

# *Reader Interaction with Graphic Devices in Early Modern English Printed Books* <sup>☆</sup>

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In this study, I examine handwritten – or, in some cases, handdrawn – marks of reader engagement with graphic devices in the British Library (BL) collection of English printed books published between 1473 and ca. 1700. Previous research has shown that early modern readers readily added their own comments and other marks in books they used, and that printed texts were not seen as final as later periods have considered them to be.<sup>1</sup> Readerly marks (and sometimes substantial customization of printed books) are one aspect of the wider phenomenon of manuscript and printed media coexisting and interacting in the early modern period, and their study gives insight into reading practices and ideas of textual authority. For the purposes of this study, I am interested in how readers interacted with printed images, diagrams, tables and other content that relies wholly or partly on visual ways of conveying and constructing information. I refer to these visual items as *graphic devices*, focusing primarily on visual content embedded in the main text of the book.<sup>2</sup> As part of a wider project Early Modern Graphic Literacies (EModGraL), which studies the use and the

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<sup>1</sup> The landmark study of reader interaction with printed books is William H. Sherman, *Used Books: Marking Readers in Renaissance England* (Philadelphia: University of Pennsylvania Press, 2008). On the supposed fixity of printed texts and its critique in the context of readerly marks, see, for example, Stephen Orgel, *The Reader in the Book: A Study of Spaces and Traces* (Oxford: Oxford University Press, 2015), 9–11. For a fuller view of the themes of textual stability and manuscript additions to print, see David McKitterick, *Print, Manuscript, and the Search for Order, 1450–1830* (Cambridge, UK and New York, NY: Cambridge University Press, 2003), esp. 53–96, where McKitterick discusses the production of illustrations.

<sup>2</sup> See Sirkuu Ruokkeinen, Aino Liira, Mari-Liisa Varila, Otso Norblad and Matti Peikola, ‘Developing a classification model for graphic devices in early printed books’, *Studia Neophilologica* 96, No. 1 (2024), 69–93. The three main types are (general) images, diagrams and tables. I have excluded graphic devices on title-pages, as well as any graphic devices that are paratextual, such as tables of contents and indexes, or primarily decorative, such as vignettes and initials.

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diachronic and synchronic distribution of graphic devices in Early Modern English books, this study directs its focus to the reader and reading practices. How did early modern readers use or react to graphic devices in books? The aim of the study was to find out what kinds of traces of interaction with graphic devices and with texts that contain such devices occur, and whether the evidence of use indicates that actual readers' needs were aligned with those anticipated by writers and book producers. For this reason, I examine a variety of different kinds of books containing graphic devices. The study identifies a 'core group' of four types of interaction with graphic devices: modifications or additions to printed graphic devices; whole or partial copies of the devices; handwritten or drawn original devices; and reactive or evaluative comments on the devices. Furthermore, the books examined may contain annotations or other readerly marks that occur in the proximity of graphic devices but do not interact with them explicitly; rather, they engage with the text or the book. These categories will also be briefly discussed below; even though they fall outside the main interest of this article, they offer additional insights into how readers interacted with books that contain visual information.

Both antiquarian and scholarly interest in reader annotations began to emerge around the 1960s and became established in the following decades.<sup>3</sup> The full establishment of academic interest can be more firmly linked to a paradigm shift in the study of reading and a wider turn to the study of the materiality of books in the late 1990s and the first decade of the twenty-first century. This has been made possible, for instance, by book catalogues which contain copy-specific information, such as notes about marginalia.<sup>4</sup> Book historical study has brought into focus the actual, historical reader, rather than the ideal or anticipated one that was the target of formalist literary criticism.<sup>5</sup> As Jennifer Richards and Fred Schurink note, however, there is a fruitful middle ground to be found in the study of reading from a material (book historical) perspective and from the perspective of literary criticism, and the two should not be separated too readily.<sup>6</sup>

<sup>3</sup> Sherman, *Used Books*, 21. Sherman here cites the thorough account by Bernard M. Rosenthal, 'Cataloging Manuscript Annotations in Printed Books. Some Thoughts and Suggestions from the Other Side of the Academic Fence', *La Bibliofilia*, 100, No. 2–3 (1998), 583–95.

<sup>4</sup> Jennifer Richards and Fred Schurink, 'Introduction: The Textuality and Materiality of Reading in Early Modern England', *Huntington Library Quarterly*, 73, No. 3 (2010), 345–61 (347).

<sup>5</sup> Richards and Schurink, 'Introduction', 346. In Britain, a significant contribution in this area is Robin C. Alston, *Books with Manuscript: A Short Title Catalogue of Books with Manuscript Notes in the British Library, Including Books with Manuscript Additions, Proofsheets, Illustrations, Corrections* (London: British Library, 1994).

<sup>6</sup> Richards and Schurink, 'Introduction', 360. Similar arguments have been made by Arthur Bahr and Alexandra Gillespie, 'Medieval English Manuscripts: Form, Aesthetics, and the Literary Text', *The Chaucer Review*, 47, No. 4 (2013), 346–60 (esp. 351).

An important work in the field of marginalia studies is William H. Sherman's *Used Books: Marking Readers in Renaissance England*, which explores the various ways Renaissance readers engaged with their books. As Sherman points out in his preface, the reader's use of the book does not always equal reading.<sup>7</sup> Neither can all readerly marks be described as *annotation* – Sherman discusses a wide range of evidence of use, such as ownership marks and pen trials in addition to clear responses to the text. In fact, he notes that a large number of reader's marks in books have nothing to do with the text(s).<sup>8</sup> Here he cites Carl James Grindley, who aims at developing a universal classification for manuscript and printed marginalia through a case study of annotations in *Piers Plowman* manuscripts. Grindley divides 'marks made in books' into three types: 'marginalia that are without any identifiable context'; 'marginalia that exist within a context associated with that of the manuscript itself'; and 'marginalia directly associated with the various texts that the manuscript contains'.<sup>9</sup> The marks under the first type are those which indicate use rather than reading in Sherman's distinction. Jason Scott-Warren has further developed Sherman's suggestion that such marks in books may be described as 'graffiti', arguing that their primary features are the proclamation of self and leaving a trace of oneself in a specific place.<sup>10</sup>

Marginalia studies continue to provide new angles into the research of medieval and early modern literacy. Several studies have addressed the use of early modern English almanacs, a genre which specifically invites reader annotation.<sup>11</sup> More recent examples of marginalia studies include the special issue of the *Journal of Medieval and Early Modern Studies*, 'The Bible and English Readers', edited by Thomas Fulton<sup>12</sup>; and the volume *Early Modern English Marginalia* edited by Katherine Acheson, which brings together

<sup>7</sup> Sherman, *Used Books*, xiv.

