Introduction: How-to Books – the Birth and Development of an Understudied Genre

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How do I make soap? How do I dye textiles? What ingredients do I need for an effective medicine? How do I find and mine mineral resources? How do I prepare food that is as tasty as it is wholesome? Manuals of instructions and recipes offered a way out of awkward life situations. The proliferation of this book genre from the first centuries of printing is striking: instructional literature flooded the book market; printers and other versatile lay people made specialist knowledge accessible to a wider public in as catchy a way as possible. What does it mean when the handling of substances and devices was accompanied by a new medium that was supposed to enable people to understand a practical process and apply such knowledge to their own actions? Actually, they are two processes of producing: at the end of the production process there is not only a product, but in the description of the process another product, the instruction manual. An international workshop on this rather unassuming book genre was held between September 27 and 29, 2021, at the Duke August's Library (Herzog August Bibliothek) in Wolfenbüttel and, because of Covid-19, in virtual space. 'Why were these books so popular? Who used them and how? Do they even represent a clearly defined genre?' These questions were at the heart of the discussions.[1]

1 How-to Knowledge Is Different

Simple how-questions related to concrete problems keep society going: they have advanced and refined civilization. The corresponding medium is guides, instructions and recipes, a perennial favorite of mankind, from the manuscripts of the third century (e.g. Papryus Leidensis X) to the YouTube videos of our days.[2] There is hardly an area of life that cannot be cast in the form of

1 The German Research Community (DFG) provided the funding in the form of a pilot year launched on July 1, 2021 to initiate international cooperation. The Ferguson Collection housed at the University of Glasgow Library is probably the world's best early modern collection in this field.

2 The Papyrus Leidensis X (Leiden University Library) from the third century is considered the first written documentation of alchemy/chemistry and consists of more than a hundred

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a best-selling how-to book: from Kathleen Meyer's *How to Shit in the Woods* (Conrad Stein 1998) to Clancy Martin's *How Not to Kill Yourself* (Pantheon 2023), to name just two recent examples that address the all-too-human. Just as communicates as a human being, even if he remains silent, there is also a constructive moment in every piece of advice, even if one refuses it.[3]

Instructions and their manuals have become a key tool for finding one's way in an increasingly complex society. It is hardly surprising that flourished at the beginning of the modern era in the sixteenth century. Instruction manuals were ubiquitous at that time, in agriculture, astrology, culinary arts, economics, educational books, etiquette and courtesy, games and recreations, medical texts, military handbooks, mathematics and botany, to call upon the classification scheme of the Universal Short Title Catalogue (USTC), which at the same time conjure up the wealth of these sources on the screen in seconds with a click.[4] Furthermore there are instruction manuals as academic literature and not least as piety literature. Martin Luther wrote down the how-to of his new faith in *Enchiridion. Der kleine Catechismus* (Wittenberg: Lufft, 1529), where the basics of the Protestant church are dealt with in simple questions and answers, which everyone, especially young people and schoolchildren, should understand.[5]

What is so exciting and innovative about how-to literature? They transport concrete instructions for action from an inexhaustible variety of topics, which even non-experts can follow. Sometimes hard to grasp philosophically, practices of know-how are omnipresent in past and present.[6] Our smart phones

recipes in Greek dealing with the imitation of precious materials. See Lawrence M. Principe, *The Secrets of Alchemy* (Chicago: The University of Chicago Press, 2013), pp. 10–12.

3 Paul Watzlawick's *Anleitung zum Unglücklichsein* [Instructions for Unhappiness] (Munich: Piper, 2009, first 1983) appears as an advice parody, an anti-advice book. Yet many readers were to lead less unhappy lives after reading it.

4 https://www.ustc.ac.uk/search.

5 Andrew Pettegree, *Brand Luther: How an Unheralded Young Minister Turned His Small German Town Into a Center of Publishing, Made Himself the Most Famous Man in Europe and Started the Protestant Reformation* (New York: Penguin, 2015), pp. 260–264. But even more sophisticated devotional literature, the dialogue with God through prayers needed concrete instructions, see Thomas von Kempen, *Von der Nachfolge Christi*. Transl. and ed. by Bernhard Lang (Stuttgart: Reclam, 2022).

6 Gilbert Ryle, *The Concept of the Mind* (London: Hutchinson, 1949), chapter 2; Günter Abel: 'Knowing-How. Eine scheinbar unergründliche Wissensform', in Joachim Bromand and Georg Kreis (eds.), *Was sich nicht sagen lässt. Das Nicht-Begriffliche in Wissenschaft, Kunst und Religion.* Festschrift für Wolfram Hogrebe (Berlin: Akademie, 2010), pp. 319–340; Pamela H. Smith: *From Lived Experience to the Written Word. Reconstructing Practical Knowledge in the Early Modern World* (Chicago: The University of Chicago Press, 2022); Matteo Valleriani: 'The Epistemology of Practical Knowledge', in Matteo Valleriani (ed.), *The Structures of Practical Knowledge*, (Berlin, Springer: 2017), pp. 1–21; Jasmin Meerhoff, *'Read me!' Eine Kultur- und Mediengeschichte der Bedienungsanleitung* (Bielefeld: transcript, 2011).

apps with their algorithms apparently have their predecessor in how-to books of the early modern age, in the practical approach laid down in tried and tested rules.[7] Unlike propositional knowledge 'knowing-how' is not something that can be successfully stated in response to a question. Instead, it is manifested in the successful mastery of a practice. Any instruction on how to ride a bike for instance remains essentially incomplete if the instructed person does not get on the saddle and put the theoreticalknowledge into practice. Or in the words of John Ferguson, the passionate book collector in the field of early modern practical knowledge literature from Glasgow: 'No amount of reading will make a sculptor, or a gardener, or a shoemaker, or a surgeon, or a musical executant.'[8] The activities in question can only be learned by practising and performing them. In these sources from all areas of learning, knowledge apparently arises directly from 'making and knowing' (Pamela H. Smith). Such sources can be compared to scripts, dance choreographies or musical notation, text forms that refer to an activity and practice that is yet to be carried out. This is already latent with the English word 'recipe' that is in its sequence of letters identical to the Latin imperative of 'take', i.e. 'take!' or 'one takes', a formula that is used in cookbooks from the Renaissance until today.[9]

How to-literature codifies knowledge in a catchy, factual and didactic way. These books are usually brief and concise, a brevity that often finds expression in the terse imperative forms of instruction.[10] Presented in affordable treatises, written in vernacular languagesthese tracts of action are aimed at ever wider circles of society. How to-books enabled interested laypersons to obtain information largely independently of institutions and oral teaching. It enabled also socially less privileged groups, such as women and craftsmen who did not operate in the regulated knowledge milieus of university and academy, to acquire skills and knowledge.[11] The more comprehensive the how-to books

7 Lorraine Daston, *Rules. A Short History of What We Live by* (Princeton/Oxford: Princeton University Press, 2022).

8 John Ferguson, 'Notes on Some Books of Technical Receipts, or So-Called 'Secrets', *Transactions of the Glasgow Archaeological Society*, 2 (1882), p. 183.

