western imperialist power with colonies in Asia. Although the three countries all strove to respond to Western intrusions, China found itself in a particularly difficult situation clashing with Western powers, including the Opium Wars (1839–1842, 1856–1860) and other armed conflicts, while it tried to forge its own political direction amid complicated internal power struggles. Meanwhile, Korea was colonised by Japan in 1910 and experienced 35 years of Japanese rule until its independence in 1945. Although by the end of the 20th century the political, economic and cultural circumstances of the three countries changed dramatically, with China emerging as a political superpower, Japan as one of the richest nations in the world, and South Korea as the twelfth global economic power, in the early 20th century the three countries were facing different and extensive internal and external challenges.

The emphasis of this chapter is placed on translations and translators of Western medical knowledge in China, Japan and Korea during this period and their connection to the changing political, social and cultural dynamics in the region. The following sections will shed light upon the translation of Western medicine in terms of the historical, socio-political and cultural factors that motivated the translation projects; actors involved in the translation of Western medical knowledge; texts and languages selected for translation; and, the impact of translation on the relevant cultures and societies.<sup>2</sup>

## 2 Setting the scene

During the second half of the 19th century, intellectuals in East Asia engaged in cultural debates about differences between East and West. Their discourses were dominated by a binary view of the division, shown in such phrases as *Tōyō dōtoku seiyō geijutsu* (Eastern ethics, Western technology) created by the Japanese scholar Satsuma Shozan (1811–1864), *Zhongxue weiti, xixue weiyong* (Chinese learning as essence, Western learning for practical use) devised by the Qing official Zhang Zhidong (1837–1909), and *Tongdosōgi* (Eastern ways, Western machines) coined by 19th-century Korean reformers espousing *kaehwa*, the ‘enlightenment’ mind in Korean (Fogel 1996; Kang 2017). East-West dichotomy was used in different ways by politicians and elite groups to instigate nationalist sentiments, but with time, this binary view became much more complicated. Respective countries, and different factions within these countries, adopted positions that best served their interests, as shown in Japan’s eventual embracing of the idea of inherent racial differences among Asians, mainly to rationalise its imperialist expansion in Asia. Although there were voices resisting uncritical admiration of a supposedly coherent ‘West’ (e.g. Chinese writer and translator Lu Xun, 1881–1936), East Asians generally accepted Western material supremacy and the role of Western science in enabling material development from the second half of the 19th century.

The level of interest in Western medicine varied among the three countries during this period, depending on the discourses in circulation concerning Western medicine's role in enabling national development (see the section on 'The translators' below for more details), the reputation of traditional medicine in each country, the levels of hygiene, and the political, religious, and cultural agendas of the actors. Before the transmission of Western medicine, different theories and practices of healing coexisted in the region. Chinese medicine had an extensive influence, despite the existence of a plurality of healing conventions, not all of which could be identified as traditional Chinese medicine. In the case of Korea and Japan, for example, folk remedies, linked to religious rituals, coexisted with Chinese medicine (Motoo, Seki and Tsutani 2011; Kozai 2009).

Initial exposure to Western medicine differed among China, Japan, and Korea. In the case of China, the introduction of Western medicine is mainly related to the activities of the Jesuits who brought European medical knowledge to China in the 17th and 18th centuries (Hanson 2007). However, the number of texts on Western medicine that had been translated by Jesuits at the time was small, especially when compared to their translation of mathematical and Christian texts. The Chinese translation of the French surgeon Ambroise Paré's *Anatomie universelle du corps humain* (Universal Anatomy of the Human Body) by Giacomo Rho, Niccolo Longobardo, and Johann Terrenz Schreck around 1636 is an example of a translated text. Other examples are translations carried out by the French Jesuits Joachim Bouvet and Dominique Parrenin into Manchu, one of the official languages of the Qing dynasty (1636–1911) of China. They include translations of *L'Anatomie de l'homme: suivant la circulation du sang, Et les dernières découvertes, démontrée au Jardin-Royal* (The Anatomy of a Man: Following the Circulation of the Blood and the Latest Discoveries, Demonstrated at the Jardin-Royal; 1690), written by Pierre Dionis, and *Anatome Quartum Renovata* (Anatomy, 4th Edition; 1677), written by Thomas Bartholin (Golvers 2011). These translated texts had limited impact on the spread of Western medicine in China, as their function was largely confined to offering Western anatomical views of the body and Western-style drawing techniques to the Chinese emperors and related officials at the court.