<sup>8</sup> Sherman, *Used Books*, 15.

<sup>9</sup> Carl James Grindley, 'Reading *Piers Plowman* C-Text Annotations: Notes towards the Classification of Printed and Written Marginalia in Texts from the British Isles 1300–1641', in Kathryn Kerby-Fulton and Maidie Hilmo (eds.), *The Medieval Professional Reader at Work: Evidence from Manuscripts of Chaucer, Langland, Kempe and Gower* (Victoria, BC: University of Victoria, 2001), 73–142 (77). 'Manuscript' here could well be read as 'book'. Regardless of the medium, medieval and early modern books could contain several texts.

<sup>10</sup> Jason Scott-Warren, 'Reading Graffiti in the Early Modern Book', *Huntington Library Quarterly*, 73, No. 3 (2010), 363–81, see esp. 365. See also Sherman, *Used Books*, 23.

<sup>11</sup> See Alison A. Chapman, 'Marking Time: Astrology, Almanacs, and English Protestantism', *Renaissance Quarterly*, 60, No. 4 (2007), 1257–90; Adam Smyth, 'Almanacs, Annotators, and Life-Writing in Early Modern England', *English Literary Renaissance*, 38, No. 2 (2008), 200–44; Laura Williamson Ambrose, 'Travel in Time: Local Travel Writing and Seventeenth-Century English Almanacs', *Journal of Medieval and Early Modern Studies*, 43, No. 2 (2013), 419–43.

<sup>12</sup> See also Fulton's introductory article to this issue, 'English Bibles and Their Readers, 1400–1700', *Journal of Medieval and Early Modern Studies*, 47, No. 3 (2017), 415–35.

contributions exploring the rich ways in which early modern readers left their marks upon books.<sup>13</sup> In addition to these collections, individual studies have addressed the topic of early modern annotation in different genres, both literary and more utilitarian, such as the book-length study by Stephen Orgel,<sup>14</sup> Robert MacLean's study on medical marginalia,<sup>15</sup> Alessandra Petrina's study on reader responses to the English translations of Machiavelli,<sup>16</sup> Morgan Ring's study on annotating the *Golden Legend* of Jacobus de Voragine<sup>17</sup> and Benjamin Wardhaugh's chapter on annotations and other marks of readerly interaction in editions of Euclid's *Elements of Geometry*, which also briefly addresses the copying of diagrams by tracing.<sup>18</sup> In addition to advancing the field of annotation studies through their respective targets of interest – specific genres or works – several of these studies make important general points on the development and methodology of studying traces of reading and usage of books. For instance, Ring notes a second paradigm shift in early modern annotation studies where the focus changes from individual, identifiable and often famous reader-annotators to unknown hands and the reception of certain works studied across copies.<sup>19</sup> This kind of focus can not only be seen in Ring's own approach but also in those of Petrina and Wardhaugh.

There is also another approach to marginalia which proceeds not from an individual reader or an individual work but from a specific collection. This approach is represented, for example, by H. J. Jackson's pioneering study *Marginalia: Readers Writing in Books*,<sup>20</sup> MacLean<sup>21</sup> and, indeed, Sherman.<sup>22</sup> This approach is not too common, however, possibly due to its inherent challenges.

<sup>13</sup> Katherine Acheson (ed.), *Early Modern English Marginalia* (New York, NY and Abingdon, UK: Routledge, 2019).

<sup>14</sup> Orgel, *The Reader in the Book*.

<sup>15</sup> Robert MacLean, 'Medical Marginalia in the Early Printed Books of University of Glasgow Library', in Hannah C. Tweed and Diane G. Scott (eds.), *Medical Paratexts from Medieval to Modern: Dissecting the Page* (Cham: Palgrave Macmillan, 2018), 157–73.

<sup>16</sup> Alessandra Petrina, 'Marginal Reactions: Responses to Translations of Machiavelli in Early Modern English Marginalia', *Canadian Review of Comparative Literature / Revue Canadienne de Littérature Comparée*, 46, No. 2 (2019), 252–67.

<sup>17</sup> Morgan Ring, 'Annotating the *Golden Legend* in Early Modern England', *Renaissance Quarterly*, 72, No. 3 (2019), 816–62.

<sup>18</sup> Benjamin Wardhaugh, 'Defacing Euclid: Reading and Annotating the *Elements of Geometry* in Early Modern Britain', in Anja-Silvia Goeing, G. J. R. Parry, and Mordechai Feingold (eds.), *Early Modern Universities: Networks of Higher Learning* (Leiden and Boston: Brill, 2020), 262–82. On diagrams, see 267. The other types of interaction Wardhaugh discusses pertain to the text rather than the graphic devices, such as corrections to grammar and spelling and evidence of collation with other editions of the same text. Furthermore, Wardhaugh notes that reader engagement is mostly limited to the Greek and Latin editions and larger formats while copies of the English translation, as well as smaller formats, were rarely annotated (270, 278).

<sup>19</sup> Ring, 'Annotating the *Golden Legend*', 820.

<sup>20</sup> H. J. Jackson, *Marginalia: Readers Writing in Books* (New Haven: Yale University Press, 2001).

<sup>21</sup> MacLean, 'Medical Marginalia'.

<sup>22</sup> See Sherman, *Used Books*, xii.

Most catalogues tend not to be very informative about annotation, if it is recorded at all. To quote MacLean's succinct words: 'Worldwide, only a fraction of early printed books have been catalogued with the level of rich copy-specific detail which permits viable research into marginalia.'<sup>23</sup> Focusing on a specific, limited collection may mitigate this problem, and fortunately, there are also catalogues that do record annotation at least to some extent of systematicity.

While there is a growing body of research on readerly marks, annotation relating to graphic devices or reader engagement with graphic devices remains an uncharted area. This topic is often touched upon in marginalia studies – for instance, Sherman briefly discusses children using coats of arms for colouring, in addition to leaving pen trials and signatures on the pages of Bibles and other books.<sup>24</sup> Individual cases and types are often highly interesting and informative. However, the present study sets out to analyse interaction with graphic devices in a more systematic manner, through a survey that reveals a variety of different kinds of interaction with visual material across early modern genres. The methodological value in wide-ranging surveys, collection-based approaches and quantification as a basis for claims of commonness or rarity of certain phenomena is convincingly argued by Daniel Wakelin in his study of scribal correction.<sup>25</sup> It should be stated that the present study is not quantitative, and I attempt to make no claims for the commonness of a certain type of interaction with graphic devices, but rather identify the different kinds of phenomena. The study is also not exhaustive, but covers enough relevant material to make claims that go beyond isolated cases. I chose the British Library collection due to its potential of providing me with a relatively random selection of different kinds of annotated books, and because its catalogue allowed me to search for annotations with relative ease and accuracy.