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9 See Deborah L. Krohn, *Food and Knowledge in Renaissance Italy. Bartolomeo Scappi's Paper Kitchens* (Farnham: Ashgate, 2015); Elizabeth Spiller: 'Recipes for Knowledge. Makers' Knowledge Traditions, Paracelsian Recipes, and the Invention of the Cookbook, 1600–1660', in Joan Fitzpatrick (ed.), *Renaissance Food from Rabelais to Shakespeare. Culinary Readings and Culinary Histories* (Farnham: Ashgate, 2010), pp. 55–72.

10 Gianna Pomata, 'The Recipe and the Case. Epistemic Genres and the Dynamics of Cognitive Practices', in Kaspar von Greyerz, Silvia Flubacher, and Philipp Senn (eds.), *Wissenschaftsgeschichte und Geschichte des Wissens im Dialog/Connecting Science and Knowledge* (Göttingen: Vanderhoeck & Ruprecht, 2013), pp. 131–154.

11 See to gender relevance Alisha Rankin, *Panaceia's Daughters. Noblewomen as Healers in Early Modern Germany* (Chicago: The University of Chicago Press, 2013); Meredith K. Ray, *Daughters of Alchemy. Women and Scientific Culture in Early Modern Italy* (Cambridge (Mass.): Harvard University Press, 2015); Helen Smith, *Grossly Material Things. Woman*

became, the more diverse the knowledge they transmitted, the more other aspects of user behaviour came to the fore, such as encyclopaedic thirst and curiosity. How-to books have always served as entertainment. Obviously, it's just fun to watch people solve everyday problems, if you do not immediately indulge in incredible recipes of pure fantasy.[12]

2 Some Notes on Initiators, Content, and Formats

The transmission of knowledge depends to a decisive degree on the medium in which it is presented. It is precisely in printed form that early modern knowledge takes on its special character. If it is said that it was only in the age of typography that the author was able to fix himself and his material and present it in a controlled manner, the question arises as to who the author of how-to treatises is and how they came about, conceptually and technologically. We still know rather little about this. Undoubtedly, the serial product of an early modern how-to book, especially if it was also illustrated, cannot be called anything other than a logistical masterpiece, as it always had to be about accommodating implementable knowledge in a limited space. With every printed source, the network of relationships between author, engraver, and publisher would have to be scrutinized. The use of the conditional already indicates that this approach often fails due to a blatant lack of sources. Only rarely does the how-to book look itself in the mirror. For long stretches of the early modern period, the printing of books was an 'ars secreta', which as a rule did not pass on its knowledge in that public medium which it itself produced.[13] But even from a position where the sources are scarce, it remains undisputed that the degree of willingness to cooperate between printer, author, artist and

and Book Production in Early Modern England (Oxford: Oxford University Press, 2012); Katherine Park: *Secrets of Women. Gender, Generation, and the Origins of Human Dissection* (New York: Zone, 2006); Britta-Juliane Kruse: *'Die Arznei ist Goldes wert' – Mittelalterliche Frauenrezepte* (Berlin/New York: De Gruyter, 1997).

12 One particularly apt example among many others: John White's *A Rich Cabinet, with Variety of Inventions*, first published in 1651 by Whitwood in London, contains numerous instructions on how to conduct experiments, satisfy curiosity, solve problems and much more. There are instructions on arithmetic, on legerdemain (sleight of hand), painting, 'how to help deafness and to expel wind from the head' and how to make fireworks. The book went through at least eight editions until the 18th century. By the way: A section of the cover of this treatise adorns this Brill volume. See for today's time: Randall Munroe, *How to. Absurd Scientific Advice for Common Real-World Problems* (London: Murray, 2020).

13 Archives likewise report almost nothing if one wants to find out something about the activities and coordination that are indispensable for the production of this book genre.

engraver must have been considerable, as was the permanently lurking potential for conflict.

It is worth taking a closer look at the genre of the technical-instructional book, in German 'Kunstbüchlein' that responded to the ever-increasing demand for technical information in an era of economic upheaval. From the 1530s onwards, they appear in increasing numbers.[14] As William Eamon has discovered, they often go back to a handwritten original, which was edited differently depending on the preferences of the printer.[15] Ultimately, it was the printers who, through their interventions and paratextual accentuations, cast the 'leading manuscript' into divergent versions. The genre of the text remains the same; in both we are dealing with a recipe writing, which lists instructions for action for separating, dyeing and cleaning the metals. In addition, we find illustrations of stills and kilns, as well as an index to help locate specific recipes. A list of common Latin words with their translations into German also made access more convenient. Such booklets, with the help of which the user could try his or her hand at practices of tasting and distilling, mushroomed at the time.[16]

Printers, always with an eye on sales success, could not afford to ignore useful reading material, quite the contrary![17] It should be emphasized that it was not craftsmen from the various guilds, but printers who launched such books. They directed the dissemination of technical information in the first half of

14 See *Rechter Gebrauch der Alchimei* (Frankfurt am Main: Egenolff, 1531), USTC 690050 and *Alchimi und bergwerck* (Straßburg: Cammerlander, 1534) USTC 610654. The world of printers was not yet so large at that time. We must assume that the two printers (Christian Egenolff and Jacob Cammerlander) knew each other.

15 William Eamon, Science and the Secrets of Nature. Books of Secrets in Medieval and Early Modern Culture (Princeton: Princeton University Press 1994), pp. 112–133. See also the full-text thesis available on the web: Ernst Striebel, *Das Augsburger Kunstbuechlin von 1535. Eine kunsttechnologische Quellenschrift der deutschen Renaissance* (Technische Universität Munich 2007) [https://docplayer.org/4598921-Ernst-striebel-das-augsburger-kunstbuechlin-von-1535-eine-kunsttechnologische-quellenschrift-der-deutschen-renaissance.html].

16 As William Eamon and Michael Giesecke have documented, a wave of 'how-to booklets' is flooding the still relatively young book market; Michael Giesecke, *Der Buchdruck in der frühen Neuzeit. Eine historische Fallstudie über die Durchsetzung neuer Informations- und Kommunikationstechnologien* (Frankfurt am Main: Suhrkamp, 1998, first 1991); pp. 504–548; William Eamon, 'Arcana Disclosed: The Advent of Printing, the Books of Secrets Tradition and the Development of Experimental Science in the Sixteenth Century', in *History of Science* 22 (1984), pp. 111–150.

17 The first printing workshops were only profitable because they were able to sell current mass-produced goods, e.g. by reproducing municipal ordinances, indulgence slips and other cheap print; see Andrew Pettegree, *The Book in the Renaissance* (New Haven/London: Yale University Press, 2011), pp. 31–32.

the 16th century. Although these works originated in the workshops of the craftsmen, the information was collected and disseminated by printers (who were craftmen too, by the way) who recognized the needs of a new readership. To the often haphazardly compiled recipes that used to circulate among craftsmen, printers added title pages, tables of contents, glossaries of technical terms, and prefaces: anything that facilitated reception. They were also the ones who rearranged the texts, deleting outdated recipes and supplementing them with new ones. Often the recipes had to be translated into common vernacular languages.

