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Translating Medicine c. 800-1900

Articulations and Disarticulations

*By Tara Alberts, Sietske Fransen, and Elaine Leong**

ABSTRACT

Research located at the nexus of medicine and translation deals with some of the fundamentals of human experience: the most basic drive to survive and flourish, and the urge to gather and to share information that might assist in this. Using a series of case-studies ranging from ninth-century Baghdad, to fourteenth-century Aragon, to seventeenth-century Cartagena, to nineteenth-century Bengal, this volume weaves together an interconnected, long-view history of the translation of medicine. The geographically and temporally diverse contexts of our case studies explore common themes and divergent experiences, connected by our historical actors' varied endeavours to "translate" knowledge about health and the body across languages, practices, and media. Collectively, we offer a new approach to histories of (medical) knowledge, re-localising and deconstructing traditional narratives, and de-emphasising well-worn dichotomies.

The therapy of moxibustion, which involves the burning of the herb mugwort (moxa) on parts of the body, was widespread in various parts of pre-modern Asia. Chinese narratives connected the development of the therapy to legendary figures such as Fu Xi or the Yellow Emperor.¹ In Korea, legend attributed the invention of the therapy to the legendary founder of the first Korean kingdom, Dangun.² Japanese tradition held that the practice was introduced in 642 by Buddhist monk Kiga Hotorike no Nanba, who had learned the technique in Korea.³ Understandings of the theoretical underpinnings, the techniques, the material culture, and the expertise of practitioners which together made up the practice, were similarly diverse, and reflected the wider cultural contexts in which the therapy was adopted.⁴

In the seventeenth century the practice came to the attention of European publics, first through travellers' tales, and then through enterprising physicians who offered the novel therapy to their clients.⁵ Commentators such as the Portuguese Jesuit Luis Frois (1532-1597) and Dutch minister Hermann Buschoff (1620-1674) wrote of their observations of the practice in Asia, using terminology familiar to European audiences to explain the therapy.⁶ Within decades physicians in Europe developed new tools to try out the technique, and developed new understandings of its efficacy.⁷

Therapies such as moxibustion travelled across the globe as texts, as material objects in the form of specimens, as images in herbals and diagrams illustrating practices, and as embodied practice. The construction and transmission of knowledge about health and the

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¹ Wang Shumin and Gabriel Fuentes, 'A Survey of Images from the Chinese Medical Classics' in Vivienne Lo and Penelope Barrett (eds) *Imagining Chinese Medicine* (Leiden: Brill, 2018): 29-50 (38)

² Lu Gwei-Djen and Joseph Needham, *Celestial Lancets. A History and Rationale of Acupuncture and Moxa* (Cambridge: Cambridge University Press, 1980), 262.

³ Giovanni Borriello, "The Introduction of Moxibustion and Acupuncture in Europe from the Early Modern Period to the Nineteenth Century" in Stephanie M Hilger (ed) *New Directions in Literature and Medicine Studies* (London Palgrave Macmillan, 2017): 305- 16 (306).

⁴ See especially Lu and Needham, *Celestial Lancets* (cit. note 2), and Vivienne Lo and Ronit Yoeli-Tlalim, "Travelling Light: Sino-Tibetan Moxa-Cautery from Dunhuang", in Vivian Lo and Penelope Barrett (eds), *Imagining Chinese Medicine* (cit. note 1), 271-90.

⁵ For an overview see Michel Wolfgang, "Japanese Acupuncture and Moxibustion in 16-18th-century Europe", *Journal of the Japan Society of Acupuncture and Moxibustion*, 61 (2011): 150-63.

⁶ See Luis Frois, *The First European Description of Japan, 1585: a critical English-language edition of striking contrasts in the Customs of Europe and Japan by Luis Frois, SJ*, trans, and ed. by Richard K. Danford, Robin D. Gill and Daniel T. Reff (Abingdon: Routledge, 2014); Hermann Buschoff, *Nader als oyt nagevorst en uytgevonden, Midsgaders Des selfs sekere Genesingh of ontlastend Hulp-Mittel* (Amsterdam, Jacobus de Jonge, 1675).

⁷ See for example Margaret D. Garber, "Domesticating Moxa: The Reception of Moxibustion in a Late Seventeenth-century German Medical Journal", in Harold J. Cook (ed), *Translation at Work. Chinese Medicine in the First Global Age* (Leiden: Brill, 2020): 134-56.

body required constant and multiple forms of translation.⁸ It was linguistic and textual – with concepts framed in new languages as they travelled across cultural boundaries and medical traditions and between oral, manuscript, and print cultures. It was material, as items passed into new zones of understanding and were reinterpreted and re-fashioned. It was bodily, with the experiences of those who were healed bearing witness to new epistemologies of sickness and cure. Moreover, categories such as language, materiality, and body were never discrete and separate but rather co-constitutive. Translation occurred across and between them: as textual knowledge produced gesture, motion, and action; as materials were redefined in texts and images, and through practical use; as physical objects were re-interpreted as usable tools or ingestible curatives.⁹ By analysing these complexities of translation, the essays in this volume re-imagine cultures of sickness and health.¹⁰

Our articles approach translation practices through a series of temporally and chronologically diverse case studies. The period between 800-1900 saw a dramatic increase in travel and trade across the globe which came with intensified exchange of knowledge, goods, and practices. In the early part of the period overland trade routes were expanded, consolidated or re-drawn as Muslim empires extended their reach across Eurasia and into Africa, and as “silk road” trade developed and changed. Maritime trade – across the Indian Ocean, into the Pacific and later into the Atlantic – also expanded, as did the colonial ambition of various imperial powers. At the end of the period, the rise of modern colonialism forced new connections, mobility and exchange.

Merchants and other travellers to new regions strove to maintain their health in novel environments with unfamiliar tools, materia medica, and foodstuffs. They were bombarded with unaccustomed ways of thinking about the human body and nature and, crucially for them, a range of wondrous new drugs. As travel increased, so too did the shared experience

⁸ On medicine and translation important recent interventions have been offered by, for example, Shigehisa Kuriyama, *The Expressiveness of the Body and the Divergence of Greek and Chinese Medicine*, Reprint edition (New York: Zone Books, 2002); Andrew E. Goble, *Confluences of Medicine in Medieval Japan: Buddhist Healing, Chinese Knowledge, Islamic Formulas and Wounds of War* (Honolulu: University of Hawaii Press, 2011); C. Pierce Salguero, *Translating Buddhist Medicine in Medieval China* (Philadelphia: University of Pennsylvania Press, 2014); Hans Pols, C. Michele Thompson & John Harley Warner (eds.), *Translating the Body: Medical Education in Southeast Asia*, (Singapore: National University of Singapore Press, 2017); Cook, *Translation at Work* (cit. note 7); Ronit Yoeli-Tlalim, *ReOrienting Histories of Medicine: Encounters along the Silk Roads* (London and New York: Bloomsbury Academic, 2021).

⁹ See for example Elisabeth Hu, “Towards a Science of Touch, Part I: Chinese Pulse Diagnostics in Early Modern Europe,” *Anthropology and Medicine*, 7, no. 2 (2000): 251-268 and “Towards a Science of Touch, Part II: Representations of the Tactile Experience of the Seven Chinese Pulses indicating Danger of Death in Early Modern Europe,” *Anthropology and Medicine*, 7, no. 3 (2000): 3-16.

¹⁰ In doing so, we join and build on a rich field of studies. See, for example, the valuable interventions made by contributors to the Isis Focus section, “Global Histories of Science,” ed. Sujit Sivasundaram, *Isis* 101 (2010) and the recent special issue of *History and Technology* 34 (2018), eds. Gabriele Soto Laveaga and Pablo Gómez.

of epidemic disease which drove interest in new remedies and approaches. New medical theories were constructed under influence of encounters with other cultures. As longer-distance travel and trade increased, so did the complexities of these processes of translation.

Translating Medicine is framed by the metaphor of articulation/disarticulation, through which we argue for a new approach to these complex histories of translation and exchange. We examine in tandem the constructive and destructive processes inherent in translation practices, and draw attention to that which is lost, destroyed, omitted, and erased. We explore how these processes play out in multiple spheres and contexts. First, we re-assess translation as a textual practice, arguing for the need to see translation as a form of “archive making”, and part of a wider interconnected array of epistemic practices. Secondly, we show how analysis of textual and linguistic translation practices must be firmly grounded in the broader contexts of the material, visual, oral, and socio-cultural worlds of actors. Thirdly, we turn to analyse the agency, identities, and expertise of our historical actors, demonstrating how translators, healers, and “translator-practitioners” articulated their authority and expertise in these complex spaces of exchange. Synergies and connections reach across the volume illustrating the interconnectedness of the processes explored in each section. Examining the collected case studies comparatively and connectively propose a range of techniques for analysing processes of translation and for uncovering voices muffled by historical practices of translation. We offer a new paradigm to approach histories of knowledge creation.