For this study, I consulted copies of approximately 110 titles *in situ* at the British Library. For some titles, I consulted several copies if more than one were marked as having annotations. To identify relevant titles and copies, I searched the library's main catalogue for manuscript annotations in books published in English between 1473 (the first book printed in English) and 1699.<sup>26</sup> The search terms used (with the number of results yielded in parentheses) were 'manuscript annotations' (10), 'manuscript annotation' (38),

<sup>23</sup> MacLean, 'Medical Marginalia', 169. Methodological challenges are also discussed by Jackson, *Marginalia*, 8–10.

<sup>24</sup> Sherman, *Used Books*, 84.

<sup>25</sup> Daniel Wakelin, *Scribal Correction and Literary Craft: English Manuscripts 1375–1510* (New York: Cambridge University Press, 2014), 10–14.

<sup>26</sup> I did not use Alston, *Books with Manuscript*, in my selection of materials since the printed catalogue would not have allowed me to search by language or time period. The catalogue would be highly useful for someone interested in specific authors and works.

‘ms. annotations’ (299) and ‘ms. notes’ (584).<sup>27</sup> I then manually checked the search results, 931 entries altogether, against the *Early English Books Online* (EEBO) database or other digitizations available in order to identify those books which contain graphic devices – ca. 38% of all relevant search results (525). Almost half of the search results were excluded at this stage as non-relevant due to various reasons: I mostly omitted titles for which no digital surrogates were available (to check if they have graphic devices), as well as search results where the catalogue entry did not specify which copy or copies are annotated. Further exclusions were made on a case-by-case basis, for instance, where the annotations were stated to be modern and in pencil; where annotations were stated to only occur on the endleaves; where graphic devices were limited to braces (curly brackets) or images on title-pages; and where the relevant leaves or plates were stated to be defective or wanting. All broadsides were also excluded.

#### READERS MODIFYING THE EXISTING DEVICE

The first type of reader engagement to discuss is where readers modify the printed device by drawing or writing, for example, by correcting or adding to the device. The additions are not dependent on the mode of the original device (primarily visual/primarily verbal): Verbal elements such as captions may be added to images and diagrams, for example, and pictorial elements may be added to devices that mostly consist of verbal or numerical information, such as tables. This type of modification is at the core of my research interests because such additions can indicate deep engagement with the information content or structure in the graphic device. The reader may have found the original device lacking in some respect, or the handmade additions may show how the reader has been working to map the relationship between the text and the device.

Examples of this type occur, for instance, in a copiously annotated copy of William Cuningham’s *The cosmographical glasse* (London, 1559).<sup>28</sup> The massive work produced by Cuningham, a physician and astrologer, and the printer John Day, is heavily illustrated, and with its Greek and Latin quotations is clearly aimed at a learned reader.<sup>29</sup> A single hand – which can be dated to some 50 years after the publication of the book, as shown below – annotates in Latin and English, occasionally interacting with the graphic

<sup>27</sup> There was some minor fluctuation in the number of results yielded when the search was performed again on a different day; however, the differences seem to have been limited to non-relevant entries such as digital surrogates (which sometimes preserve the catalogue description of the physical copy). In a few cases, there was also overlap between the results.

<sup>28</sup> STC 6119, BL copy at C.184.c.10.

<sup>29</sup> On *The cosmographical glasse*, see Anthony Parr, ‘Time and the Satyr’, *Huntington Library Quarterly*, 68, No. 3 (2005), 429–65 (esp. 430); Isabelle Fernandes, ‘“To Find out the Pathe”: Mapping the Universal Machine in William Cuningham’s *Cosmographical Glasse* (1559)’, *Journal of Early Modern Studies*, 12 (2023), 55–73.

devices in the book. For instance, at the top of a diagram depicting the celestial sphere, the annotator has added 'Zenith'.<sup>30</sup> The term *Zenit* is mentioned in the text on the same page, in a translation of Greek and Latin explanations for the meridian; a definition is provided in a printed marginal note, which the annotator has partially underlined: '\*Zenit is that point or prick imagined to be directly ouer our heades & is alwaye. 90. degrees from the East, South, Weast, and North. Lib. 1. prop. 3.'<sup>31</sup> The printed diagram has letters of the alphabet used as tie-marks (for instance, B and D signify the poles, and the letters are used to indicate the meridian and horizontal circles) but no other textual elements. The annotator has thus added one of the key terms which is not provided in the printed diagram although it is discussed in the text. This is a relatively rare example among my findings which suggests that the reader is making their reading and learning process visible. Alternatively, if the reader was applying prior knowledge, the addition could be motivated by a desire to correct the printed text including its graphic devices. In this copy, however, the other annotations made in the same hand support the idea of an active learning process.

Further evidence of the annotator of *The cosmographical glasse* similarly engaging with the text and its graphic devices is found later in quire O. A table shows the epacts and the golden numbers for the years 1560–1578; epacts are used to calculate the phase of the Moon, or to map the difference between the solar year and the lunar year, and golden numbers indicate the placement of the year in the Metonic cycle of 19 years.<sup>32</sup> The reader-annotator has continued the printed table beyond those years. The task of calculating the epacts has not been straightforward: What is presumably the first attempt, in the inner margin, has been struck out and a new version has been inserted in the outer margin, although this too has some additional corrections in the same hand. The more successful version also shows attention to visual organization: the letters 'y' [year] and 'e' [epact] are given as column headings. The annotator has not, however, attempted to imitate the visual characteristics of the printed table.

The apparent reason for continuing the table is revealed when one looks at the annotation on the preceding page.<sup>33</sup> Cuninghams' text, written in a dialogue format, provides instructions on how to find out the phase of the Moon, but the reader-annotator has struggled with these. An attempt to calculate the moon phase for 28 February 1603 has been unsuccessful due

<sup>30</sup> Sig. C5r.

<sup>31</sup> My transcriptions, of both printed and handwritten text, preserve the original spelling, punctuation and capitalization. I have generally not retained linebreaks unless relevant for the argument. Expanded abbreviations are italicized, and any editorial additions and omissions are placed in square brackets.

<sup>32</sup> Sig. O2v.