As long as the transmission of knowledge and information was directly tied to paper and ink, the format of the medium has been of great importance for reading practises. While today entire libraries can be easily downloaded from clouds onto devices whose format ranges between a cigarette pack and a chocolate bar, it made a big difference for reading practice in the early modern era whether one devotes oneself to the Christian tradition with the help of a Gutenberg Bible or a so-called thumb Bible.[18] The format of the how-to book was usually handy, sometimes so small and thin that one could effortlessly slip it into one's pocket. With this genre of book, the individual user no longer had to go to the book, but the book could accompany him, so to speak, as a companion at work, on journeys or in other life situations: a vademecum, in other words.[19]

As is well known, the format is determined by the number of times the sheet is folded. The more often it is folded, the smaller the book. Thus, a folio sheet folded three times can result in an eight-page work with 16 pages in a handy octavo format. Two or four such sheets yielded handsome booklets of 32 or 64 pages, apparently the most popular size for how-to books.[20] Even if in most cases the how-to book is handy and small, it can be quite voluminous. The duodecimo treatise *Ein Nutzlichs Artzneybuechlin / wie man*

18 The term 'Thumb Bible' first appeared in print in a reprint of John Taylor's *Verbum Sempiternum* in 1849. Comparable minibooks had appeared since the early 17th century, see Louis Bondy, *Miniaturbücher von den Anfängen bis heute* (Munich: Pressler, 1988).

19 The term has been used since the end of the Middle Ages as a generic name and title word for first mainly theological and liturgical, then since the 16th century mainly medical compendia and manuals. Since then it has established itself as a common title word for manuals, guides and advice literature of all kinds and even for dental care products (also Venimecum, Enchiridion), Gundolf Keil, 'Vademecum', in *Lexikon des Mittelalters* 8 (2003), Sp. 1363.

20 The ratio of height to width varies depending on the type of folding. For the 6°, 12° and 24° formats, the width is narrower in relation to the height than for the 2°, 4°, 8° and 16° formats. In the 'duodec', the smallest of the historical book formats, twelve sheets are obtained from one sheet.

leibliche gesundheit halten soll (Strasbourg: Bertram, 1606, HAB xb 10270) by the Paracelsist Michael Toxites runs to several hundred pages; a hand book on the profession of notary, can reach well over 1,000 pages.[21] But the complete opposite was also possible under the label 'Büchlein': thus the incunabulum 'Dies büchlin weiset die außlegung des schachzabel spils' in folio format gives instructions on chess on 39 sheets.[22] It seems that equally the small, thick as well as the large, usually thinner treatise be used for an instruction book, especially in the period of early printing. In the long run, there is a general trend towards the small format on a few dozen pages.

As the above examples show, in German-speaking countries, this type of book often bears the term 'Buchlein' as a diminutive of 'book' in its title.[23] Richard Brunckh's *Bad-Und Trinck-Chur-Büechlin* (Freiburg im Breisgau: Meyer, 1669) comprises 78 octavo pages on the correct behavior in a healing spring (HAB: Xb 12° 255). From the *Kriegs-Büchlein* (Zurich: Bodmer, 1659) by Hans Conrad Lavater to the anonymous *Rechen-Büchlein* (Ulm: [Görlin?], 1659), the 'little book' represented a passe-partout for every niche of practical knowledge. Often the title refers to 'Probir büchlein' (assaying booklet) or 'Nützlich büchlin' (useful booklet). John Ferguson whose collection is teeming with 'little octavos and duodecimos which flowed from the press in a copious stream' lists 'Berg-, Probier- bzw. Kunstbüchlein' as a Germanism because there was no English equivalent in the first half of the sixteenth century.[24] It happened more and more often that inquisitive people were equipped with a little book in their hands when they were on the move, with a compass, so to speak, that always pointed in the direction of proper practices. The title 'Nützlich Büchlin' underlines the practical character, not only in terms of the field of knowledge presented, but also the associated storage medium, small format and paperback, which could be carried everywhere.[25]

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21 *Manuale Notariorum Bipartitum Notariat: Hand-Buechlein* (Basel: Henric Petri, 1630), HAB: Xb 10806.

22 Jacobus de Cessolis, *Dies büchlin weiset die außlegung des schachzabel spils* (Strasbourg: Knoblochzer, 1483), HAB: 11.4 Rhet. 2°.

23 See to 'Büchlein' Stefan Laube, "Wer langweilig ist, der kauffe mich'. Beiläufiges zum 'Büchlein", in: *Ephemera. Abgelegenes und Vergängliches in der Kulturgeschichte von Druck und Buch*. Festschrift für Petra Feuerstein-Herz, eds. by Hartmut Beyer and Peter Burschel (Wiesbaden: Harrassowitz, 2022), pp. 115–136.

24 Ferguson, *Books of Secrets*, pp. 10–11; see also Ernst Darmstaedter, *Berg-, Probier-, und Kunstbüchlein* (Munich: Verlag der Münchner Drucke, 1926).

25 The genre of 'Büchlein' also includes the so-called 'format büchlein' printed in the 17th century, a helpful guide in the layout of the book page for the typesetter. These treatises were less concerned with book formats such as quarto, octavo or duodec, but rather – as Gustav Milchsack, ducal librarian at Wolfenbüttel clarified at the end of the

3 Thoughts on an Exquisite Collection

'How-to Book' is the conceptual category that is used here repeatedly to capture the specifics of a text genre from different perspectives, in which theoretical insights are prepared in such a way that they can actually be put into practice: 'tracts of action' in other words.[26] There are other, more or less appropriate terms for a cross-segment book genre in which knowing-that and knowing-how converge, such as 'recipe book', 'book of secrets' or 'secrecy literature' [Secretenliteratur], 'advice book', and 'instruction manual'. In the German-speaking world, the historical term often used is 'Kunst-, Wunder- und Hausbuch' [Art, Wonder and House Book],[27] and in the community of recent research 'Historische Wissens- und Gebrauchsliteratur' [historical knowledge and utility literature].