Translation, Medicine and the History of Science

Translation has come under intense scrutiny by historians of science and recent years have witnessed a flourishing of publications.¹¹ The cultural turn in history, literary and

¹¹ For an overview, see Marwa Elshakry and Carla Nappi, “Translations,” in *A Companion to the History of Science*, ed. Bernard Lightman (Chichester, West Sussex: Wiley-Blackwell, 2016), Chapter 26; Bettina Dietz ed., “Translating and Translations in the History of Science,” *Annals of Science* 73, no. 2 (2016); Michael Gordon ed., “Linguistic Hegemony and the History of Science,” *Isis* 18, no. 3 (2017), 606-50; Sven Dupré ed., “Translating Science over Time,” *Isis* 109 no. 2 (2018), 302-45 and H. Floris Cohen (ed.), “Historians of Science Translating the History of Science,” *Isis* 109 no. 4 (2018), 774-95. For the premodern context, see, for example, Scott L. Montgomery, *Science in Translation: Movements of Knowledge through Cultures and Time* (Chicago: University of Chicago Press, 2000); Michèle Goyens, Pieter de Leemans and An Smets eds., *Science translated. Latin and Vernacular translations of scientific treatises in Medieval Europe* (Leuven: Leuven University Press, 2008); Sietske Fransen, Niall Hudson, and Karl E. Enekel, eds. *Translating Early Modern Science* (Leiden: Brill, 2017); Jaime Marroquin Arredondo and Ralph Bauer, eds., *Translating Nature: Cross-Cultural Histories of Early Modern Science* (Philadelphia: University of Pennsylvania Press, 2019); Rocio G. Sumillera, Jan Surman, and Katharina Kühn, eds., *Translation in Knowledge, Knowledge in Translation* (Amsterdam: John Benjamins, 2020).

translation studies opened new horizons, prompting scholars to examine “cultures of translation” and the “translation of cultures”, variously defined.¹² Taking a cue from these approaches, historians of science also look beyond notions of the fidelity of the translator or the translation and, while, not adopting the term directly, often align with the view of translations as “transformissions” emphasizing that each literary act, practice, and text has its own story.¹³

Until recently, histories of translation in science often excluded medicine from their purview. This volume is a reaffirmation that not only is medicine “the most universal and oldest form of translation”, but also that studies of medical translation can have wider applications for other fields of science.¹⁴ Analysis of scholarly traditions and the writings of learned practitioners, for example, have begun to reorient our picture of the language-regimes and intellectual networks which facilitated the exchange of medical knowledge.¹⁵ Work on the gradual, iterative, and multi-actor processes of translation in Byzantine, Abbasid, Mughal, Ottoman, and Persian contexts, for example, have offered a poly-centric and dynamic picture of multiple, interactive networks of translation between a bewildering variety of languages.¹⁶ They have also brought into focus multilingual textual production activities at intellectual hubs – from silk road centres including Duanhuang, Turfan, and Gandahara, to the maritime polities of the Malay archipelago – complicating existing narratives of knowledge exchange.¹⁷

¹² Jeanette Beer and Kenneth Lloyd-Jones eds., *Translation and the Transmission of Culture between 1300 and 1600* (Kalamazoo, MI: Western Michigan University Medieval Institute, 1995); Peter Burke, and R. Po-chia Hsia (eds.), *Cultural Translation in Early Modern Europe* (Cambridge: Cambridge University Press, 2007); Sara Barker, and Brenda M. Hosington eds., *Renaissance Cultural Crossroads: Translation, Print and Culture in Britain, 1473-1640* (Boston: Brill, 2013); Francesca Orsini, and Neelam Srivastava, “Translations and the Postcolonial,” *Interventions* 15, no. 3 (2013): 323–31; Karen Newman and Jane Tylus, *Early Modern Cultures of Translation* (Philadelphia & Washington, D.C.: University of Pennsylvania Press, 2015).

¹³ On the idea of translation as transformissions, see Marie-Alice Belle and Brenda M. Hosington, “Introduction: Translation as ‘Transformission’ in Early Modern England and France,” *Canadian Review of Comparative Literature / Revue Canadienne de Littérature Comparée* 46, no. 2 (2019): 201–4.

¹⁴ Henry Fischbach, *Translation and Medicine* (Amsterdam: Benjamins, 1998): 1.

¹⁵ See, for example, “Chapter 2: History and Histories in Medical Texts,” in Nancy Siraisi, *History, Medicine, and the Traditions of Renaissance Learning* (Ann Arbor: University of Michigan Press, 2007). 63-105. Scholars of medieval medicine such as Monica Green, Michael McVaugh have been particularly active in this area, see Cabré “Female Authority”, also in *Osiris* 37 for further references. See also Marta Hanson and Gianna Pomata, “Medicinal Formulas and Experiential Knowledge in the Seventeenth-Century Epistemic Exchange between China and Europe,” *Isis* 108, no. 1 (2017): 1–25.

¹⁶ See, for example, David Bennett, “Medical Practice and Manuscripts in Byzantium,” *Social History of Medicine* (2000) 13:279–91; Sheldon Pollack ed., *Forms of Knowledge in Early Modern Asia* (Durham: Duke University Press, 2011); Ahmed Ragab, “‘In a Clear Arabic Tongue’: Arabic and the Making of a Science-Language Regime,” *Isis* 108, no. 3 (2017): 612–20.

¹⁷ See, for example, Thomas T. Allsen, *Culture and Conquest in Mongol Eurasia* (Cambridge: Cambridge University Press, 2001); Vivienne Lo and Christopher Cullen eds., *Medieval Chinese Medicine: The Dunhuang Medical Manuscripts* (London: Routledge, 2004); Ronit Ricci, *Islam Translated: Literature, Conversion, and the Arabic Cosmopolis of South and Southeast Asia* (London: University of Chicago Press, 2010); Ronit Yoeli-

Within the history of medicine, the material turn has also brought a range of fresh perspectives that can be fruitfully applied to the study of the translation.¹⁸ Historians have charted how *materia medica* travelled across the premodern world and how various processes of “translation” were required to render substances used in one context fit the needs of another.¹⁹ For instance, recent work has illuminated how the curative properties and cultural meanings of substances such as cinchona bark, asafoetida, musk, and china root changed as they circulated.²⁰ Attention to layered meanings, and shifting connotations have helped to elucidate some of the ways in which crossing cultural and linguistic borders re-entangled materials in new webs of significance.²¹ Similarly, historians who introduced new focuses - from practice, bodily experience, to emotion – have offered new approaches to these circulations and exchanges.²²

This volume bring this rich historiography to current conversations about translation and the history of science, answering the call for a closer engagement between historians of science and technology and historians of medicine.²³ As John Pickstone and Michael Worboys have argued, not only are the histories of science, technology, and medicine closely

Tlalim, “The Silk Roads as a Model for Exploring Eurasian Transmissions of Medical Knowledge: Views from the Tibetan Medical Manuscripts of Dunhuang,” in *Entangled Itineraries: Materials, Practices, and Knowledges across Eurasia*, ed. Pamela Smith (University of Pittsburgh Press, 2019), 47–62.

¹⁸ See especially Arjun Appadurai (ed.), *The Social Life of Things: Commodities in Cultural Perspective* (Cambridge: Cambridge University Press, 1986); Finbarr B. Flood, *Objects of Translation: Material Culture and Medieval ‘Hindu–Muslim’ Encounter* (Princeton, NJ: Princeton University Press, 2009); Daniela Bleichmar and Meredith Martin (eds.), ‘Objects in Motion in the Early Modern World’, special issue of *Art History* 38.4 (2015); Craig Clunas, ‘Connected Material Histories: A Response’, *Modern Asian Studies* 50.1 (2016): 61–74; Anne Gerritsen, and Giorgio Riello (eds.), *The Global Lives of Things: The Material Culture of Connections in the Early Modern World* (London: Routledge, 2016).

¹⁹ David Arnold (ed.), *Warm Climates and Western Medicine. The Emergence of Tropical Medicine* (Amsterdam: Rodolphi Press, 1996); Kuriyama, *The Expressiveness of the Body* (cit. note 8); Harold J. Cook, *Matters of Exchange: Commerce, Medicine, and Science in the Dutch Golden Age* (New Haven, CT and London: Yale University Press, 2007); Pratik Chakrabarti, *Materials and Medicine: Trade, Conquest and Therapeutics in the Eighteenth-century* (Manchester: University of Manchester Press, 2010); Andrew E. Goble, *Confluences of Medicine in Medieval Japan. Buddhist Healing, Chinese Knowledge, Islamic Formulas and Wounds of War* (Honolulu: University of Hawaii Press, 2011); Samir Boumediene, *La colonisation du savoir* (Vaulx-en-Velin: Des mondes à faire, 2016).

²⁰ Anna E. Winterbottom, “Of the China Root: A Case Study of the Early Modern Circulation of *Materia Medica*,” *Social History of Medicine* 28, no. 1 (February, 2015): 22–44; Matthew James Crawford, *The Andean Wonder Drug: Cinchona Bark and Imperial Science in the Spanish Atlantic, 1630-1800* (Pittsburgh, PA: University of Pittsburgh Press, 2016); Anya H. King, *Scent from the Garden of Paradise. Musk and the Medieval Islamic World* (Leiden: Brill, 2017); Angela Ki Che Leung and Ming Chen, “The Itinerary of Hing/Awei/Asafetida across Eurasia, 400–1800,” in *Entangled Itineraries* (cit. note 19), 141–164; Yoeli-Tlalim, *ReOrienting Histories of Medicine* (cit. note 8), chapter 3.

²¹ See for example, Linda L. Barnes, *Needles, Herbs, Gods and Ghosts. China, Healing and the West to 1848* (Cambridge: Harvard University Press, 2005), esp. 162-211; Tara Alberts, ‘Curative commodities in Southeast Asia’, in Smith, *Entangled Itineraries* (cit. note 19).