<sup>33</sup> Sig. O2r.

to a mistake in the epact: '25' has been replaced with '27', which is the epact for 1603 found in the corrected version of the annotator's table. The annotator has also not found the instructions in the text clear enough: In order to find out how many days have passed since the new moon, one must 'take thirtie [of the resulting sum], (for so must you do, if your number be more then xxx. & vnder sixtie)' according to the text. Yet the text does not tell what to do when the number exceeds 60, which is what has happened when the annotator has performed the calculation, and the annotations witness the struggle: the annotator asks 'how now shall I know?'; 'or in march: what must I do?' as if participating in the dialogue. The annotator has then tried the calculation again with 1 February, which works out as described in the text, and has written the conclusion 'ten daies old' next to the date.

Several examples of additions recording the reader's processing of the text and its graphic devices are also found in a copy of *The rule of reason, conteinyng the arte of logique, set forth in Englishe*, by Thomas Vuilson (London, 1551), whose title-page bears the inscriptions 'Thomas Smyth' (twice) and 'Ri. Carltonus me tenet'.<sup>34</sup> Annotations have been made throughout the book in an italic hand, and towards the end in a secretary hand; the secretary hand does not annotate any graphic devices, however, while the italic hand does.<sup>35</sup> For example, on sig. E6r, an arrangement of information, constructed with braces and thus appearing as a tree-diagram, has been clarified by the annotator. The device summarizes a few pages of discussion of the principles of division in prose, on how 'Euery single question is eight waies examined'.<sup>36</sup> A closer look reveals that the device is not actually a branching tree-diagram but rather a braced list divided into two columns, as shown in Fig. 1.

The annotator has added '8. waies' after the heading 'As touching the lawe' and has numbered the list items for clarity, following the order stated in the prose text preceding. Without the numbering, the layout would be confusing, especially as two of the list items are placed outside the braced parts. The corrected order makes it clear that the braces do not function as they would in a tree-diagram typically used for division in works of logic.

<sup>34</sup> Printed by Richard Grafton, STC 25809, BL copy at C.40.a.53.

<sup>35</sup> The auction note found at the beginning of the microfilm reel in EEBO attributes the inscription and some of the marginalia to Sir Thomas Smith. Smith wrote in both secretary and italic; however, the italic hand in this copy is different, and Smith seems to have used italic for Romance languages only, reserving secretary script to English, cf. Smith's manuscript 'Inventaries', Cambridge, Queens' College, MS 49, digitized at <<http://cudl.lib.cam.ac.uk/view/MS-QUEENS-00049/1>> (accessed February 2024).

<sup>36</sup> Sig. E4v.

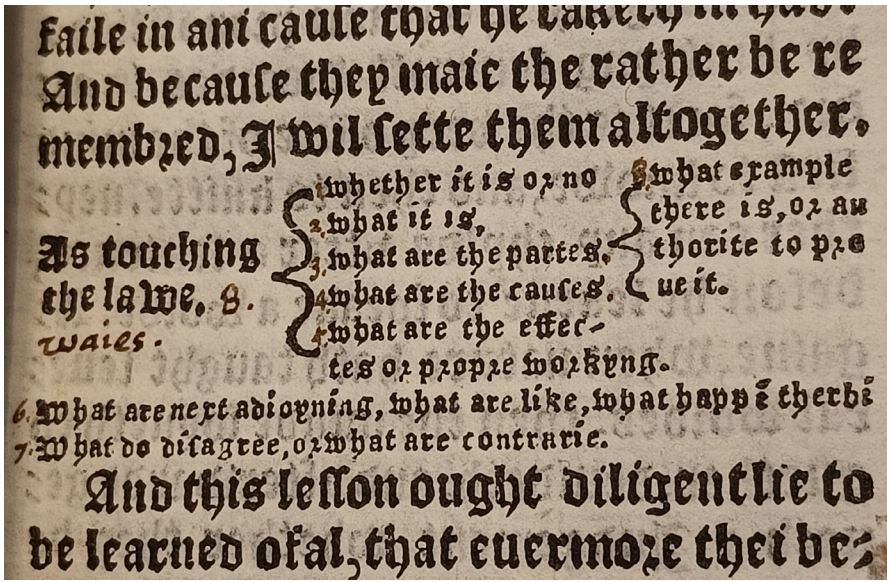


Fig. 1 Annotations to a printed list in a copy of Thomas Wilson, *The rule of reason, conteinyng the arte of logique, set forth in Englishe* (London, 1551). From the British Library Collection: Shelfmark C.40.a.53, sig. E6r. Image published by permission of the British Library

Such diagrams are also found elsewhere in this particular work.<sup>37</sup> Indeed, in the second edition (1552), the device is presented as a clear braced and numbered list, the order of which matches the numbering of our annotator.<sup>38</sup>

In other instances, the braced lists in the 1551 edition are clearer and not confused with tree-diagrams. Often Latin terms are listed on the left (grouped with a brace) and the English equivalents on the right (again, grouped with a brace). On one occasion, the annotator has supplied the missing translations by annotating the braced list of ‘fourē kyndes of argumentes’: Syllogismus (‘a perfect argumt’), Enthymena (‘an vnperfect argumt’), Inductio (‘an induction.’) and Exemplum (‘an example./’).<sup>39</sup> These annotations almost appear editorial; in the second edition, the Latin terms have been omitted and only the English equivalents provided, corresponding to those added by our annotator. The annotator may have had

<sup>37</sup> See, for instance, sig. B7r. For use of the branching tree-diagram in early modern transmission of knowledge, see Ann M. Blair, *Too Much to Know: Managing Scholarly Information Before the Modern Age* (New Haven, CT: Yale University Press, 2010). A thorough account of their medieval origin has recently been written by Ayelet Even-Ezra, *Lines of Thought: Branching Diagrams and the Medieval Mind* (Chicago: University of Chicago Press, 2021).

<sup>38</sup> STC 25810, see sig. F3r. Consulted via EEBO.

<sup>39</sup> Sig. F7v.

access to another edition or, more likely, the translations were pulled from the prose text following. In either case, a potential motivation for this type of engagement may be a desire to perfect a book the reader found deficit.<sup>40</sup>

Some additions that fall into the category of modifications, however, may simply tell of boredom; that is, the markings are not motivated by the text or the graphic device itself. Rather, while a person supplying, for example, doodles is interacting with the physical device, the additions do not target the information contained in the device or in the text in a way that indicates graphic literacy, that is, the understanding of the conventions in visual displays of information. Such additions may be compared to Sherman's example of children colouring in books.<sup>41</sup> My final example from *The rule of reason* copy falls perhaps into this category. Sig. F2v has a square of opposition diagram, produced using typeface and braces – the propositions (universal and particular statements) are placed in the four corners, and their relations are indicated by printed captions. There are no lines or rules; the universal and particular statements which cannot be true at the same time (e.g. 'All men are moued with glorie' and 'Some men are not moued with glorie') are indicated by the word 'contradictory' broken into two and printed diagonally along an imagined line. Similar layouts are found in other early modern books of logic. In the centre of the diagram, the annotator has filled in a small circle with four arms, resembling a modern currency sign and four clusters of dots placed symmetrically along the imagined diagonal lines. These subtle handmade additions appear to be primarily decorative, although they also enforce the relations indicated in the printed diagram by making the visualization of the crossing diagonals easier. In any case, the motive behind additions in this category differs from that of an informed reader or professional artist colouring in coats of arms or images of plants in a herbal, for example. The motive is also different from purposeful censorship, which sometimes takes the form of ink smudges over printed words or images. Examples of such forms of engagement will be discussed below.