The Ferguson Collection at Glasgow University Library is inextricably linked with the formula 'Books of Secrets'. For the book collector John Ferguson treatises acquired this label above all when they contained recipes as openers of secrets.[28] Ferguson was Regius Professor of Chemistry at the University of Glasgow between 1874 and 1916, and at the same time, as a passionate book collector, he displayed an eminent interest in cultural history.[29] Ferguson worked in the heyday of the British Empire, in the tailwind of a rapid technological development that was unparalleled. In this time of rescue operations, in which sources of the past were increasingly being buried, the collector handled the category of the secret; in a very specific sense: under this label,

19th century – with 'the formats which the book printer makes when he determines the spatial dimensions (height and width) of the type columns and the white bands (webs) surrounding them.' [die Formate, welche der Buchdrucker macht, wenn er die räumlichen Abmessungen (Höhe und Breite) der Schriftkolumnen und der sie umgebenden weißen Bänder (Stege) bestimmt] Gustav Milchsack, 'Die Buchformate, historisch und ästhetisch entwickelt', in *Verhandlungen der 44. Versammlung deutscher Philologen und Schulmänner in Dresden*, 30.9.1897, pp. 177–181, here p. 177. See also: Martin Boghardt, 'Formatbücher und Buchformat. Georg Wolffgers *Format-Büchlein*, Graz 1672/1673', in Martin Borghardt, *Archäologie des gedruckten Buches*, ed. by Paul Needham and Julie Boghardt (Wiesbaden: Harrassowitz, 1988), pp. 77–103.

26 Tillmann Taape brought me to this formula when he speaks of 'texts of action' in his contribution to this volume.

27 Not art in the sense of fine art, of course, but in the sense of skill and ability, which always had an inherent magic of mystery.

28 John Ferguson, *Books of Secrets. A Paper read before the Bibliographical Society*, April 21, 1913 (London: Blades East & Blades, 1914), pp. 5–33.

29 David Weston: 'A Magus of the North? Professor John Ferguson and his Library', in *The Meanings of Magic. From the Bible to Buffalo Bill*, ed. by Amy Wygant (New York/Oxford: Berghahn, 2006), pp. 161–177.

Ferguson understood knowledge or above all as a practice that uncovered what had previously been hidden. With him, the transformation of knowledge as a thesaurus of secrets and miracles into a fund of phenomena that man can use celebrates its resurrection – 'Secret' as a concept that dissolves itself through disclosure.[30]

Ferguson collected many early printed works, which dealt with a technological-practical approach in the world of knowledge. Ferguson's neologism 'Books of Secrets' may look like an ex post facto term, but at the same time it is elastic enough to do justice to the specificity of the epoch, since in the 16th and 17th centuries the wording of the titles of the relevant books often speaks of 'secreti' or 'heymlichkeit'. Ferguson's original interest was in the history of technology. He had in mind something that had long existed in German lands. Ferguson explicitly referred to the five-volume *Beyträge zur Geschichte der Erfindungen* [Contributions to a History of Inventions] by Johann Beckmann, published in Leipzig at the end of the eighteenth century. As is the way with the passion of collecting, it is difficult to control. In 1882, John Ferguson was to divide his ever-growing book collection into five thematic groups: (1) secrets of nature (general natural history, cosmogony), (2) natural magic (optics, acoustics, magnetism), (3) chemical, pharmaceutical, and medical secrets, (4) tracts on life and generation, physiological secrets, (5) treatises on technical and art secrets. In the last section, actually the starting point of his collecting interest, Ferguson still made the following distinction: 'general collections containing receipts relating to a variety of arts, and special collections containing receipts of use in one art or handicraft only.'[31]

As soon as one takes a look at the printed inventory of the Ferguson collection, one is indeed struck by the broad range of areas of knowledge:[32] chemistry alone, with its important subsections of metallurgy, distillation, fireworks, cosmetics, colour production and the dyeing of certain materials, opens up a magnificient forum of diverse knowledge: the treatises on body care lead over to fields of activity such as household, agriculture, gardening, which are far less represented overall, but nevertheless occur again and again. What is also striking, however, is how strongly Ferguson has collected so called

30 Eamon, *Science and the Secrets of Nature*; see also Elizabeth Spiller, 'Introductory Note', in *Essential Works for the Study of Early Modern Women:* Part 3. Selected and Introduced by Elizabeth Spiller (Aldershot: Ashgate, 2008), pp. xi–xvi.

31 John Ferguson, 'Notes on Some Books of Technical Receipts, or So-Called 'Secrets', *Transactions of the Glasgow Archaeological Society*, 2 (1882), pp. 180–197, here p. 183.

32 John K. Ferguson, *Catalogue of the Ferguson Collection of Books mainly Relating to Alchemy, Chemistry, Witchcraft and Gipsies in the University of Glasgow* (2 vols, Glasgow: Maclehose, 1943).

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irrational books, on magic and alchemy. In addition, there are numerous compilation works that unite numerous areas of knowledge between two covers in a fascinating potpourri. Ferguson's original focus on the history of technology has thus expanded considerably, to the extent that the category of the secret should also become increasingly iridescent in his work. 'Secret', then, no longer in the status of its uncovering, but in some sense of a perpetuation of the occult as well.[33]

4 Research Status and Starting Point

For several decades, Ferguson's approach to early modern knowledge was forgotten. It was not until William Eamon's groundbreaking study *Science and the Secrets of Nature. Books of Secrets in Medieval and Early Modern Culture* (Princeton University Press, 1994), the Books of Secrets came to the fore again. At the same time, a fruitful thematic narrowing took place: From now on, Books of Secrets had to be concrete, transparent guides, instructions and recipe books, 'The Age of How-to', that is what Eamon called the sixteenth century.[34] Accordingly, the term 'how to' primarily refers to clearly and concretely formulated instructions and advice on how to cope with everyday life, from removing stains to operating a complex appliance to preparing a healthy meal.[35] In this way Eamon was able to create an awareness emerged of the relevance of these writings for the establishment of the modern scientific paradigm: no wonder that a flourishing line of research has since been established in this area.[36] In the last years postcolonial and philosophical accents have enriched this topic. Recent research has argued that the genre of the recipe has been suitable for

33 How else can it be explained that Ferguson also includes 25 treatises by Michael Maier, the Paracelsist and personal physician of Emperor Rudolf II., who conveys his knowledge of nature in coded emblems and mythological allusions: Ferguson, *Catalogue*, vol. 2, pp. 438–441.

34 Eamon, *Science and the Secrets of Nature*, p. 126.

35 The fact that the how-to book, which can hardly be surpassed in transparency and didacticism, are by no means completely free of secrets results solely from the fact that they usually transport a good portion of implicit knowledge, knowledge that is not formulated, although this knowledge would be necessary if one wanted to actually implement what is described.

36 See Elaine Leong, *Recipes and Everyday Knowledge. Medicine, Science, and the Household in Early Modern England* (Chicago/London: The University of Chicago Press, 2018); Alison Kavey, *Books of Secrets. Natural Philosophy in England, 1550–1600* (Urbana: University of Illinois Press 2007); Karel Davids: 'Craft Secrecy in Europe in the Early Modern Period: A Comparative View', in *Early Science and Medicine* 10 (2005), pp. 341–348.

translating knowledge from one culture to another on a global scale.[37] Then how-to knowledge is quite significantly intertwined with tacit and procedural knowledge. The gap between 'knowing-how' and 'knowing-that' has been increasingly recognised as research problem in philosophy.[38] Current research shows some deficits, for example when it comes to systematically accessing details. Each individual recipe would have to be classified as precisely as possible according to ingredients, procedures, use and modes of action.[39] Digital Humanities methodologies have the potential to help uncover unidentified patterns, trends, and developments through quantitative approaches and data visualisations.