²² Kuriyama, *The Expressiveness of the Body*; Pols, Thompson and Warner (eds), *Translating the Body* (cit. note 8).

²³ John Pickstone and Michael Worboys eds., “Between and Beyond “Histories of Science” and “Histories of Medicine”, *Isis* 102, no. 1 (2011), 97-133.

interlinked but the historiography of medicine, strong on social and cultural analysis, brings new insight into studies of scientists as professional and public figures and highlights the study of vernacular knowledge and everyday practices, thereby shining light on “synchronic assemblages of practices and hybrid knowledges”.²⁴ This emphasis is particularly valent for our case studies, which examine a broad set of activities located across wide swathes of time and space where cognates of concepts such as “medicine”, “science”, and “technology” might connote diverse practices. As Marwa Elshakry has argued, the history of science to a great extent has escaped the postmodern disruption of epistemological categories which has challenged heuristic certainties in other disciplines.²⁵ We see throughout our papers how the boundaries of what counted as “medicine” could shift for our actors as a result of moments of translation and exchange.

Marwa Elshakry and Carla Nappi have argued that a focus on translation can also help us re-think conventional periodizations – ancient, medieval or early modern and modern - and geographical distinctions. They contend that translation can “show us how traditional modes of shaping historical time have been forged or broken...enabl[ing] the creation of new dialogues and relationships across time”.²⁶ Our twin analytical lens of translation and medicine enable us to converse across chronologically and geographically diverse case studies. We thereby offer new perspectives on the movement of knowledge, skills, material objects and people around the globe, and suggest how these stories might disrupt traditional narratives.

Translation as an Analytic: Articulation and Disarticulation

To interrogate a number of related practices across varied cultural contexts, we argue for the need to explore “translation” from a number of perspectives. In translation studies and cultural studies, the concept of translation underwent transformation due to the application of theories from philosophy of language, linguistics, semiotics, and sociology.²⁷ This has helped to problematise the processes of translation and the figure of the translator.²⁸

²⁴ Pickstone and Worboys, “Between and Beyond” (cit. note 26): 98-99 (99).

²⁵ Marwa Elshakry, “When Science became Western. Historiographical Reflections,” *Isis* 101 (2010): 98-109 (99).

²⁶ Marwa Elshakry and Carla Nappi, “Translations,” (cit. note 13), 381-2.

²⁷ See especially Walter Benjamin, “The Task of the Translator,” in *Selected Writings*, vol. 1, ed. Marcus Bullock and Michael W. Jennings (Cambridge: Belknap Press, 2002): 253-63 and Roman Jakobson, “On Linguistic Aspects of Translation,” in *On Translation*, ed. Reuben A. Brower (Cambridge, MA: Harvard University Press, 1959), 232-9; Lydia H. Liu, “The Question of Meaning-Value in the Political Economy of the Sign,” in *Tokens of Exchange. The Problem of Translation in Global Circulations*, ed. Lydia H. Liu (Durham:

As many have noted, the English term “translation” itself could be seen as “untranslatable”.²⁹ While many societies have developed practices and norms concerning the transmission of written or oral texts from one language, script, or medium to another, the semantic field of descriptors used to describe these practices carry continually shifting connotations.³⁰ To elucidate knowledge transfer across time and space, we examine a wide range of practices which share certain features. For our authors, “translation” involves, first, the movement of a subject across a boundary (linguistic, cultural, material, real, or imagined). Second, coterminous with this movement, there is a change or alteration in the subject. Third, the change or alteration is *intentionally* brought about by actors who are intent on making the subject utilisable for a new audience. Our broad analytic lens provides historians with a methodological armamentarium to approach histories of knowledge creation.

Our analysis throughout is animated by the twin themes of articulation and disarticulation. These metaphors, which are at once literary and medical, capture the spectrum of constructive and destructive aspects of translation processes that concern putting things into words, joining things together, and also creating divisions to render things comprehensible.³¹ In their multiple meanings, each term evokes a number of fruitful debates which have animated various scholarly disciplines. Cultural theorists, sociologists, and human geographers have made extensive use of the concept of “articulation”, engaging especially with Stuart Hall’s exegesis of the term.³² Hall emphasized the duality of the term: on the one hand it evoked “two parts ... connected to each other, but through a specific

Duke University Press, 1999): 13-42; Maria Tymoczko and Edwin Gentzler eds., *Translation and Power* (Amherst, MA: University of Massachusetts Press, 2002)

²⁸ Helpful overviews of developments in these fields are provided by Susan Bassnett and André Lefevere eds., *Translation, History, and Culture* (London and New York: Pinter Publishers, 1990); George Steiner, *After Babel: Aspects of Language and Translation*, 3rd edition (Oxford: Oxford University Press, 1995); Umberto Eco, *Experiences in Translation* (Toronto: University of Toronto Press, 2001); Lawrence Venuti, *The Translator’s Invisibility. A History of Translation* (London: Routledge, 1995); Mark Polizzotti, *Sympathy for the Traitor: A Translation Manifesto* (London: The MIT Press, 2018).

²⁹ Ricci, *Islam Translated* (cit. note 19), chapter 2, “On ‘Translation’ and its Untranslatability,” 31-65.

³⁰ Ricci, *Islam Translated* (cit. note 19), 31-3; Martha P.Y. Cheung, “Chinese Discourse on Translation as Intercultural Communication: The Story of *jihe* (幾何),” in Juliane House ed., *Translation: A multidisciplinary approach* (Basingstoke: Palgrave Macmillan, 2014), 56-72.

³¹ A few other scholars have noted the connections between linguistic and bodily disarticulation. See for example, Marjorie Gerber “Out of Joint” and Stephen Greenblatt, “Mutilation and Meaning”, in *The Body in Parts. Fantasies of Corporeality in Early Modern Europe*, eds. David Hillman and Carla Mazzio (Madison, NY: Routledge, 1997), 23-52 and 221-242; Kylee-Anne Hingston, *Articulating Bodies: The Narrative Form of Disability and Illness in Victorian Fiction* (Liverpool: Liverpool University Press, 2019).

³² Useful overviews of the application of this concept in various disciplines are given by Jennifer Daryl Slack, “The Theory and Method of Articulation in Cultural Studies,” in *Stuart Hall: Critical Dialogues*, eds. David Morley and Kuan-Hsing Chen (London: Routledge, 1996).

linkage, that can be broken”, and on the other, “language-ing, of expressing”.³³ Building on this work, and on Antonio Gramsci’s theories of language and “translatability”, scholars have drawn attention to the linguistic dimensions of these processes, examining the role of language to bring together disparate things in the construction of various “unities” in the social world and in its discourses.³⁴ Similarly, Bruno Latour suggested using the metaphor of “articulation” to examine the connections established between all sorts of entities, from words to all aspects of the world they describe including “gestures, papers, settings, instruments, sites, trials”.³⁵ He explores how in a scientist’s laboratory, these disparate things brought into conjunction are both articulated and become “more articulate” themselves, indeed create new “articulate” entities.³⁶

For our purposes, the most important insight from this type of analysis is the focus placed on the contingency and context-dependence of all forms of “articulation”, from the connections between social groups, to the semiotic connections between words and the things they represent.³⁷ Inherent in all of these notions of articulation is the possibility of disarticulation, as linkages are dissolved or no longer sustained. In this way translation creates contingent connections between texts, materials, languages, and meaning in varied contexts.

Disarticulation could be practiced intentionally with the intent of preserving and improving but could also be a form of erasure, as concepts and connotations are left fragmented or unspoken. The theme of disarticulation thus speaks to broader issues of the operation of power in translation.³⁸ In a Gramscian sense translation is then always understood as political: investigating translations provides the analytical means to understand

³³ Stuart Hall and Lawrence Grossman eds., “On Postmodernism and Articulation: An Interview with Stuart Hall,” *Journal of Communication Inquiry* 10 (1986): 45-60 (53). See also John Clarke, “Stuart Hall and the theory and practice of articulation,” *Discourse: Studies in the Cultural Politics of Education*, 36, no. 2 (2015): 275–86.

³⁴ See especially Kevin DeLuca, “Articulation Theory: A Discursive Grounding for Rhetorical Practice,” *Philosophy & Rhetoric* 32 (1999): 334-48; Peter Ives and Rocco Lacorte eds., *Gramsci, Language, and Translation* (Lanham: Lexington Books, 2010); and Micheal Ekers, Stefan Kipfer & Alex Loftus, “On Articulation, Translation, and Populism: Gillian Hart’s Postcolonial Marxism,” *Annals of the American Association of Geographers* (2020), 1-17.

³⁵ Bruno Latour, *Pandora’s Hope. Essays on the Reality of Science Studies* (Cambridge, MA: Harvard University Press, 1999), 142-3.

³⁶ Latour, *Pandora’s Hope* (cit. note 38), 144.

³⁷ Hall and Grossman, “On Postmodernism and Articulation” (cit. note 36).