Expecting to find some additions or modifications to existing graphic devices, I anticipated that this category would consist of reader marks found on the same pages as those devices. However, in the process of data collection it became clear that annotations related to or commenting on a graphic device in a book may sometimes be found distanced from it, that is, on a

<sup>40</sup> Cf. Devani Mandira Singh, 'Caxton and His Readers: Histories of Book Use in a Copy of *The Canterbury Tales* (c. 1483)', *Journal of the Early Book Society for the Study of Manuscripts and Printing History*, 20 (2017), 233–49, esp. 242–3, where Singh discusses perfecting as a motive for premodern repairs of damaged incunabula. The theme of perfecting is also discussed by Orgel, *The Reader in the Book*, 11, who notes that through the inclusion of errata lists, early modern readers were invited to perfect their books by hand.

<sup>41</sup> Sherman, *Used Books*, 84.

different page. Yet such examples were rare, and hence I am not discussing them as a separate category. The clearest example of this kind of annotation involves cross-referencing. An annotator of a copy of *The mirror of architecture*, based on the work of Vincenzo Scamozzi and reworked by Joachim Schuym (translated by W.F., London, 1693),<sup>42</sup> has added references to illustrated plates. These references are not original but pulled directly from the text: For example, the handwritten note ‘Fig. III’ in the outer margin on sig. D3r corresponds to the reference in the text, ‘See Fig. III’, in l. 8. The copy also contains other kinds of annotation and I will revisit it below when discussing handdrawn devices.

To sum up, reader modifications to printed graphic devices occur in many forms, and different modifications may evidence different reading practices or motivations. Occasionally, annotations that are related to graphic devices such as tree-diagrams are not that different from annotations made to the text: Additions may comment on the information conveyed but not acknowledge its visual arrangement explicitly.<sup>43</sup> In other cases, annotation or other additions are more intimately connected with the visual mode of the device, for instance where cross-references or tie-marks have been added to images or diagrams,<sup>44</sup> or where the print quality of mathematical diagrams has been ‘perfected’ by hand, as in a copy of Samuel Foster’s *The art of measuring* (London, 1677).<sup>45</sup> As shown by other annotation and marginalia scholars, and also seen in the material for the present study, graphic devices may also invite modifications that have little to do with reading or using the device in the way intended by the producers.

#### COPYING THE EXISTING DEVICE OR PARTS OF IT

The second type of interaction with graphic devices entails reproducing the visual and/or verbal content or structure of the device. The copying of printed devices by drawing or writing involves the same mode (i.e. visual or verbal) that is used for the original device, although the reader may choose to produce the visual or verbal dimension only partly or modify it in the process. Any substantial modifications will, however, make the border between copying and producing new devices fuzzy. A copy of the device may occur on the same page as the original device or elsewhere in the physical book. It could

<sup>42</sup> Wing S811A, BL copy at 1651/2159. For the Dutch editions of Scamozzi’s work, see Andrew Hopkins and Arnold Witte, ‘From Deluxe Architectural Book to Builder’s Manual: The Dutch Editions of Scamozzi’s *L’Idea Della Architettura Universale*’, *Quaerendo*, 26, No. 4 (1996), 274–302, see 298 for Schuym’s reworked edition (printed by Iohannis Gronsveldt, Amsterdam, 1662).

<sup>43</sup> Annotations of this kind are found, for instance, in Simon Kellwaye, *A defensatiue against the plague* (London, 1593), STC 14917, BL Copy at C.31.e.8.

<sup>44</sup> See, for example, Johannes Goedaert, *Johannes Godartius Of insects* (York, 1682), Wing G1003, BL copy at 445.c.16.

<sup>45</sup> Wing F1629B, BL Copy at RB.23.a.27340.

also occur outside the physical book if the reader is taking notes separately or makes a copy in a different book; however, due to practical (methodological) reasons, such instances are outside my scope.

The first example to discuss pertains both to the text and to the chronological apparatus printed in the margins in a copy of Richard Grafton's *An abridgement of the chronicles of England* (London, 1564).<sup>46</sup> An annotator inserts missing information, that is, the reign of Edmund II, in between printed entries, emulating the layout of the marginal apparatus where the years discussed in the text are indicated in the margins.<sup>47</sup> While this kind of marginal apparatus falls outside the category of graphic devices as defined in the larger project that this study is part of, it serves as a good example of a reader's attempt at presenting the information filled in by hand as equivalent to the printed information by following the visual structure. The annotator, however, does not go as far as imitating the typeface: The addition clearly stands out as a readerly correction to the original text.<sup>48</sup>

An example of a more substantial correction which emulates the original format can be found in a copy of John Goodwyn's *A table for gauging[, ] or Speedy measuring of all manner of vessels* (London, 1594).<sup>49</sup> Tables and tools for gauging were used to measure the contents of wine and beer barrels subject to excise duties. A hand that annotates throughout the book has inserted a loose paper slip (currently between sigs B1-2) bearing a handdrawn table; this table corrects the one printed on sig. B2r. The annotator was collating information from various sources, as suggested by the attribution in the heading: 'M<sup>r</sup> Reynolds hath thus corrected this page: & no part else of y<sup>e</sup> Table saue a little pp. 6.' (Some additional corrections are indeed found in the lower margin on the sixth page of the table, i.e. sig. B4r.) 'Mr Reynolds' apparently refers to John Reynolds, a mathematician who served at the Tower Mint in London and was also taught by Goodwyn.<sup>50</sup> His name is included here as a source reference, which also lends authority to the corrections. Other notes reflecting the importance of accuracy in copying Reynolds's corrections are incorporated in the handdrawn table, such as 'Both these *Collumns* are as in y<sup>e</sup> booke not any number in either alterd'. The annotator was well versed in relevant and recent literature pertaining to gauging; in another section, the annotator

<sup>46</sup> STC 12150, BL copy at 1326.a.11., sig. D5v.