To this day, it is mainly handwritten recipes that have attracted scientific interest, and their transformation into print is analyzed much less frequently.[40] Yet it was this change of media that enabled the widespread dissemination of practical information. Relevant are above all overlooked but ubiquitous, thematically oriented small formats, but also compilations in which recipes or instructions are united encyclopaedically.[41] Special attention should be paid to cheap printed books which mostly in a few dozens of pages convey practical advice from all possible fields of knowledge.[42]

The spectrum of early modern knowledge literature is wide and varied: from the groundbreaking single study that was hardly read, such as that of Copernicus in 1542 and procedures accompanying manuals and handbooks to encyclopedic reference works and compilatory florilegias ('Buntschriftstellerei')

37 Marta Hanson and Gianna Pomata: 'Medicinal Formulas and Experimental Knowledge in the Seventeenth-Century Epistemic Exchange between China and Europe', in *Isis*, 108 (2017), pp. 1–25; Amanda E. Herbert and Jack B. Bouchard: 'One British Thing: A Manuscript Recipe Book, ca. 1690–1730', in *Journal of British Studies*, 59 (2020), pp. 396–399.

38 Following Gilbert Ryle's *Concept of the Mind*, our ability to act, determined by application-related skills, seems to resist being conceptually defined precisely; John Bengson and Marc A. Moffett (eds.): *Knowing How. Essays on Knowledge, Mind, and Action* (Oxford: Oxford University Press, 2012).

39 William Eamon, 'How to Read a Book of Secrets', in Elaine Leong and Alisha Rankin (eds.), *Secrets and Knowledge in Medicine and Science, 1500–1800* (Farnham: Ashgate, 2011), pp. 23–46, here p. 41.

40 See the web portals *The Recipes Project. Food, Magic, Art, Science, and Medicine* [https://recipes.hypotheses.org/] and *Netzwerk. Historische Wissens- und Gebrauchsliteratur* [https://hwgl.hypotheses.org/], which both are based on handwritten sources.

41 Laura Balbiani, *La magia naturalis di Giovan Battista della Porta. Lingua, cultura e scienza in Europa all'inizo dell'età moderna* (Bern: Lang, 2001); Simone Zweifel, *Aus Büchern Bücher machen. Zur Produktion und Multiplikation von Wissen in frühneuzeitlichen Kompilationen* (Berlin/Boston: de Gruyter, 2022).

42 Margaret Spufford, *Small Books and Pleasant Histories. Popular Fiction and its Readership in Seventeenth Century England* (*Cambridge: Cambridge University Press, 1981*).

that indulged in wild cut-and-paste.[43] Although all of these textual genres feed into the book genre we are interested in, how-to books have very particular characteristics: the knowledge in these books is less science than everyday coping, and the knowledge speaks directly to the user by way of performative acts. Slogans like 'The proof of the pudding is in the eating', 'Try and see' or 'There is nothing good unless you do it' come to mind for this kind of lore. The aim of this volume is to characterise this type of source. Current research lacks a typological approach. Up to now, advice literature has been analysed within specific fields of knowledge instead of analysing their commonalities as a text genre.[44] The following overarching key points, common to all how-to books, suggest themselves: Books are taken in the hand and leave traces of use. Books are subject to a change of media, from manuscript to printed work to digitization. In illustrated books, the question of visual translation is relevant. In terms of content, the written instructions are about practical implementation, whether they are followed consistently or encourage improvisation. These four focal points of the conference volume may serve as the instruction manual, so to speak, a guide to how research should best deal with this type of book.

In his introductory contribution, Stefan Laube (Berlin) discusses the volume concept using the example of plague treatises, a genre of printed instruction that was already documented in numerous copies in the last decades of the 15th century, in the age of incunabula. If the introduction of printing coincided with a plague epidemic in certain regions, we can assume that printing began

43 Henry E. Lowood/Robin E. Rider, 'The Scientific Book as a Cultural and Bibliographical Object', in *Thornton&Tully's Scientific Books. A Study of Bibliography and the Book Trade in Relation to the History of Science* (Aldershot: Ashgate, 2000), pp. 1–26; Tara Nummedal and Paula Findlen, 'Word of Nature: Scientific Books in the Seventeenth Century', in *Thornton&Tully's Scientific Books. A Study of Bibliography and the Book Trade in Relation to the History of Science* (Aldershot: Ashgate, 2000), pp. 164–216; Margaret Bingham Stillwell, *The Awakening Interest in Science During the First Century of Printing, 1450–1550* (New York: Bibliographical Society of America, 1970); Owen Gingerich, *The Book Nobody Read. In Pursuit of the Revolutions of Nicolaus Copernicus* (London: Heinemann, 2004); Angela N.H. Creager, Mathias Grote and Elaine Leong, 'Learning by the Book: Manuals and Handbooks in the History of Science', *The British Journal for the History of Science*, Themes, 5 (2020), pp. 1–13; Flemming Schock, 'Wissensliteratur und 'Buntschriftstellerei' in der Frühen Neuzeit: Unordnung, Zeitkürzung, Konversation, Einführung', in Flemming Schock (ed.), *Polyhistorismus und Buntschriftstellerei. Wissenskultur und Wissensvermittlung in der Frühen Neuzeit* (Berlin: de Gruyter, 2012), S. 1–20.

44 So far it has rather been the case that 'such books of recipes and secrets have not been studied as a genre, but rather have generally been treated separately in terms of their subject matter', Pamela H. Smith: 'What is a Secret? Secrets and Craft Knowledge in Early Modern Europe', in Elaine Leong and Alisha Rankin (eds.), *Secrets and Knowledge in Medicine and Science, 1500–1800*, (Farnham: Ashgate, 2011), pp. 47–66, here p. 52.

with a publication on how best to behave in times of fatal diseases.[45] The motto of these texts was to be concise, comprehensible and easy to remember, which is already striking with the title. Whether *Kurtze Berichte* or *Kurtze Unterweisungen*, nearly 100 relevant titles with the adjective 'short' can be found in the index of printed works published in the German language area (VD16, VD17).[46] Most of the nostrums presented in the plague tracts were of little medical benefit. The authority to order anything at all creates trust and welds society together; a mechanism that has also been the norm in the hard times of Covid-19. In rules of conduct, the plague guidebooks were not all that wrong in terms of content, even if no one really knew at the time how the plague develops and spreads. It was important to avoid crowds and everything with which the plague sufferer came into contact. Plague tracts show how 'modern' the contemporaries of the sixteenth century already were or how 'archaic' we still (have to) act in the twenty-first century when nature challenges us.