³⁸ Especially Mona Baker, *Translation and Conflict: A Narrative Account* (London: Routledge, 2006); Edwin Gentzler and Maria Tymoczko, “Introduction,” in *Translation and Power*, eds. Maria Tymoczko and Edwin Gentzler (Amherst and Boston, MA: University of Massachusetts Press, 2002) xi-xxviii; Vicente L. Rafael, *Contracting Colonialism: Translation and Christian Conversion in Tagalog Society Under Early Spanish Rule* (Durham, NC: Duke University Press, 1992).

socio-cultural-political circumstances.³⁹ Our articles address crucial structural themes including the consolidation of social and political hierarchies, and the making and maintenance of state and colonial power. The processes of making legible, demarking boundaries, and ordering necessarily involve erasure and destruction as these processes impose their own intellectual hegemonies, often resulting in what Rolando Vázquez has termed “epistemicide”.⁴⁰ For example, concepts of universalism or the search for universal languages and shared meanings result in erasure, as incommensurate understandings and ontologies are misunderstood, disregarded or re-interpreted.⁴¹ Translation into and between languages such as Latin, Greek, Arabic and Classical Chinese could have a silencing effect on other languages, which became considered unequal to carrying the burden of weighty knowledge concepts.⁴² The disarticulation or violence of translation is one that goes beyond that exemplified in studies framed around ideas about colonialism, empire, or commercial history.⁴³

In her recent article in *History and Technology*, Gabriela Soto Laveaga challenged us to adopt the “largo dislocare” approach of connecting microhistories as a way to “dislocate histories not just geographically but also chronologically to better understand the motion of people, ideas and objects”.⁴⁴ The study of translation is a key part of this approach, and indeed, many of our contributions adopt microhistory as a methodology to interrogate global exchange.⁴⁵ Our focus on the articulations and disarticulations of translation raise a set of common questions about situated epistemic practices and the various frames – institutional, political, economic, cultural, social – which shape knowledge production. Putting our stories in concert, we seek out resonances such as cognate practices or points of resistance. Examining translation through texts, beyond texts, and through experiences of historical actors, we suggest a new approach to explore “knowledge in transit”.⁴⁶

³⁹ Ives and Lacorte, *Gramsci, Language, and Translation* (cit. note 37), 9.

⁴⁰ See Rolando Vázquez, “Translation as Erasure: Thoughts on Modernity’s Epistemic Violence,” *Historical Sociology* 24 (2011): 27-44 (29). On legibility see also James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human* (New Haven, CT: Yale University Press, 1999).

⁴¹ Vázquez, “Translation as Erasure” (cit. note 43), 36-40.

⁴² See for example Rafael, *Contracting Colonialism* (cit. note 42).

⁴³ See Rosalind C. Morris, “Introduction,” in *Can the Subaltern Speak? Reflections on the History of an Idea*, ed. Rosalind Morris (New York: Columbia University Press, 2010): 1-20.

⁴⁴ Gabriela Soto Laveaga, “Largo Dislocare: Connecting Microhistories to Remap and Recenter Histories of Science,” *History and Technology* 34, no. 1 (January 2, 2018): 21–30.

⁴⁵ On global history and microhistory, see John Paul Ghobrial ed., “Global History and Microhistory,” *Past and Present Supplement* 14 (2019).

⁴⁶ James A. Secord, “Knowledge in Transit,” *Isis* 95, no. 4 (2004): 654–72; Kapil Raj, *Relocating Modern Science: Circulation and Construction of Knowledge in South Asia and Europe, 1650–1900* (Basingstoke: Palgrave Macmillan, 2007); Neil Safier, “Global Knowledge on the Move: Itineraries, Amerindian Narratives, and Deep Histories of Science,” *Isis* 101, no. 1 (2010): 133–45; Patrick Manning and Abigail Owen, eds.,

The Volume

Section I: Archives and the Authority of Practice

In recent years, archives have received considerable attention by historians of science and medicine.⁴⁷ As others have noted, the material turn drove us to consider pen and paper-based practices as technologies of information management, and as we shone light on those practices, archives have emerged as central to the production of knowledge. Thus far, these conversations have largely concentrated on two historical subfields: archival practices and learned practices of note-taking, excerpting, compiling.⁴⁸ Somewhat surprisingly, practices of translation have not been centrally featured. Yet, it is clear that as cognate processes, translation, note-taking, and archive-making often went hand-in-hand, and as historians of science have argued, these also functioned in conjunction with other epistemic practices such as observation in the making of natural knowledge.⁴⁹ Putting histories of translation in conversation with these recent analytical discussions, the four essays in this section contend that acts of translation need to be interrogated alongside other paper-based knowledge practices. In studying these acts of articulation and, particularly, disarticulation, we pay heed to the hegemonic tendencies inherent in archive-creation.

Knowledge in Translation: Global Patterns of Scientific Exchange, 1000-1800 CE (University of Pittsburgh Press, 2018).

⁴⁷ There is a recent flourishing of literature on archives. For an overview, see Elizabeth Yale, “The History of Archives: The State of the Discipline,” *Book History* 18, no. 1 (2015): 332–59. Recent publications include: Kathryn Burns, *Into the Archive: Writing and Power in Colonial Peru* (Durham: Duke University Press, 2010); Markus Friedrich, *Die Geburt des Archivs, Eine Wissensgeschichte* (Berlin, Boston: De Gruyter, 2013); Kate Peters, Alexandra Walsham, and Liesbeth Corens, eds., *Archives and Information in the Early Modern World* (Oxford: Oxford University Press, 2018). Key works by historians of medicine, science and technology include: Michael Hunter, ed., *Archives of the Scientific Revolution: The Formation and Exchange of Ideas in Seventeenth-Century Europe* (Woodbridge; Rochester, NY: Boydell Press, 1998); Warwick Anderson, “The Case of the Archive,” *Critical Inquiry* 39, no. 3 (March 1, 2013): 532–47; Lorraine Daston, *Science in the Archives: Pasts, Presents, Futures* (University of Chicago Press, 2017); Vera Keller, Anna Marie Roos, and Elizabeth Yale, *Archival Afterlives: Life, Death, and Knowledge-Making in Early Modern British Scientific and Medical Archives*, *Archival Afterlives* (Brill, 2018).

⁴⁸ Keller, Roos, and Yale, *Archival Afterlives* (cit. note 50), 8. On learned practices see, for example, Ann Blair, *Too Much to Know. Managing Scholarly Information before the Modern Age* (New Haven and London: Yale University Press, 2010); Anthony Grafton and Glenn W. Most, *Canonical Texts and Scholarly Practices: A Global Comparative Approach* (Cambridge University Press, 2016); Anthony Grafton, *Inky Fingers: The Making of Books in Early Modern Europe*, *Inky Fingers* (Harvard University Press, 2020); Ann Blair et al., *Information: A Historical Companion* (Princeton: Princeton University Press, 2021).

⁴⁹ Lorraine Daston, “The Sciences of the Archive,” *Osiris* 27.1 (2012): 156–87. Recent overviews of early modern note-taking and the history of science include: Dana Jalobeanu, “The Toolbox of the Early Modern Natural Historian: Notebooks, Commonplace Books and the Emergence of Laboratory Records,” *Journal of Early Modern Studies* 4, no. 1 (2015): 107–23; Boris Jardine, “State of the Field: Paper Tools,” *Studies in History and Philosophy of Science Part A* 64, no. Supplement C (August 1, 2017): 53–63; Elaine Leong, “Read. Do. Observe. Take Note!,” *Centaurus* 60, no. 1–2 (2018): 87–103. The term “paper technologies” was coined by Anke te Heesen in “The Notebook: A Paper-Technology,” in *Making Things Public: Atmospheres of Democracy*, ed. Bruno Latour and Peter Weibel (Cambridge, MA and London: The MIT Press, 2005), 582–89.

Our case studies concern knowledge communities situated across diverse contexts, and yet are connected by a similar set of textual practices – translating, compiling, *and* archiving. Using the notion of an “archive” as a heuristic device, we take a macro-level view and attend to the changing power relations underlying knowledge practices.⁵⁰ This focus on viewing translation processes within the larger schemes of archive-making lead us to craft longer, more expansive narratives of knowledge production. If past studies tend to shine light on single instances of linguistic translations, we have chosen to recover epistemic acts occurring *before*, *during* and *after* points of translation.

The archives featured in this volume vary considerably. Some, such the library created by Liu Zhi (1660-1730), the Chinese literatus in Dror Weil’s essay, are physical and paper-filled consisting of a plethora of books and scrolls. Others are abstract ideas, such as Alisha Rankin’s notion of an “archive of practice”. In this case, the “archive” is a corpus of indigenous Amerindian knowledge based on practices rather than texts which was articulated or dis-articulated by European vernacular translators as they sought to convey information about New World drugs to home audiences. We are concerned with both large-scale institutional repositories such as the Abbasid court at the center of Ahmed Ragab’s study, and personal household archives such as the eighteenth-century Englishwoman Rebecca Tallamy’s (fl. 1730s) recipe-filled copy of a printed distillation manual as outlined by Elaine Leong. By scrutinizing a wide range of archives under the same analytical lens, we bring into conversation practices situated across time and space, and track the epistemic impact of translation and archiving practices across public and private spheres and communication media. Moreover, where past studies of medical archives tend to feature cases and observations, our broader remit brings to light the myriad ways in which health practitioners constructed fonds of knowledge as part of their everyday medical practices.⁵¹

For many historical actors in our stories, translation efforts began with a search for textual and oral knowledge. For instance, in his essay on Chinese translations of Arabo-Persian natural philosophical texts in seventeenth-century Nanjing, Dror Weil paints a vivid picture of Liu Zhi scouring the Chinese empire for manuscripts. Visiting bookstores and

⁵⁰ Ann Laura Stoler, *Along the Archival Grain* (Princeton, N.J.: Princeton University Press, 2008); Burns, *Into the Archive* (cit. note 50); Keller, Roos, and Yale, *Archival Afterlives* (cit. note 50).