<sup>47</sup> For further discussion of this type of chronological visualization, see Aino Liira, Matti Peikola and Marjo Kaartinen, 'Visual Chronologies in Early Modern English Historiography', in Matti Peikola, Jukka Tyrkkö and Mari-Liisa Varila (eds.), *Graphic Practices and Literacies in the History of English* (Turnhout: Brepols, 2025), 201–5.

<sup>48</sup> For imitative repair, see, for example, Singh, 'Caxton and His Readers', 242–3.

<sup>49</sup> ESTC S4903429 (not in STC), BL copy at C.194.a.1092(7).

<sup>50</sup> Norman Biggs, 'John Reynolds of the Mint: A Mathematician in the Service of King and Commonwealth', *Historia Mathematica*, 48 (2019), 1–28; on Reynolds's connection to Goodwyn, see 4, and on his contributions to gauging beer and wine vessels, 25.

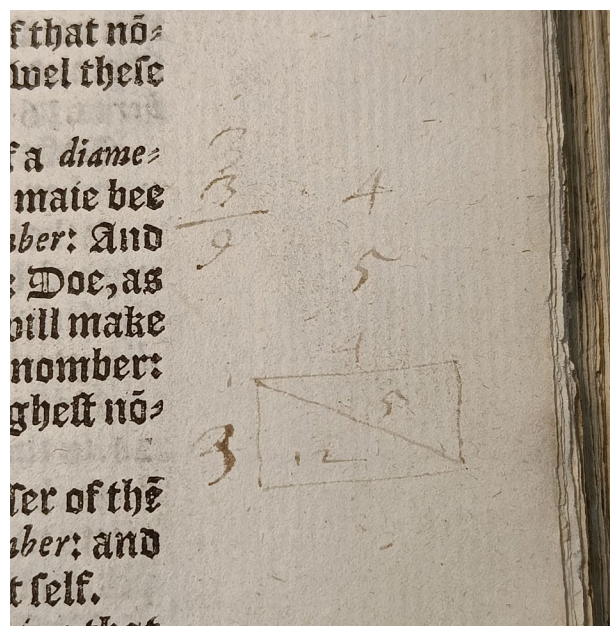


Fig. 2 A handdrawn mathematical diagram in a copy of Robert Record, *The whetstone of witte* (London, 1557). From the British Library collection: Shelfmark 530.g.37, sig. D4r. Image published by permission of the British Library

refers to ‘M<sup>r</sup> Oughtreds Gauging Rod’.<sup>51</sup> The carefully drawn grid format itself indicates the importance of accuracy inherent in the practice of gauging.

An example of a (presumed) direct reproduction of an existing device is found in a copy of Robert Recorde’s *The whetstone of witte* (London, 1557).<sup>52</sup> A reader has not only added his inscription (‘Edward Selwyn’) and marginal commentary on the text but has also tried out calculations in the margins and even produced some diagrams to test out what is stated in the text but not illustrated. Some of these I would consider to be reader-generated, ‘original’ productions as discussed in the following section. On one occasion, however, he has inserted a diagram in the margin. The text discusses diametral numbers,<sup>53</sup> and the annotator has performed the calculations in the margin and drawn a rectangle and a diagonal line (cf. Fig. 2), thus visualizing the text on sig. D4r:

<sup>51</sup> This most likely refers to William Oughtred, *The new artificial gauging line or rod together with rules concerning the use thereof* (London, 1633), STC 18901.

<sup>52</sup> STC 20820, BL copy at 530.g.37.

<sup>53</sup> Vera Sanford has noted that Recorde devoted much attention to the concept of the diametral number, ‘the product of two integers which have the property that the sum of their squares is itself a perfect square’, see ‘Robert Recorde’s *Whetstone of Witte*, 1557’, *The Mathematics Teacher*, 50, No. 4 (1957), 258–66, (261).

If three bee propounded as the one side of a *diametralle number*. And you would knowe, what maie bee the other side: and what is the *diametralle number*. And thirdly, what is the *diameter* to that number: Doe, as I saied before: multiply .3. by it self, and it will make 9. which is a square number, and an odde number: and therefore hath no iuste halfe. But the nightest numbers to the halfe, are .4. and .5.

Therefore I saie, that .4. which is the lesser of the *m* two, is the seconde side of the *diametralle number*: and 5. beyng the greater of them, is the *diameter* it self. Scholar. Now is it light enough to perceiue that the *diametralle number* is .12[...]

The resulting diagram matches a printed one that occurs a few pages earlier,<sup>54</sup> where the concept of diametral numbers is first introduced. However, it is not clear whether the handdrawn diagram is a direct copy or whether the reader was actively applying the knowledge given in the textual passage that explains how to find out an unknown value. The calculations in the margins, which presumably have preceded the drawing of the diagram, would suggest an active process rather than mere copying. In either case, such additions show careful attention to the text and familiarity with the graphic conventions of mathematics.

In summary, provided that the motivation is not simply doodling or testing a newly cut pen, the copying or imitation of an existing device could indicate that a reader-annotator was practicing their graphicacy and literacy skills, and/or the skills transmitted by the device.<sup>55</sup> Furthermore, additions or corrections which emulate the visual structure of the graphic device suggest that the annotator is aware of the importance of that visual structure. However, aesthetic preferences (as in the motive of perfecting discussed above) may also play a part. The annotator of *The cosmographical glasse*, discussed in the previous section, did not bother to emulate the layout of the printed table, as the handwritten continuation was functional without a ruled grid. Their motive – to apply the knowledge in the book to a new practical problem – differs from that of the annotator of the gauging tables discussed here, where the additions are intended to correct and replace faulty information in the print.

#### HANDDRAWN OR -WRITTEN DEVICES

Handdrawn or -written devices which are not copied from a printed model – at least one that shares a material space with them – are, in my view, different from copied devices in what they suggest about reading practices. This

<sup>54</sup> Sig. C4v.

<sup>55</sup> Wardhaugh, 'Defacing Euclid', 267, found evidence of such activity in copies of different editions of the *Elements*. The copying of diagrams is addressed as one type of interaction with that particular work; however, the copying Wardhaugh discusses is evident in marks of tracing rather than reproductions occurring within close distance of the printed device.

category consists of handmade graphic devices which are original productions of the user of the book or commissioned by the owner. Alternatively, they may be introduced from another source that is, however, physically separate from the annotated text. While it is possible that handdrawn illustrations, for example, are simple doodles, those graphic devices which are related to the topic of the text or clearly aim at organizing, constructing or conveying information indicate careful attention to the text. They could suggest that the reader considered a visual representation, where none was provided by the book producers, necessary.