5 Materiality and Traces of Use

This volume does not focus on books that primarily have representative and decorative functions. Instead, we investigate tracts that have not only been read, but actually used.[47] Like any printed book, the handy how-to book is made of an interplay of materials, paper, thread, glue and ink., and is subject to physical processes of adaptation and change that reflect specific user experiences, preferences and interests.[48] Handwritten comments in the margins show that

45 The southern German city of Ulm is apparently a good example to confirm this claim.

46 Verzeichnis der im deutschen Sprachraum erschienenen Drucke des 16. Jahrhunderts (http://www.vd16.de/). Verzeichnis der im deutschen Sprachraum erschienenen Drucke des 17. Jahrhunderts (http://www.vd17.de/).

47 See Bradin Cormack and Carla Mazzio: *Book Use, Book Theory: 1500–1700* (University of Chicago Library, 2005). Most of the sources we are dealing with here were never created with a view to conservation. As a rule, they existed only as long as they were needed. At best, they were carelessly put aside, if not thrown away. The estimated number of irretrievably lost treatises must be considerable; see Andrew Pettegree, 'The Legion of the Lost. Recovering the Lost Books of Early Modern Europe', in Flavia Bruni and Andrew Pettegree (eds.), *Lost Books. Reconstructing the Print World of the Pre-Industrial Europe* (Leiden/Boston: Brill, 2016), pp. 1–27.

48 Ann Blair, 'Annotating and Indexing Natural Philosophy', in Marina Frasca-Spada and Nick Jardine (eds.), *Books and the Sciences in History* (Cambridge: Cambridge University Press, 2000), pp. 69–89; William H. Sherman, *Used Books. Marking Readers in Renaissance England* (Philadelphia: University of Pennsylvania Press, 2008); Petra Feuerstein-Herz, "Von heimlichkeit der natur'. Benutzungsspuren in alchemischen Anleitungsbüchern', in *Medium Buch* 1 (2019), pp. 45–67; Tobias Winnerling, 'Das Kräuterbuch als

recipes were altered by readers. Some contain underlining, corrections and additional recipes, sometimes personal and copied from other texts including corrections, or reader judgements such as 'very good'.

On the basis of copies from the holdings at the Herzog August Library Petra Feuerstein-Herz (Wolfenbüttel) makes it clear that books can be much more than a mere reading medium, as they still contain a lively discourse that is often expressed in imperatives, as 'take' (Nimb) and 'do' (Thu) in printed texts are are embellished with 'check' (Prüff) and 'note' (Merckh) among the handwritten annotations left by readers in the margins of surviving copies. Whether for field measurement, distillation or alchemy: the printed copy always included something like a notebook. Procedures and recipes from other books or created by the user himself wander onto the empty spaces of printed pages, the inside covers, endpapers, or even on blank flyleaves bound into the books. Such books, consumables, working tools and reception media all in one, were certainly aimed at a professionally informed audience; pure laymen could do little with such books.

No fewer than 27 copies of Gregor Reisch's *Margarita Philosophica* written in the 1490s by Gregor Reisch and first published in 1503 are kept in the University of Glasgow Library, 21 of them from the Ferguson collection. For Robert MacLean (Glasgow) this is a welcome opportuniuty to go in search of clues, not least to find out how how-to thought also found expression in this encyclopedic handbook for students. The *Margarita*, richly decorated with striking woodcuts on the seven liberal arts, offered young people practical insights in techniques required in various professions. Annotations in every second copy, then recurring navigation aids such as bookmarks still testify today to how intensively this treatise has been used. The know-how of astrology conveyed through the frontal view of a naked zodiac man was to be counteracted by massive interventionby official censors or some users, who felt offended.

6 Entanglements of Jotted, Printed and Digital Steps

The issue of media change, whether from orality to writing or from handwriting to, always means that t different media continue to exist side by side in

frühneuzeitliches Gebrauchs-Objekt', in Friederike Elias, Albrecht Franz, Henning Murmann, and Ulrich Wilhelm Weiser (eds), *Praxeologie. Beiträge zur interdisziplinären Reichweite praxistheoretischer Ansätze in den Geistes- und Sozialwissenschaften* (Berlin: de Gruyter, 2014), pp. 165–199.

manifold connections.[49] It is obvious that the invention of writing, paper as well as printing, did not lead to people no longer communicating orally with each other any more than the emergence of radio and television led to the disappearance of the book or newspapers. Old media incorporate new ones, process them further, change them, but hardly superceded them, a process that presents itself in a completely new way in the digital age.[50]

How this overlap, the interplay of oral, handwritten and printed components can be studied in more detail was the subject of Sven Limbeck (Wolfenbüttel). He raised the question of what recipes are, what their codification means, and how they relate to books. In doing so, he found that the actual medium of the recipe is not so much the book as the loose leaf of indeterminate format, the handwritten notes. This pragmatic form of the recipe with indication, ingredients and instructions is hardly to be found in the Wolfenbüttel collections. Rather, one encounters printed recipe collections or recipe booklets, in which text and medium correspond, since the print dispositif presupposes the conceptual reproduction of texts. On the other hand, in manuscript mixtures typical of the late Middle Ages, discrepancies in recipe records are conspicuous, especially when the recipes or recipe collections do not form a recognizable thematic connection with the rest of the manuscript's contents.

Tillmann Taape (Berlin), former member of the *Making and Knowing Project* at Columbia University, traces a broad medial arc from an anonymous sixteenth century instructional manuscript (BnF Ms. Fr. 640) to its comprehensive analysis with the digital tools available to us today. This dense and vivid instruction book from France on the production of fancy objects for the Kunstkammer, documents the material practices of an ongoing work-in-progress, including numerous additions and corrections based on trial and error ('texts of action'). First, Taape focuses on the how-to of digital translation. The digital medium is predestined to present the materiality and genesis of the manuscript, from composition to later additions and subsequent material interventions, much more comprehensively and clearly than a traditional print edition. But there is

49 See by proxy many other studies Asa Briggs and Peter Burke (with Espen Ytreberg), *A Social History of the Media. From Gutenberg to Facebook*. Fourth Edition (Cambridge: Polity, 2020).

50 The printed book in particular becomes the stage for media change: Jan-Dirk Müller, 'Der Körper des Buches. Zum Medienwechsel zwischen Handschrift und Druck', in Hans Ulrich Gumbrecht and Karl Ludwig Pfeiffer (eds.), *Materialität der Kommunikation* (Frankfurt a. M.: Suhrkamp, 1988), pp. 203–217. See to the relationship of text and hypertext Eva Martha Eckkrammer, *Medizin für den Laien: Vom Pesttraktat zum digitalen Ratgebertext* (Berlin: Frank&Timme, 2016), pp. 1074–1080.

also great potential on the opposite side. In the tailwind of a burgeoning cultural studies, responsible for everything that has to do with the transformation and refinement of materials, recipes from the sixteenth century can always actually be tried out by researchers of our time which generates surprising insights into the early modern understanding of nature and matter.