⁵¹ On cases and observations in early modern medicine, see, for example, Lauren Kassell, “Casebooks in Early Modern England: Medicine, Astrology, and Written Records,” *Bulletin of the History of Medicine* 88, no. 4 (2014): 595–625; Volker Hess and J. Andrew Mendelsohn, “Case and Series. Medical Knowledge and Paper Technology, 1600–1900,” *History of Science* 48, no. 3–4 (2010): 288–314; Gianna Pomata, “Observation Rising: Birth of an Epistemic Genre, 1500-1650,” in *Histories of Scientific Observation*, ed., Lorraine Daston and Elizabeth Lunbeck (Chicago: University of Chicago Press, 2011), 45–80.

private libraries and relying on local literati for linguistic help, Liu assembled a treasure trove of Arabic-Persian texts which served as the core of his scholarly practices.⁵² While a need for completion is often the driving force behind these initial hunts and collation of texts, the parameters of what counted as “complete” were shaped by social and political contexts, and continually negotiated. In examining these negotiations, we especially attend to the agency of our historical actors in determining the shape of the archive, paying heed to the influence of courtly patrons, scholarly communities, health practitioners, readers, users, and consumers of books and medicine.

Once assembled, the archive served as a dynamic space for knowledge making, and as we demonstrate, translation was only one component of a range of connected epistemic processes. In his revisionist account of the Islamic “Translation Movement”, Ragab urges us to view translation not as processes of “encapsulating texts into a new language” but rather practices of knowledge-making built on existing scholarly traditions. The construction of an emerging archive was part and parcel of this work. Ragab argues that for figures such as Ḥunayn ibn Ishāq (d. 873), translation involved more than simply moving texts faithfully from one language or another but concerted efforts to create a body of knowledge. Ḥunayn built up a collection of Greek texts by many authors and sources, including several copies of the same text, offering possibilities for comparison and correction. A similar case is made by Weil, who demonstrates that the translation of Arabic-Persian natural philosophy into Chinese required not only linguistic alternations but also careful reconstructions of concepts and theories. Textual collation, extraction, and validation, based on an archive of amassed texts, was at the heart of these activities. In both Ragab and Weil’s stories, the translation of medical ideas and theories was achieved through a variety of complex processes of articulation: textual collation, excerption, and validation, which, intentionally or not, all resulted in the amplification or silencing of particular voices.⁵³

While Ragab and Weil situate these textual practices within large-scale archives, other authors in this section explore their impact on a smaller scale, in many cases in single books or textual objects. Much like archive-building, the creation of compendia via practices of reading and note-taking required the deliberate selection and linking of different kinds of knowledge. In many of our stories, what first appear as single titles or books turn out to have convoluted production histories arising from an “archive” of interconnected texts. Translation

⁵² Weil, “Unveiling Nature”, also in *Osiris* 37.

⁵³ Ragab, “Translation and the Making of a Medical Archive” also in *Osiris* 37 and Weil, “Unveiling Nature” (cit. note 55).

played a key role in these sorts of epistemic activities. The Tallamy family’s annotated copy of *The Art of Distillation*, as analysed in Leong’s essay, for example, demonstrates how a single book served as an archive recording multiple layers of epistemic work conducted by men and women living decades and hundreds of miles apart. Leong shows how the physician and translator John French (1616 -1657) and members of the Tallamy family translated and gathered together textual excerpts, recipes and other know-how to create a general guide for distillation and household medicine. Adopted into the household context, French’s printed book transformed from a manual of artisanal how-to into a family archive, recording instances of social interactions, reading practices and, crucially, their first-hand experiences with recipe testing.⁵⁴

Textual juxtaposition, compilation, and translation also stand at the heart of Alisha Rankin’s essay. Tracking the sixteenth-century Spanish physician Nicolás Monardes’ treatises on New World drugs across Europe, Rankin shows how the modularity of Monardes’ work allowed translators to choose portions most relevant to their linguistic communities, rather than producing only complete translations of the work. Key to these, Rankin argues, is inclusion or omission of indigenous knowledge of New World informants, Monardes and other physicians, and trustworthy contemporaries. By selectively including or excluding observations from the “archive of practice”, translators were able to create new texts tailored to local interests, reflecting broader trends in Renaissance Europe.⁵⁵

Moreover, while textual practices – in manuscript and in print – take center stage in all our case studies, our focus on health concerns means that *medical practices* often initiated these endeavours. Scholars have pointed to the common practice of recording cases and observations encountered in quotidian medical practice, and practitioners’ subsequent efforts to organize and categorize these records.⁵⁶ In connection to translation practices, Harold Cook has recently pointed out how hope of medical innovations and advances in patient care prompted physicians to explore medical ideas from other cultures.⁵⁷ This optimism is particularly valent in Leong and Rankin’s stories where the translation of know-how

⁵⁴ Leong, “Translating, Printing and Reading”, also in *Osiris* 37.

⁵⁵ Rankin, “New World Drugs”, also in *Osiris* 37.

⁵⁶ On cases and observations in early modern medicine, see, for example, Lauren Kassell, “Casebooks in Early Modern England: Medicine, Astrology, and Written Records,” *Bulletin of the History of Medicine* 88, no. 4 (2014): 595–625; Volker Hess and J. Andrew Mendelsohn, “Case and Series. Medical Knowledge and Paper Technology, 1600–1900,” *History of Science* 48, no. 3–4 (2010): 288–314; Gianna Pomata, “Observation Rising: Birth of an Epistemic Genre, 1500-1650,” in *Histories of Scientific Observation*, ed., Lorraine Daston and Elizabeth Lunbeck (Chicago: University of Chicago Press, 2011), 45–80.

⁵⁷ Harold J. Cook, “Introduction” in *Translation at Work* (cit. note 7), 17

concerning new processes and *materia medica* was seen as a path to improve health provision.

Furthermore, our historical actors' focus on medical necessity often delineated what was translated. In Ragab's study, translation was driven by the quotidian needs of medical practice and communication between patients and practitioners. As such, the translation of concepts, symptoms, diagnostic categories, and names of *materia medica* were prioritised over the translation of specific texts or corpora. Everyday realities also deeply shaped the diverse choices made by translators of Monardes. For example, in order to convince German readers to use sassafras, the physician Johann Wittich (1537-1596) not only offered anecdotes on how the herbs were used locally but also extended the text by including practical recipes to help readers incorporate the drug into their own practices.⁵⁸ Finally, the focus on medical practice also highlights that the movement of knowledge was more often than not accompanied by the transfer of tacit skills, as in the case of the translation of Johann Rudolf Glauber's (1604-1670) *Furni nove philosophici*. In these instances, a mere linguistic translation whether textual or oral, simply did not suffice.⁵⁹

Perhaps due to the focus on practice, moreover, verification and validation occupied central roles. In the case of Hunyan and Liu Zhi, the continual hunt for and comparison of manuscripts was part of a larger scheme of textual refinement. As Ragab points out, in these cases, translation worked alongside other scholarly practices to weed out repetitious and inferior knowledge, resolve contradictions and cross-reference between works. In some instances, the needs of medical practitioners to offer assurances for safety and reliability of drugs and interventions lent a new edge to these processes, pushing practitioners to look beyond considerations of linguistic accuracy and the establishment of urtexts.⁶⁰ Other kinds of testing and trying play a key role in our stories. Experiential knowledge shines brightly in Rankin's study where Monardes and his translators argued for the importance of first-hand experience as a means to verify and authenticate New World drugs described in various works. Observations of successful cures were a key component of this "archive of practice". In other words, the practice of translating medicine was a dynamic one, requiring continual refinement, assessment, and reassessment.

Finally, as noted above, by placing translation and medical concerns front and center, these essays encourage us to attend to the "afterlives" of translated texts and archives. In

⁵⁸ Rankin, "New World Drugs" (cit. note 61).

⁵⁹ Leong, "Translating, Printing and Reading" (cit. note 60).

⁶⁰ Ragab, "Translation and the Making of a Medical Archive" (cit. note 59).

“Archives of the Sciences”, Lorraine Daston noted how early modern scientific archives were often described as “granaries”, “warehouses” or “treasuries” and served as “sites of discovery and serendipity”, as well as “provisions laid up for future inquirers”.⁶¹ Similarly, the editors and authors of the collective volume *Archival Afterlives* have offered nuanced readings of how early modern scientists engaged with paper archives both in terms of how they “attended to the material record of the scientific past” and “their efforts to preserve, transmit and make use of that record”.⁶² By adopting the twin analytics of translation and archive-making, our case studies extend these explorations in a number of ways.