Reader-generated graphic material seldom occurs in this dataset; even rarer are handmade graphic devices which aim to illustrate or engage with the text, like the calculations of the moon phase in the copy of *The cosmographical glasse* discussed above.<sup>56</sup> Doodles and calculations, which typically occur on flyleaves but sometimes in the margins, are fairly common, but usually they are unrelated to the text and thus tell of ‘using’ rather than ‘reading’ a book, following the distinction recognized by several marginalia scholars. Mathematical works may go contrary to this trend. A mathematical diagram not unlike the one added to the copy of *The whetstone of witte* discussed above occurs in a copy of *The mirror of architecture*.<sup>57</sup> As already noted, this copy contains several different types of reader engagement, including modifications or annotation added to the printed devices, underlinings and other annotations to the text, and even some handdrawn diagrams like this one of a right triangle in a section discussing staircases.<sup>58</sup> The drawing is found in the bottom part of the outer margin of the page, following a number of other annotations which summarize the most important principles of designing staircases. It visualizes what is only described verbally in the text, that is, the mathematical principles of the desired angle:

Lastly, to reduce this doctrine to some Natural or at least Mathematical ground, *Vitruvius* borroweth these proportions that make the sides of a Rectangular Triangle; that is, three for the Perpendicular from the stair-head to the ground, four for the ground-line it self or recession from the Wall, and five for the whole Inclination or slopeness in the Ascent.

The corresponding parts in the text have been underlined. The ink colour of the diagram differs from the other notes on the page, suggesting that it was added at a different time; however, there is no reason to suspect it was added

<sup>56</sup> It should be noted that books which contain no printed graphic devices at all were outside my scope, although such annotated books might, of course, contain handmade visual devices. There are also contrasting findings, see for example, Ring, ‘Annotating the *Golden Legend*’, 832, who found several instances of this type of reader engagement.

<sup>57</sup> BL copy at 1651/2159.

<sup>58</sup> Sig. B4v.

by a different hand. There is another diagram drawn in the margin on the final page, which demonstrates the ideal roof pitch, and here the ink colour matches that of the other annotations.

To sum up, reader-generated graphic devices occur sporadically, and it is difficult to identify any single intention behind them, even when one focuses on those that explicitly illustrate or enhance the text. Somewhat different are also commissioned devices, such as images, provided by professional artists after the printwork was finished. These could be considered a special case of handdrawn devices, and only a few examples occur in my dataset. For example, hand-painted heraldic shields, whose number and quality clearly indicate that they were made by a skilled artist, were added to a copy of *Monumenta Westmonasteriensia* (Henry Keepe, London, 1683).<sup>59</sup> While commissioned devices may add to the information value, as in the case of Gerard's herbal to which I will return below, the primary motivation may be to enhance the material and aesthetic value of the copy.

#### REACTIVE ANNOTATIONS TO PRINTED DEVICES

A category of additions to graphic devices anticipated but not observed in the dataset is reactive annotations. This category entails annotation that goes beyond simple factual or typographic corrections or insertions of additional information: Annotation that would show an emotional, reflective or evaluative response. An example that comes the closest is censorship in a copy of the *Legenda aurea*,<sup>60</sup> but this mostly occurs in paratextual spaces: The image serving as the title page bears smudges, and references to the pope and to Thomas Becket have been censored in the index and elsewhere – in fact, the whole section discussing him has apparently been removed and later repaired by inserting leaves from another copy, as noted in the catalogue entry. The other images in the copy are, however, untouched.

No further examples of this kind of annotation were found in the materials examined, although this does not rule out reactive annotations as a possible category. Reactive or reflective annotations were not entirely absent in the books consulted for this study; however, none occurred on the same pages as graphic devices.<sup>61</sup> A possible reason for their scarcity is that reactive annotations in general, or what Jackson calls 'expressions of opinion',<sup>62</sup> tend to become more common in the later period; especially in the

<sup>59</sup> Wing K127, BL copy at 295.l.33. Orgel, *The Reader in the Book*, 11–12, discusses handpainted heraldic shields in a copy of Holinshed's *Chronicles* (1586).

<sup>60</sup> STC 24877, BL copy at C.15.c.7. For further discussion of similar censoring, see Ring, 'Annotating the *Golden Legend*', 834–841 (esp. 836).

<sup>61</sup> For instance, some witty remarks, along with information supplied from other sources, may be found in a copy (at 983.f.1.) of Adam Olearius, *The voyages & travels of the ambassadors sent by Frederick Duke of Holstein* (London, 1662), Wing O269.

<sup>62</sup> Jackson, *Marginalia*, 50.

pre-print period, and perhaps during the early ages of print, most annotations (that engage with the text) seem to serve the purpose of summarizing, aiding in navigation and cross-referencing between texts. Although she emphasizes continuity, Jackson identifies diachronic changes in the general patterns of annotating and suggests that the change from annotations which add to the ‘cumulative scholarship’ towards more personal kind of annotation ‘has little or nothing to do with psychology of reading, and much to do with available models and with the steady increase of private ownership of books’.<sup>63</sup>

Annotations of this type would indicate an emotional or intellectual response to the graphic device, for instance a reader expressing their frustration or critiquing the device (the annotations to *The cosmographical glasse* again come close, but they are written as a response to the text, not its graphic devices). Such annotations could also tell of annotating as a public act, that is, engaging in a conversation with other readers, rather than annotating for private, personal use only.<sup>64</sup>

#### OTHER TYPES OF ANNOTATION IN BOOKS CONTAINING GRAPHIC DEVICES

In my process of collecting data, I paid particular attention to any reader-made marks that were found on pages with printed graphic devices. The dataset therefore contains examples of two additional categories outside the ‘core group’. The first is annotations which occur near graphic devices but do not interact with them, rather, they comment on text. I will discuss these briefly below. The second is writing and other marks that are not related to the text or subject matter at hand, nor to any graphic devices in the text – as discussed above, such marks have been compared to ‘graffiti’ and they are a very typical feature of early modern books.<sup>65</sup> I will not discuss them further here.

Annotations which occur in the proximity of graphic devices but which relate to the text rather than the device are relatively common; after all, this is the typical annotation found in books of all kinds and includes, for instance, simple ‘topic’<sup>66</sup> notes, summaries and literary references. Particularly interesting, however, are those examples where it is difficult to ascertain whether the annotation interacts with or is motivated by the graphic device. Two such cases are found in a copy of *The herball or Generall historie of plantes* of John

<sup>63</sup> Jackson, *Marginalia*, 50–1; she places the turning points in the history of annotation at ca. 1700 and ca. 1820.

<sup>64</sup> The argument for annotation evidencing activity in the public sphere has been made in the famous article by Lisa Jardine and Anthony Grafton, ‘“Studied for Action”: How Gabriel Harvey Read His Livy’, *Past and Present*, 129, No. 1 (1990), 30–78. The private versus public nature of Harvey’s marginalia has also been discussed by Scott-Warren, ‘Reading Graffiti’, 376.