Simone Zweifel (Sankt Gallen) takes a close look at encyclopaedically oriented recipe books and their conditions of production. Collaboration was essential for the making of books. This 'how-to' of the how-to books includes, among other things, the correspondence procuring texts, the transport of these books to the printer, the reading and the decision about which text passages should be copied, the ordering of these passages, the decision about the addressee of a dedication letter, the negotiations with a printer about price and actual printing, the printing itself and finally the sale of a book. These processes become particularly clear in Johann Jacob Wecker's *De Secretis libri XVII* (Basel 1582), which contains text fragments from different epochs, regions and knowledge traditions. Various actors as well as material constraints and external factors were involved in this heterogeneous text production. They formed, Zweifel argues, 'compilation networks', without which these kinds of books would never have come into being.

7 Text and Image Simultaneity

Particular attention has been paid to the importance of the visual in these sources.[51] Among these are above all graphic figures often in the style of technical drawings and diagrams at the interface between seeing and knowing, image and text.[52] A variety of graphic designs helps the reader and viewer to

51 Ernst H. Gombrich, 'Bildliche Anleitungen', in Martin Schuster and Bernard Woschek (eds.), *Nonverbale Kommunikation durch Bilder* (Stuttgart: Verlag für Angewandte Psychologie, 1989), pp. 123–142; Laurence Grove: 'Emblems and Impact', in Ingrid Hoepel and Simon McKeown (eds.), *Emblems and Impact. Volume 1: Von Zentrum und Peripherie der Emblematik* (Newcastle upon Tyne: Cambridge Scholars Publishing, 2017), pp. 1–23; Birgit Emich, 'Bildlichkeit und Intermedialität in der Frühen Neuzeit. Eine interdisziplinäre Spurensuche', *Zeitschrift für historische Forschung*, 35 (2008), pp. 31–56.

52 Steffen Bogen and Felix Thürlimann, 'Jenseits der Opposition von Text und Bild. Überlegungen zu einer Theorie des Diagramms und des Diagrammatischen', in Alexander Patschovsky (ed.), *Die Bildwelt der Diagramme Joachims von Fiore. Zur Medialität religiös-politischer Programme im Mittelalter* (Ostfildern: Thorbecke, 2003), pp. 1–22; Sybille Krämer, 'Zwischen Anschauung und Denken. Zur epistemologischen Bedeutung des Graphismus', in Joachim Bromad and Guido Kreis (eds.), *Was sich nicht sagen lässt. Das Nicht-Begriffliche in Wissenschaft, Kunst und Religion* (Berlin: De Gruyter, 2010),

form a picture of complex technical processes.[53] Infographic approaches in particular were to become increasingly popular. As soon as the illustration was linked to explanatory texts by markings, by letter and number references, the image message could be didactically controlled, just as the author and publisher intended. Schematic pictures of ovens and equipment in the style of technical drawings invited the reader to copy them. Sometimes 'directing instructions' in how-to books rely on pictorialised sequences of action, reminiscent of comics or storyboards.[54]

Laurence Grove (Glasgow) (and his co-author Stefan Laube (Berlin) who is responsible for many a relevant find in the libraries) analogized emblematic illustrations from the Baroque era with the cutaways that became popular after 1945, especially in Great Britain but also in France, almost always linked to the text via a caption key, a visual trick that was already used with virtuosity by Georg Agricola in his main work *De re metallica* (Basel 1556). Grove's leading question is a how-to question that has become the signature of modernity. How can people become birds, how can we manage to keep people in the air and move them around? These are questions that only the twentieth century solved satisfactorily. In the early modern era, flying was always a spiritual matter of reaching heavenly realms with the help of a vehicle. Three centuries later, the English weekly *Eagle*, published from 1950 to 1969, became famous for showing the inner workings of aeroplanes and rockets. For all the differences between aerial illustrations in the early modern period and after 1945, both types of images were about a transcending journey of discovery: both times the invisible is made visible through diagrammatic processes. Jesuit printed books and comics of knowledge shake hands.

To view recipes exclusively from the perspective of practicality would ignore other relevant motivations in this genre, according to the thesis of Andrea van Leerdam (Utrecht). In *Den sack der consten*, a collection of recipes

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pp. 172–193; Marcus Popplow, 'Why Draw Pictures of Machines? The Social Context of Early Modern Machine Drawings', in Wolfgang Lefèvre (ed.), *Picturing Machines 1400–1700* (Cambridge, Mass.: MIT Press, 2004), pp. 17–50.

53 Clemens Schwender, 'Abbildungen zu Instruktionszwecken', in Clemens Schwender, Jakob Dittmar and Hans Prengel (eds), *Abbild – Modell – Simulation*, Technical Writing vol. 6 (Frankfurt am Main: Lang, 2005), pp. 9–37; Gottfried Boehm, 'Bildbeschreibung. Über die Grenzen von Bild und Sprache', in Gottfried Boehm and Helmut Pfotenhauer, *Beschreibungskunst – Kunstbeschreibung* (Munich: Fink, 1995), pp. 23–40.

54 Laurence Grove, 'Jesuit Emblems and Catholic Comics', in G. Richard Dimler, Pedro F. Campa, and Peter M. Daly (eds.), *Emblematic Images and Religious Texts: Studies in Honor of G. Richard Dimler, s.j.* (Philadelphia: St. Joseph's University Press, 2010), pp. 253–273; Lilli Fischel, *Bilderfolgen im frühen Buchdruck. Studien zur Inkunabel-Illustration in Ulm und Straßburg* (Stuttgart: Thorbecke, 1963).

and instructions printed in Dutch in the years 1528 and 1537, she makes it clear that pedagogical objectives are linked with entertaining elements, making the numerous woodcuts far more than mere decorations. Using research approaches to social conventions, she is able to show how much certain recipes can deviate from the conventional standard. On the one hand, the script adheres to various 'books of secrets' conventions through its presentation as a collection of individual recipes (each marked by an indented first line and a paragraph mark, with no visual distinction between serious and joking recipes); on the other hand, it playfully breaks these conventions through the presence of mocking recipes as well as quirky recipes that aim for the impossible. The reuse of pictorial motifs (or even the physical wooden blocks) that also appear in other works can be interpreted as a play with conventions as well. Like the recipes themselves, the pictures are a hodgepodge, with no clear coherence in their arrangement, a colourful mixture of texts and pictures, perhaps reminiscent of today's lifestyle magazines.

8 Prescription and Improvisation

In the last section of the conference, we addressed a theme that is located beyond written and also visual descriptions, the area of actual implementation, as difficult to grasp as it is necessary to deal with.[55] Following the motto 'We know more than we can say' (Michael Polanyi) the associated publications were usually never so detailed, never so concretely formulated, that they could actually have been implemented, which is especially true with unfamiliar practices and new complex technical procedures.[56] With the written genre of the advice manual on the one hand one obviously follows rules, but on the other hand it opens up space for improvisation by entering the realm of silent

55 In the meantime, the research field of 'historical praxeology' has emerged in Germany, see Dagmar Freist, 'Diskurse – Körper – Artefakte. Historische Praxeologie in der Frühneuzeitforschung – eine Annäherung', in Dagmar Freist (ed.), *Diskurse – Körper – Artefakte. Historische Praxeologie in der Frühneuzeitforschung* (Bielefeld: transcript, 2015), pp. 9–33; Lucas Haasis and Constantin Rieske, 'Historische Praxeologie. Eine Einführung', in *Historische Praxeologie. Dimensionen vergangenen Handelns* (Paderborn: Schöningh, 2015), S. 7–55.