With regard to Korea's first encounter with Western medical knowledge, the texts on Western medicine translated into Chinese by the Jesuits working in China during the 17th and 18th centuries played an important role in shaping Koreans' initial exposure. As Literary Sinitic was commonly used for reading and writing among Korean intellectuals, imported Chinese translations were read without any serious issues in language access (see the section on 'The translations' below for more details on the historical use of Chinese characters in East Asia.). One such example is *Zhuzhi Qunzheng* (Evidence of Divine Providence, 1636), a Chinese translation of *De providentia numinis et animi immortalitate libri duo adversus Atheos et Politicos* (Divine Providence and the Immortality of the Soul against Atheists and Politicians, 1613), originally written by the Jesuit scholar Leonardus Lessius (1554–1623) and translated by the German Jesuit missionary Johann Adam Schall von Bell (1591–1666) (Yeo 2012). The book, which argues the existence of God through natural phenomena, including the human anatomy, influenced such distinguished Korean scholars as Yi Ik (1681–1763) and Yi Kyu-Kyŏng (1788–1856). Yi Ik, for instance, provides a discussion of *Zhuzhi Qunzheng* in an article entitled *Sŏgugŭi* (Medicine in Western countries) released around 1720 (Shin 2009). As the ideas contained in the *Zhuzhi Qunzheng* were significantly different from the existing knowledge of physiology in circulation in Korea, they posed a challenge to the Neo-Confucian view of the body and a traditional understanding of medicine (Yeo 2008). Yet, this initial interest in the concepts and ideas

on Western medicine, as well as those on other areas of Western science and Christianity, appeared during the early- and mid-eighteenth century when the country was relatively open to Western knowledge, compared to the period that followed (1790–1876), when Catholicism was officially labelled as an evil religion and banned. During the period of relative openness, Western medicine is mentioned by a small number of Korean thinkers (Shin 2009). Using Literary Sinitic in their writing, scholars such as Yi Ik, Shin Hoo-Dam (1701–1762), Pak Ji-Won (1737–1805), Pak Jae-Ga (1737–1805), An Jeong-Bok (1712–1791), and Yi Ui-Hyeon (1669–1745) discuss their views on the field, albeit based on a partial understanding. A more extensive knowledge of Western medicine appears decades later in the writings of Choe Han-Ki (1803–1877), but the period of initial encounter with Western medicine, which was based on direct readings of Chinese translations as part of *sohak* (Western Learning), did not lead to substantial changes in the approaches to or understanding of healing behaviour in Korea at the time.

In the case of Japan, Western medicine was initially introduced under different circumstances compared to China and Korea. The Japanese were exposed to Western medicine within the context of *rangaku* ('Dutch learning', by extension 'Western learning') during the Edo period (1603–1868). During the 250 years of isolationist foreign policy prior to the official opening of the ports, the Dutch were the only Europeans allowed to enter Japan for commerce, and the Japanese were exposed to scientific developments through texts provided by the Dutch.<sup>3</sup> Western medicine, particularly anatomy, was the focus of interest at the time, and although the translations were limited in number, they functioned as a basis for translation activities that followed in the Meiji era (1868–1912). The first translators of Western works during the Edo period were Nagasaki-based interpreters, who in their official capacity as government officials were responsible for enabling communication between the Japanese and the Dutch, but in their personal capacity, carried out translations from Dutch and related activities that led to the spread of *rangaku* in Japan.

The most widely known translator of Western medicine during this period is Sugita Genpaku, a practitioner of Chinese medicine whose translation of *Ontleedkundige Tafelen* (Dissecting Tables, 1734), a Dutch translation of *Anatomische Tabellen* (Anatomical Tables, 1722), a medical text written by the German physician and anatomist Johann Adam Kulmus (1689–1745), became the most representative translation of this period. Convinced that human anatomy was more precisely described in this book than in traditional texts of Chinese medicine, Sugita started the study of *Ranpō* (Dutch medicine) and translated *Ontleedkundige Tafelen* into Japanese, publishing in 1774 what is known today as *Kaitai shinsho* (A New Treatise on Anatomy). The translation work was collaborative, and Sugita and his collaborators carried out the translation with a knowledge of only about 600 Dutch words amongst them (Cunningham 2016).<sup>4</sup>

Translation projects within the *rangaku* scholarship laid the groundwork for Japan's modernisation, enabling the creation of preliminary works that functioned as a framework for Japan's acceptance of Western ideas and knowledge in the following years. Despite the suspicion with which Europe was viewed, Western medical knowledge at the time contributed to casting doubts on the accuracy of Chinese medicine. This was the case even though Chinese medicine still held a crucial position in Japan. Other examples of Japanese translations of Western medical texts within the context of *rangaku* include: a 1706 translation by Narabayashi Chinzan (1643–1711) of a 1649 Dutch translation of the French surgeon Ambroise Paré's work *La methode curative des playes, et fractures de la testes humaine* (Treatment Method for Wounds and Fractures of the Human Head,