Rankin’s notion of the “archive of practice” amplifies the voices of indigenous Amerindian actors and illustrates how their experiential knowledge was often obscured in sixteenth-century European translation of Monardes. Crucially, though the knowledge of indigenous actors and European translators/authors often travelled together, they were viewed in vastly different light in terms of authority and validity.⁶³ Focusing on the notion of “knowledge itineraries”, Leong’s essay impresses upon us the utility of reconstructing the backstories and afterlives of early modern printed medical works, and encourages us to view skill and knowledge acquisition, translation, printing, reading and compilation in a continuous spectrum – each as part of the same journey, suggesting that there is much to be gained by attending to multilingual, multi-sited long-view histories of book production and use.⁶⁴ This emphasis echoed in Weil’s contribution which concludes with brief illustrations of how three subsequent scholars expanded upon Lui Zhi’s *Human Nature and Cosmic Principles in Islam* in different ways, each reflecting their own interests. For Weil, the rich afterlife of Lui’s text attests to the open-endedness of philosophies of nature and views of the human body.⁶⁵ Finally, Ragab takes altogether a more expansive view, challenging historians of science and medicine to reflect upon the historiographical legacies of our narratives. *How* we view and value translation as an epistemic practice, he argues, has profound impact upon how we impose value and hierarchy in past knowledge systems, and especially in the context of archive-making.⁶⁶

In sum, by merging the analytical frameworks of the history of archives and of translation, the four essays in this section demonstrate that stories such as ours are about much more than just dissemination of knowledge. By attending to the moments before and

⁶¹ Daston, “The Sciences of the Archive” (cit. note 51), 171.

⁶² Keller, Roos, and Yale, *Archival Afterlives* (cit. note 50), 7.

⁶³ Rankin, “New World Drugs” (cit. note 61).

⁶⁴ Leong, “Translating, Printing and Reading” (cit. note 60).

⁶⁵ Weil, “Unveiling Nature” (cit. note 56).

⁶⁶ Ragab, “Translation and the Making of a Medical Archive” (cit. note 59).

after translation, rather than just the act itself, we place translation within webs of interconnected practices, and outline their role in constructions of cultural and linguistic hegemony. Our essays open new conversations about the authority of practice, complicate existing ideas about archives and textual scholarship, and bring to the fore how every moment of translation needs to be read with knowledge of its various contexts.

Section II: Translation beyond the Textual

The central focus on practice and material culture in the history of medicine pushes us to examine non-textual sources and in this section we consider how spoken language, images, objects, and practices passed into new zones of understanding and were reinterpreted or re-invented.⁶⁷ The essays illuminate the ways in which translation occurred across and between media: how oral knowledge of *materia medica* became verified in written form in glossaries (Hamza); how material objects, such as pipes, were described, used, and redefined in texts and through practical use, gaining new meanings in the process (Breen); how images were copied and re-interpreted to affirm or modify new medical theories (Trambaiolo); and how experiments and their conceptual implications were translated into various medical genres (Mukharji). By exploring how medicine was translated beyond the text, the papers in this section recover the work of invisible actors and their hitherto unheard voices, recalibrate ideas of time and place in the histories of medicine, science and technology and suggest new approaches to the complex interactions of knowledge traditions. From the blending of learned medicine with wider oral worlds of healing detailed in Hamza's essay to the repurposing of European anatomical images in a Sino-Japanese text on acupuncture discussed by Trambaiolo, translation practices can be seen as "braided sciences", as Projit Mukharji terms it, in which old and new traditions, or concepts from disparate medical systems interweave to

⁶⁷ On medicine and practice, see Mary E. Fissell, "Making Meaning from the Margins: The New Cultural History of Medicine", in *Locating Medical History: The Stories and Their Meanings*, edited by Frank Huisman and John Harley Warner (Baltimore and London, 2004), pp. 364-390; Pickstone and Worboys, "Between and Beyond" (cit. note 26); and Claudia Stein, "Introduction: The Early Modern Cultural History of Medicine" in Claudia Stein and Elaine Leong (eds.), *A Cultural History of Medicine in the Renaissance* (London and New York, 2021)

Other recent publications in which the definition of translation has been broadened to analyze translation across media in the history of science and medicine include Arredondo and Bauer, eds. *Translating Nature* (note cit. 14); Sumillera e.a., *Translation in Knowledge, Knowledge in Translation*. (cit. note 13); and Cook, *Translation at Work* (cit. note 7).

form a new pattern.⁶⁸ By considering these braided patterns of articulation (the visible, top strands) and disarticulation (the strands covered by others), we trace how some practices, theories, and concepts were successfully encoded and decoded while others were left by the way-side.

Focused on a fourteenth-century learned Persian medical text, the *Tibb-i Shihābī*, Shireen Hamza uses a study of vernacular glossaries of plant and disease names to recover the “lost” oral histories of medical practice.⁶⁹ She details how medical practitioners translated learned medicine to languages spoken by patients, suppliers of *materia medica* and pharmacists, emphasizing processes of verification and legitimation. Hamza argues that translation between textual and oral sources stood at the core of medical practices and involved hitherto hidden local actors. Alongside Pablo Gómez’s contribution, Hamza’s study makes clear that uncovering these rarely heard voices in a vernacular, non-hegemonic language decenters the focus of medical activities from learned, bookish practices to foreground vernacular medicine, thereby complicating traditional narratives.⁷⁰

The focus on the oral can also extend our understanding of medical practice in other ways, such as the identification of new “origin stories”. In his study of “pyric technologies”, Benjamin Breen argues that terminology for the pipe in European vernaculars contributes to understandings of the object’s origin within particular linguistic regions. He shows how “cachimbo”, the Portuguese term for pipe, etymologically, is linked to “kixima”, the object’s name in a West Central African Bantu language, which refers to a “water well”. Breen suggests that the West African word was picked up by Portuguese traders, through whom the word and the object became part of Portuguese society.

Adopting methodology from geography and archeology to analyze the object of pipes or *cachimbos*, Breen also attends to material histories.⁷¹ His revisionist “origin story” argues

⁶⁸ See Mukharji in this volume, as well as Projit Bihari Mukharji, *Doctoring Traditions: Ayurveda, Small Technologies, and Braided Sciences* (Chicago: University of Chicago Press, 2016), 25–27.

⁶⁹ On orality and translation, see Walter J. Ong, *Orality and Literacy: The Technologizing of the Word* (London, New York, 1982); Montgomery, *Science in Translation* (cit. note 13); Gordon Brotherston, “Contact situations and barriers to intercultural communication: Orality, non-alphabetic writing systems and translation” In *Übersetzung – Translation – Traduction: 1. Teilband* edited by Harald Kittel, Armin Paul Frank, Norbert Greiner, e.a. (Berlin, New York, 2008), 30–37; Paul F. Bandia, “Special Issue: Orality and Translation”, *Translation Studies* 8.2 (2015).

⁷⁰ Gómez, “[Un]Muffled Histories”, also in *Osiris* 37.

⁷¹ On objects as carriers of knowledge and the translatability of materials, see: Sven Dupré and Christoph Lüthy eds., *Silent Messengers: The Circulation of Material Objects of Knowledge in the Early Modern Low Countries* (Münster: Lit, 2011); Klein, Ursula, and Emma C. Spary, eds. *Materials and Expertise in Early Modern Europe: Between Market and Laboratory*. Chicago: University of Chicago Press, 2010. Beate Fricke and Finbarr Barry Flood, *Object Lessons: Artifacts as Archives of Pre-Modern Globalism*, Princeton University Press 2021 (forthcoming); Daston, Lorraine, ed. *Things That Talk: Object Lessons from Art and Science* (New York,

that pipe smoking was already present in the Old World via routes coming from sub-Saharan Africa and South Asia, albeit without the presence of tobacco. Thus, he challenges conventional histories which depict pipe smoking as a habit and technology that came to Europe from the New World. The new focus on non-European locality, space, and materiality foregrounds an understanding of the usage of pipes in the African context. Furthermore, Breen argues that, as with new *materia medica*, the introduction new medical technologies required not only new terminology, but also a translation into local medical theory. He offers potential routes for assimilation: either an adjustment and re-interpretation of local medical theories to fit the technology, or an adaptation of the technology to fit local theories. Breen's study offers an example for understanding complicated translational processes in different medical contexts between material objects and across immaterial subjectivities.

Examining translation through images and visual culture can also offer new perspectives. Vivienne Lo and Ronit Yoeli-Tlalim demonstrated, for example, that a style of medical illustration depicting cautery therapies like moxibustion “seems to have emerged simultaneously in 9th-10th century Europe, Tibet and China” complicating traditional narratives of transmission and dissemination.⁷² Similarly Daniel Trambaiolo's essay in this section takes us to nineteenth-century Japan, showcasing translation across visual media and turning our lens to the archival afterlives of translated anatomical texts and images, indicating how similar images can change purpose and meaning over time.⁷³ Trambaiolo argues that while the much studied first *rangaku* translators of the seventeenth century looked for ways to translate faithfully European texts on anatomy into Japanese, a second wave of translators working in the early nineteenth century re-interpreted the images to fit Sino-Japanese medicine.⁷⁴ For example, the Japanese physician Kako Ranshū reused European anatomical

London, 2004); Findlen, Paula, ed. *Early Modern Things: Objects and Their Histories, 1500-1800* (London and New York, 2013), and Bertoloni Meli, Domenico. *Thinking with Objects: The Transformation of Mechanics in the Seventeenth Century*. Baltimore: Johns Hopkins University Press, 2006, Chakrabarti, *Materials and Medicine* (note cit. 22).

⁷² Lo and Yoeli-Tlalim, “Travelling Light” (cit. note 4), 271.