56 Annie Gray, "A Practical Art': An Archeological Perspective on the Use of Recipe Books', in Michelle DiMeo and Sara Pennell (eds.), *Reading and wiriting recipe books 1550–1800*, (Manchester: Manchester University Press 2013), pp. 47–67; Reinhold Reith, 'Know-how, Technologietransfer und die Arcana Artis im Mitteleuropa der Frühen Neuzeit', *Early Science and Medicine*,10 (2005), pp. 349–377; Carlo M. Cipolla, 'The Diffusion of Innovations in Early Modern Europe', *Comparative Studies in Society and History*, 14 (1972), pp. 46–52.

knowledge.[57] If their reading is performatively oriented and can be completely detached from the source, as current research states, then the still largely unanswered question of where exactly the tipping points might be where practices become independent of the source.

A linguistic semiotic point of view can bring light into this elusive field. Laura Balbiani (Milan) examined recipes from this perspective using the example of two representative printed compilations by Giovan Battista Della Porta (Naples 1558, extended version: 1589) and Isabella Cortese (Venice 1561). In doing so, Balbiani distinguished two levels: the level of more passive reading (where an author and a reader interact), and the level of execution). For the passive reader, the added value of the recipe would be that it is placed in a broader narrative program fuelled by curiosity and the desire for pleasure. On the level of performance, the expectation would be attached to a cognitive effort (deciphering the secrets of the recipe: a 'knowing-wanting'), but which manifests itself entirely in performance, in the acquisition of certain skills (a 'doing-ability'). In this performative respect, it must always be taken into account that the cognitive gap cannot be completely overcome. This shows, for example, the not easy problem of dosage (which early modern recipes often leave to the performer). Again and again, it can be seen that important information is missing from the texts, so that the question arose as to whether the imperative in 'recipe' is to be understood literally or whether a genre of entertainment literature was created here, which always also conveys diverse general knowledge.

AQ 8

No recipe without wish fulfilment, without magic, so to speak. The article of Sergei Zotov (Warwick) deals with spell books (grimoires) that in contrast to the more theoretical-philosophical occult literature are practical ritual texts, how-to texts, that give very specific instructions on how the magician can harness spiritual and demonic powers for himself. Zotov explores the use of incense, perfumes, and other fragrances since the practice of suffumigation was a common element of many grimoires, scents and smells as subtle substances rising up towards the sky, to the abode of the gods and demons. One could say that grimoires implied a kind of olfactory communication between the magician and demons or angels. Grimoires not only contained magical invocations; they were magical objects themselves, which is often highlighted in long enumerations of the sorcerer's tools, among which there is always a book. In some books, there were special empty spaces where the owner of the

57 Neil Gascoigne and Tim Thornton, *Tacit Knowledge* (Preston: University of Central Lancashire 2013); Harry M. Collins: *Tacit and Explicit Knowledge* (Chicago: The Chicago University Press, 2010).

manuscript or the printed book should put their signature. Most of the magic books were in pocket size, which made it easier to carry the book during rituals.

The contribution by Britta-Julian Kruse (Wolfenbüttel) shows that the sheet of paper with instructions was usually integrated into a material-performative setting. The focus is on a 'home, travel and field pharmacy' of a Guelph duchess, in which several how-to dimensions can be read: the operation of a medicine chest with its various compartments anddrawers had to be pmastered as well as the identification of the ingredients stored in vessels. Here was a handy framework set to implement the prescriptions handwritten by the doctor. The author of the action-oriented explanations was Caspar Neefe (1514–1579), professor of medicine in Leipzig and Saxon personal physician. It was not only the duchess who was to receive medical care, but also the sick in her court. The performative act of applying the prescriptions could take place without a doctor being present or as a short-term measure for first aid before a doctor arrived.

Are there is something like a typology hidden in the four focal points of the workshop, which help us to get a better grip on the topic of the how-to books? We assume so, but further, systematic research will be necessary.[58] At the very least, the elastic expressiveness inherent in the how-to category is more than merely hinted at by the various perspectives from which how-to books are examined in the eleven contributions of this volume: thus, cheap tracts come into view as products of existential crises (S. Laube). Tracts can serve as a handwritten recording medium that is far removed from the original content (P. Feuerstein-Herz). The how-to idea can also be hidden in classical works that have not been classified under this genre so far (R. MacLean). No medium is more appropriate to know-how than a piece of paper on which a recipe is spontaneously written down (S. Limbeck). Nowadays it is possible to extract added value from such texts through digital indexing and performative reconstruction (T. Taape). The implementation, the trial and error, is increasingly in the background the more extensive and encyclopaedic the how-to books became; rather, in their book production, the know-how consists of having text modules at one's disposal and skilfully putting them together (S. Zweifel). In richly illustrated treatises, pictures with their explanations have the function of making the concealed visible (L. Grove), if they do not immediately thwart

58 A joint proposal based on the holdings of the University of Glasgow Library and the Herzog August Bibliothek Wolfenbüttel was submitted in February 2023 and approved in early November 2023 as part of the *German-British funding initiative for the humanities* by the DFG and the AHRC; the applicants are Laurence Grove (Glasgow) and Stefan Laube (Berlin).

expectations and serve to entertain and amuse (A. van Leerdam). Books can be like little living creatures, from how-to tracts that address the reader directly the message goes out: 'Take me and Make It Happen!' In this dazzling realm of wishful realisation, it is always a matter of keeping the gap to 'tacit knowledge' as small as possible (L. Balbiani). In this respect, it is anything but surprising that grimoires are bursting with how-to formulas (S. Zotov), and written advice in a handy medical cabinet can even make a trained doctor superfluous (B. Kruse). While it is not possible to cover the full range of instructions manuals in this publication, tracts on plague and medical arts, distillation, metalworking techniques, flying machines, games and entertainment, and magic can be taken as telling examples. In addition, there are insights of technological know-how in encyclopaedic textbooks as well as how-to hints in the creation of book compilations.

How to-knowledge has obviously a 'problem-solving potential',[59] composed of sequenced procedures, often conveyed with intermediality in an inviting tone. This publication has set out to reflect on how-to Books only theoretically, the actual (multi-sensual) testing of recipes is reserved for further research efforts. For the analytical philosopher Gilbert Ryle, 'how-to' is the fundamental knowledge even for theoretical approaches, because rational thinking only works well if you have practised it, if you have mastered the 'how-to' of thinking.

59 Jürgen Renn, *The Evolution of Knowledge. A Rethinking of Sciene for the Anthropocene* (Princeton/Oxford: Princeton University Press, 2020), p. 64.