<sup>65</sup> See Sherman, *Used Books*, 23; Scott-Warren, ‘Reading Graffiti’; see also e.g. Ring, ‘Annotating the *Golden Legend*’, 825.

<sup>66</sup> Cf. Grindley, ‘Reading *Piers Plowman*’, 83–4.

Gerard (London, 1597), which has hand-coloured illustrations.<sup>67</sup> The deep green colour in the image of *Bonus Henricus* ‘English Mercurie, or good Henrie’ (now known as Good-King-Henry) matches with the handwritten correction in the margins: the annotator has crossed out the printed description of the plant as ‘white or grayish of colour, and as it were covered ouer with a fine meate’ and supplied an interlinear correction ‘depe greine’.<sup>68</sup> A smaller correction has been inserted between lines to add ‘redish’ before the printed description ‘greene flowers in clusters’. It is unclear whether the annotations predate the colouring of the illustrations, or whether the correction originated with the artist and the annotator picked up on it, while adding some further knowledge about the colour of the flowers. The latter seems more likely, considering that the flowers are painted all green, and it would indicate that the annotator considered the illustrations authoritative enough to correct the text. However, it is also possible that the annotations were added first and the artist simply missed the tiny note on the reddish-green colour.

In a few additional cases, the annotations in the herbal may relate to the devices, although it seems more plausible that they primarily serve a navigational purpose, that is, marking the passage of text rather than the images. For instance, the annotator adds one such navigational note in the margin facing chapter 62, ‘of yello[w] Henban[e] or Engli[sh] Tobacco’, and two more for chapter 63, outlining the two species discussed in this chapter:

1. Tobacco of west Inde
2. Trinidad Tobacco

These names have been pulled from the text (‘the greater was brought into Europe out of the prouinces of America, which we call the west Indies: the other from Trinidada an Ilande neere vnto the continent of the same Indies’) rather than from the image captions, where the former is named ‘Tabaco or Henbane of Peru’.<sup>69</sup>

#### GRAPHIC DEVICES AND READING PRACTICES

In this study, I have explored how early modern readers engaged with in-text graphic devices – primarily images, diagrams and tables – by leaving annotations and other traces of reading. Rather than focus on an individual work, group of works or genre, my aim has been to provide an overview of annotations and graphic devices in English-language books at a wider scale, and thus reveal some of the ways in which manuscript and print were intertwined.

<sup>67</sup> STC 11750, BL copy at 35.g.13–14.

<sup>68</sup> Sig. R2r.

<sup>69</sup> Sig. S7r.

While the motivation behind manuscript additions to the printed copies I examined varies case by case, my dataset includes examples of, for instance, correcting inaccurate information in the graphic devices, mapping the information content of the text and the graphic devices, and ‘perfecting’ the printed devices by adding to the information or sometimes simply to the aesthetic value of the book.

Some caveats are in order. That these results are skewed by my choice of collection remains a possibility: Library collections are always a result of curatorial decisions and, especially when it comes to annotations, may not represent what once was a reality. Many illustrative examples have undoubtedly escaped my attention. However, by taking a set of annotated books as my starting point, and then focusing on those which contain graphic devices, I have aimed to cover a range of material that is multifaceted and representative enough to offer an idea of early modern readers’ approaches to visual content in books.

I have discussed four principal types of interaction with graphic devices: modifications or additions to printed graphic devices; whole or partial copies of the devices; reader-generated, i.e. handwritten or drawn devices (which may be original or introduced from sources outside the physical book at hand); and finally, reactive or personal comments on the devices, although examples of this type were limited to paratextual spaces and thus left outside the focus of the study. In addition to these four types, I have briefly discussed some types of annotation occurring in the same physical space as graphic devices, but which relates to the text rather than the visual content.

As may be expected, the books consulted contained the full range of annotations and other readerly marks as identified in previous marginalia studies. In many cases, these marks have nothing to do with the book’s graphic devices. Many of the books consulted were rich in annotation that shows engagement with the text, suggesting that these were books that were read and studied carefully by their early modern readers, but traces of engagement with the visual material were much rarer.<sup>70</sup> The paucity of marks pertaining to images and other graphic devices could be related to general practices of annotation and commonplacing: Early modern annotators were taught to mark and gather passages that could be quoted, memorized and reused.<sup>71</sup> Graphic devices do perhaps not play a great part in this primarily rhetorical practice. However, when interaction does occur, it shows that readers did interpret and use the graphic devices together with the text, and enhanced or corrected them when needed. In other cases, hand-drawn devices were added to

<sup>70</sup> While this also applies to, for example, woodcut images in my dataset, it is certainly not the universal truth: For instance, Ring, ‘Annotating the *Golden Legend*’, 831–2, discusses annotation made to woodcut images in several copies of the *Golden Legend*. A possible motivation he suggests is devotional, which is probably less relevant for practical and scientific genres, for example.

<sup>71</sup> On commonplacing, see for example, Sherman, *Used Books*, 44–5, and 127–48 for an illustrative case.

passages of text where such devices were not provided by the book producers, indicating a somewhat more advanced level of graphic literacy and familiarity with visual conventions.

No clear distinctions in styles of annotating in different genres emerged in my selection of books, which contained a range of genres and domains of knowledge such as scientific (e.g. medicine, mathematics and natural sciences), practical craft-related works (e.g. applied mathematics, economics), and religious, historical and political works. However, it would be worthwhile to pursue this line of enquiry, and particularly to conduct comparisons between different copies of the same work – as some marginalia scholars have done – in order to see whether they have attracted similar annotation and to gain a deeper understanding of early modern graphic literacy.

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## Abstract

Research into marginalia or reader annotations has become a well-established branch of early modern book studies, shedding light on one of the ways in which manuscript and print coexisted and interacted in this period. The present study sets out to discover how readers engaged with printed graphic devices and with texts that contain such devices, and whether the evidence of use indicates that actual readers' needs were aligned with those anticipated by writers and book producers. The study provides a survey of handwritten or handdrawn marks of reader engagement with images, tables, diagrams and other graphic devices in Early Modern English printed books published between 1473 and ca. 1700. The study identifies a 'core group' of four types of interaction with graphic devices: modifications or additions to printed graphic devices; whole or partial copies of the devices; handwritten or drawn original devices; and reactive or evaluative comments on the devices. The article shows that while early modern readers often annotated the text more readily than its graphic devices, the different kinds of interaction with graphic devices often indicate active engagement and understanding of the graphic conventions.