⁷³ On images as carriers of translatable knowledge and information, see: Walter Benjamin, “The Work of Art in the Age of Mechanical Reproduction,” in *Illuminations*, ed. Hannah Arendt (London: Fontana, 1992), 211–44; Suzanne Kathleen Karr Schmidt and Edward H. Wouk eds., *Prints in Translation, 1450-1750: Image, Materiality, Space* (London: Routledge, 2017); Sietske Fransen and Katherine M. Reinhart, “The Practice of Copying in Making Knowledge in Early Modern Europe: An Introduction.” *Word & Image* 35, no. 3 (2019): 211–22. On epistemic images, see Lorraine Daston. “Epistemic images,” In: *Vision and its instruments: art, science, and technology in early modern Europe*, edited by A. Payne, (University Park, Pa., 2015), pp. 13-35; Marr, Alexander. “Knowing Images.” *Renaissance Quarterly* 69, no. 3 (2016): 1000–1013; Horst Bredekamp, *Theorie des Bildakts: Über das Lebensrecht des Bildes* (Frankfurt am Main, 2010). Lüthy, Christoph, and Alexis Smets. “Words, Lines, Diagrams, Images: Towards a History of Scientific Imagery.” *Early Science and Medicine* 14, no. 1 (2009): 398–439.

⁷⁴ Trambaiolo, “Translating the Visual Landscape”, also in *Osiris* vol. 37.

images in his *Kaitai chin'yō* 解体鍼要 [Essentials of anatomy and acupuncture] (1819) to show important acupuncture points rather than blood vessels. To aid readers' understanding and to adapt the images to his text of traditional Sino-Japanese medicine, Kako used short labels to convey the new meanings afforded to the images. Trambaiolo's study offers new ways of parsing how images might have been "read" by Sino-Japanese practitioners, as well as new ways to look at how medicine was translated from context to context.

In the final article in this section, Projit Mukharji outlines how three translator-practitioners struggled with translating the concept of blood circulation to their communities in the late nineteenth-century Bengal. He shows how this physiological concept was conveyed in three separate genres -- a schoolbook, an Ayurvedic book in verse, and a "materio-spiritual" guide to the human body--, and contends that social contexts determined how knowledge was translated to suit specific target audiences. Mukharji illustrates how studying how different knowledge traditions were "braided" together can allow us to attend to the (dis-)articulations of the various medical practices. For example, the concept of "death pulses" -- a means of foretelling the date of an individual's death -- is disarticulated from other types of pulse medicine in Ashutosh Mitra's *Nara Shareer Bidhan* [The System of the Human Body].⁷⁵ Mitra, who translated the notion of blood circulation for an explicitly Hindu Anglophone upper-caste audience, explained that the pulsation of blood is directly dependent on the beating of the heart. This was necessary to make clear that the concept he was elucidating was not related to the local tradition of pulse-diagnosis (*nadi-pariksha*). In this particular translation it is the Harveian notion of blood circulation that is articulated, at the cost of the traditional pulse theory. Mitra subsequently dismisses William Harvey as the discoverer of blood circulation by arguing that ancient Hindu physiologists already had this knowledge.

The focus on translation across media adds a tool to our metaphorical armamentarium to find the unwritten or silent voices of actors that were involved in the (daily) practice of medicine, while at the borders of these media we become aware of the ways in which traditions are braided into each other.

Section III: Translator-Practitioners, Expertise, and Authority

In the final section the focus shifts from the texts, materials, media, and practices of medical translation to the experiences and identities of those who translated and those who healed.

⁷⁵ Mukharji, "Casting Blood Circulations", also in *Osiris* vol. 37.

Exploring translation and medicine in tandem allows us to derive a number of insights related to the figure of the translator and the healer, pushing forward the existing literature relating both groups. First, the papers uncover the wide range of approaches used to translate expertise and to assert medical authority in ways that would be credible for new audiences. Translation and medicine could both be perilous pursuits. Healers attended those in the dangerous lands between sickness and health. Translators were often involved in the weird alchemy of converting concepts into another form, while maintaining as far as possible the substance and essence of the original. Second, these papers help us to reconstitute and analyse the key figure of the *translator-practitioner* who, we argue, became a special type of mediator.

The case studies in these articles reflect a wide spectrum of medical expertise and practice and uncover multiple ways in which the identities, and authority of healers were re-articulated and disarticulated through processes of translation. Montserrat Cabré's study traces how the figure of Trota of Salerno (*fl.* c. 12th C), and understandings about her general expertise in medicine were transformed through the translation of Latin treatises, and the development of a corpus of late-medieval Catalan vernacular texts related specifically to women's health. Pablo Gómez "unmuffles" the voices of medical practitioner-translators in the early modern Caribbean, where healers of African and Amerindian descent developed new presentations of their medical expertise through translation. Tara Alberts' account examines the re-invention of a French surgeon in seventeenth-century Siam (Thailand), exploring how his identity and authority over medical matters were re-cast by the local context as he attempted to translate his expertise. Hansun Hsiung's article turns to eighteenth- and early nineteenth-century Japan. He uncovers the strategies of Japanese translator-practitioners and physicians to translate Dutch approaches to medical ethics into frameworks commensurate with Japanese moral systems, in an attempt to reconcile the invasive violence of European surgical techniques with the Neo-Confucian virtue of "humaneness" 仁 (C: *ren*; J: *jin*).

Through these case studies we see that there are a number of comparisons which could be made between translators and healers, especially concerning articulations of claims to authority –textual or medical. For many healers and translators, authority was dependant on three key factors. First, in many cases, authority came from evidence of training or inculcation into a body of knowledge. During the period covered by these papers (thirteenth to eighteenth centuries), in many parts of the world, new ideas about the training, regulation,

and licensing of healers created new structures of knowledge exchange and new categories of protected spheres of learning: from the attempted delineation of the boundaries of medicine and surgery in seventeenth-century France alluded to by Alberts, to the expansion of new schools for physicians in eighteenth-century Japan mentioned by Hsiung.⁷⁶ The practice of translation too was the focus of sustained reflection, theorising, and debate as new cadres of specialists developed in a number of cultures.⁷⁷ In both, new norms and rules of practice emerged within specialised branches of practitioners; new forms of self-conscious identity developed.⁷⁸ In some cases authorities also sought to impose boundaries and rules on certain practices: from forbidding certain types of translation to policing healing practices. The African and Amerindian healers examined by Gómez, for instance, often fell afoul of the Inquisition as their ways of thinking about and treating the body were deemed incommensurate with European conceptions of licit healing. Renowned Amerindian healer Luis Andrea, for example, was banished and prohibited from curing.⁷⁹

Secondly, and connected to the first point, translators and healers both gained their authority due to their privileged access: they were both mediators between the individual seeking their aid and something otherwise unknown, incomprehensible, or unobtainable for their client. Translators claimed authority through their access to original texts or languages, and to essential cultural knowledge that their audiences did not have.⁸⁰ Healers similarly often had access to forms of practical, professional, and experimental knowledge, to embodied, or even cultural knowledge about techniques. The various groups of female experts – Jewish

⁷⁶ See Alberts, “Translating Alchemy and Surgery”, also in *Osiris* 37; and Hsiung, “Use Me as Your Test!” also in *Osiris* 37. For a cross-cultural consideration of training and status in medicine see also Pols, Thompson and Warner (eds), *Translating the Body* (cit. note 8).

⁷⁷ See especially, Peter Burke, “Lost (and Found) in Translation: A Cultural History of Translators and Translating in Early Modern Europe,” *European Review* 15, no. 1 (February 2007): 83–94; Kapil Raj, “Go-Betweens, Travelers, and Cultural Translators,” in *Companion to the History of Science*, ed. Bernard Lightman (Chichester, West Sussex: Wiley-Blackwell, 2016), Ch 3; Dejanirah Couto, “The Role of Interpreters, or *Linguas*, in the Portuguese Empire during the 16th Century”, e-JPH, 1 (2003); Najaf Haider, “Translating Texts and Straddling Worlds: Intercultural Communication in Mughal India.” *The Varied Facets of History: Essays in Honour of Aniruddha Ray* (2011): 115-24. Federico M., Federici, and Dario Tessicini (eds), *Translators, Interpreters and Cultural Negotiators. Mediating and Communicating Power from the Middle Ages to the Modern Era* (Basingstoke: Palgrave Macmillan, 2014).

⁷⁸ See for example David Gentilcore, *Healers and Healing in Early Modern Italy* (Manchester: Manchester University Press, 1998); Sandra Carvallo, *Artisans of the Body in Early Modern Italy. Identities, Families and Masculinities* (Manchester: Manchester University Press, 2007); Charles Burnett (ed.), *Arabic into Latin in the Middle Ages: The Translators and their Intellectual and Social Context* (London: Routledge, 2009); Angela K.C. Leung, “A ‘South’ Imagined and Lived: The Entanglement of Medical Things, Experts and Identities in Premodern East Asia’s South”, in *Asia Inside Out: Itinerant People*, ed. by Eric Tagliacozzo (Cambridge: Harvard University Press, 2019): 122-144.

⁷⁹ Gómez, “[Un]Muffled Histories” (cit. note 75).

⁸⁰ See especially Lawrence Venuti, *The Translator’s Invisibility* (cit. note 30); and Jean Selisle and Judith Woodsworth (eds), *Translators through history* (Amsterdam and Philadelphia: John Benjamins, 1995); Lydia H. Liu (ed.), *Tokens of exchange* (cit. note 29).

and Muslim women, Salernitan women - explored by Cabré, for example, were credited with especial expertise over matters of women's health.⁸¹ Similarly, Inquisition testimonies uncovered by Gómez reveal the esteem in which some Black Caribbean ritual practitioners held Amerindian healers, due to the latter's greater perceived understanding and mastery of the local natural world and its spiritual entities.⁸² Healers could also have special access to the body: as Cabré shows, women healers had access to female patients which was not available to Salernitan male physicians.⁸³ In Siam, Alberts demonstrates, the king's physicians were almost uniquely able to approach and touch his sacred body which was hidden even from the view of the rest of his subjects.⁸⁴ Paying attention to these forms of special access helps us to understand the position of both the healer and the translator.

Thirdly, moreover some translators and some healers had access to particularly esoteric, prestigious, and hidden knowledge. They had facility with sacred, ancient, or prestige written languages, or had access to privileged knowledge residing in private manuscript collections and libraries. Alberts, for example, notes the importance of jealously-guarded recipe collections and medical treatises, which were scattered with references and quotations in the ritual language Pāli. These were preserved in monastery and royal archives or handed down through medical lineages which claimed their origins lay with the Buddha's physician Jivaka. Esoteric knowledge could also include the hidden inner workings of the human body, etiology, and of certain cures when these matters were hidden from the uninitiated. Hsiung, for example, alludes to the anaesthetic developed by physician Hanaoka Seishū (1760-1835), an "unwritten proprietary secret" revealed only to his disciples.⁸⁵ Together, these papers illuminate how a focus on translation allows us to interrogate and differentiate between these features of authority-construction in histories of science and medicine.

Examining these processes can nuance our understanding of figures such as the "hybrid healer", the go-between, and the mediator who have played a significant role in the historiography of global (scientific) exchange.⁸⁶ The essays in this section also show how a

⁸¹ Cabré, "Female Authority in Translation", also in *Osiris* 37.

⁸² Gómez, "[Un]Muffled Histories" (cit. note 75).

⁸³ Cabré, "Female Authority in Translation" (cit. note 83).

⁸⁴ Alberts, "Translating Alchemy and Surgery" (cit. note 78).

⁸⁵ Hsiung, "Use me as Your Test" (cit. note 78).

⁸⁶ See for example Kapil Raj, Simon Schaffer, Lissa Roberts and James Delbourgo (eds), *The Brokered World. Go-Betweens and Global Intelligence, 1770-1820* (Sagamore Beach: Science History Publications, 2009); Burke, "The Renaissance Translator as Go-between" (op. cit. 57); Miles Ogborn, "'It's not what you know...': Encounters, Go-betweens and the Geography of Knowledge." *Modern Intellectual History* 10.1 (2013): 163-175; Anna Winterbottom, *Hybrid Knowledge in the Early East India Company World* (Cham: Springer, 2016);

figure arose who was both healer and translator at the same time. These “translator-practitioners” emerge from our analysis as a special type of mediator, who drew on the traditions and norms of both spheres of translators and healers, but for whom moments and spaces of translation were also often opportunities to create new articulations of identity, authority, and expertise. Equally, moving into new arenas could prompt translator-practitioners to disarticulate their identities and expertise, deprioritising certain medical skills, practices, or concepts. In short, we demonstrate how the translation of medicine provided special opportunities for certain individuals to completely re-invent themselves, in a process analogous to the other forms of translation already analysed.

The two identities of healer and translator were co-constitutive and mutually dependant in the figure of the translator-practitioner. Translator-practitioners could claim privileged access in both spheres, linguistic and medical. In Gómez’s article we see how Black Caribbean healers could, through access to a wide variety of African and Amerindian languages and to cross-culturally valent emergent diagnostic techniques concerning “bundles of disease”, create new signifiers of expertise. In Hsiung’s article, we see how translator-practitioners who were able to read texts of “Dutch Learning” (*rangaku*) integrated new ideas into existing moral and medical frameworks in order to promise new pathways to attempt cures of hitherto incurable diseases such as breast cancer. Drawing on the *Yōi shinso* [New Book of Surgical Medicine], physician Hanaoka Seishū (1760-1835) attempted the first surgical excision of a cancerous tumor from a patient in Japan. In the process he offered a new way of articulating the ethical relationship between patient and practitioner, and subsequently the forms of treatment which were morally permissible for a physician to “test” on his patient.

The pluralistic, polylingual worlds of the papers in this section underline how the human landscape of translator-practitioners remained complex. There was often a disjunction between contemporary normative and descriptive accounts of the worlds of translators and healers, and the messy complexity of reality. Those credited with the most authority by consumers could be outside systems of accreditation, and “untrained” according to the standards of normative literature. Bans by the Inquisition did little to diminish the value of the Amerindian and African healers discussed by Gómez, for example. Prohibitions on

Markku Hokkanen, and Kalle Kananaja, "Healers and Empires in Global History: Healing as Hybrid and Contested Knowledge" in their *Healers and Empires in Global History* (Cham: Palgrave Macmillan, 2019): 1-26;

practice were difficult to enforce, and such healers continued to enjoy high status and esteem amongst various communities.

Moreover, while discourses concerning both roles could increasingly emphasize the role of skilled, trained individuals, practising alone, in reality collaboration, competition and cooperation between multiple actors lay behind most undertakings in both medicine and translation.⁸⁷ These complex realities come into sharp focus in Gómez's reconstruction of the "cacophonous" early modern Caribbean, where "rich communal processes of translation" were developed by Amerindians and people of African descent concerning bodily matters. His paper also underlines the communal aspect of healing, where disease could be seen as a matter of "the disequilibrium not of individuals' bodies, but that of communities", the resolution of which necessitated mediation between a vast array of persons, material and immaterial ancestors, and non-human elements. Alberts' paper similarly uncovers the multi-lingual, cosmopolitan world of Ayutthaya, where healers from a wide range of traditions engaged in the exchange, translation, and re-invention of concepts, ideas and materia medica.

Finally, the papers illustrate how this privileged access, and this role as a special kind of mediator, could also make translator-practitioners ambivalent figures. Possessors of esoteric knowledge, they could both be feared or mistrusted at the same time as being sought after and fêted. Knowing more than their client, they could be suspected of deceit. Ambivalence about healers finds expression in negative stereotypes in a wide range of cultures, from the trope of the atheistic, self-serving physician common in medieval and early modern European popular culture, to depictions of uncertainties over physicians' skills and expertise in Qing China.⁸⁸

In colonial, semi- or peri-colonial spaces, understandings of these mediator figures can be particularly complex. In some reckonings, translation is the first, necessary stage of further destruction as territories are rendered comprehensible to the colonial gaze. The trope of the translator-as-traitor becomes particularly important in these narratives. We see this, for example, in the complex legacy of figures such as Malinche, Columbus' enslaved interpreter,

⁸⁷ See especially Martha P.Y. Cheung, 'Chinese Discourse on Translation as Intercultural Communication: The Story of *jihé* (幾何)', in Juliane House (ed.), *Translation: A multidisciplinary approach* (Basingstoke: Palgrave Macmillan, 2014), 56-72.

⁸⁸ See especially William Birken, "The Social Problem of the English Physician in the Early Seventeenth Century", *Medical History*, 31 (1987); Christi Sumich, *Divine Doctors and Dreadful Distempers. How Practicing Medicine Became a Respectable Profession* (Amsterdam: Rodolphi, 2013), 19-24; and Chu Pingyi, "Calendrical Learning and Medicine, 1600-1800" in *The Cambridge History of China, vol. 9: the Ch'ing Dynasty to 1800, part 2*, ed. by Willard J. Peterson (Cambridge: Cambridge University Press, 2016): 372-411.

who is at once celebrated, mourned, and vilified as empowered agent, victim, and facilitator of the colonial violence which destroyed her people.⁸⁹

Translator-practitioners in this narrative can also serve as double agents, to be treated with suspicion by the powerful.⁹⁰ Indeed, their endeavours could be a means of rebellion and resistance, of empowerment for the disempowered. The complexity of these “power-creation dynamics” of medical translation processes are uncovered by Gómez, who points out the longevity and “recalcitrant persistence” of the ideas of many African healers in the Caribbean, in the face of prosecution by ecclesiastical and colonial authorities.

Taken together, all the essays in this volume demonstrate the rich gains to be made when we move away from a primary emphasis on the traditional “key movements” of textual translation into and between dominant languages (Arabic, Latin, Greek, Chinese etc.), and on the “key moments” of translation deemed important to the narrative of European or “Western” medical and scientific history. Our engagement with concepts and terms as they were used by our actors, and as they are used in contemporary scholarship, push us to consider anew the extent to which taxonomies of thought and lived experience translate over time and space. It is crucial to assess what was and what could be translated; and what was likely to be lost, or changed beyond all recognition by these epistemic processes. Translation, we contend, was at once a process of creation and destruction which formulated new hybrids, even new languages of cure and medical practice. By bringing into focus the importance of the diverse translation practices undertaken by a wide range of groups and individuals, and of languages and concepts hitherto marginalised in grand narratives, our volume offers new ways to think about the creation of, and blurring of boundaries of knowledge in moments of intercultural contact.

⁸⁹ María Laura Spoturno, “Revisiting Malinche: A Study of her Role as an Interpreter,” in Federici, and Tessicini eds., *Translators, Interpreters and Cultural Negotiators* (cit. note 73), 121-35.

⁹⁰ Especially Mona Baker, *Translation and Conflict* (cit. note 42); Gentzler and Tymoczko, *Translation and Power* (cit note 42); Rafael, *Contracting Colonialism* (cit. note 42).