Notes

The abbreviated references to Vitruvius and Alberti (for example, *De architectura*, I,II,5) indicate the division of the Latin texts into books, chapters, and paragraphs according to: Vitruvius, *On Architecture [De architectura]*, ed. and trans. Frank Granger, Loeb Classical Library, 2 vols. (London and Cambridge, MA: W. Heinemann and Harvard University Press, 1931–1934; reprint Cambridge, MA: Harvard University Press, 1970); Alberti, *L'architettura [De re aedificatoria]*, trans. Giovanni Orlandi, with introduction and notes by Paolo Portoghesi, 2 vols. (Milan: Il Polifilo), 1966. All English translations of Alberti are from *On the Art of Building in Ten Books*, trans. Joseph Rykwert, Neil Leach, and Robert Tavernor (Cambridge, MA: The MIT Press, 1988; reprint 1994). The abbreviated titles of the books of Serlio's treatise are given in English (*Third Book*, *Fourth Book*, etc.). Full citations of references are given on their first occurrence in a chapter. All works cited more than once are also given in the bibliography. Except where otherwise indicated, references are to the first edition of a work or a later edition in the original language. References to English translations are given when the work has been quoted directly.

Chapter 1

1. *Oxford English Dictionary*, 2nd ed., s.v. "machine."
2. Unrelated and unknown to my grandmother, Marcel Duchamp had already experimented with different ways to mark out mass-produced, anonymous objects. His *Readymades* (produced from 1913: bicycle wheels, shovels, "fountains," etc.) were famously defined by André Breton in 1934 as "manufactured objects promoted to the dignity of objects of art through the choice of the artist." The identifying sign was normally the signature of the artist—Duchamp himself, or an apocryphal one.

3. On the opposition between "une fois pour toutes" and "une fois n'est rien" see Walter Benjamin, "L'oeuvre d'art à l'époque de sa reproduction mécanisée" (1936), republished in the original French in *Ecrits français*, ed. J.-M. Monnoyer (Paris: Gallimard, 1991), 148. The later and slightly different German version of the essay has been published in English as "The Work of Art in the Age of Mechanical Reproduction," in *Illuminations*, ed. Hannah Arendt, trans. Harry Zohn (New York: Schocken Books, 1968); all subsequent citations from the French and English versions of Benjamin's essay will refer to these editions.

4. Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction," 224.

5. See James S. Ackerman, "Style," in his *Distance Points* (Cambridge, MA: The MIT Press, 1991), 6–7; originally published in James S. Ackerman and Rhys Carpenter, *Art and Archaeology* (Englewood Cliffs, NJ: Prentice-Hall, 1963), 164–186. In another essay, "Architectural Practice in the Italian Renaissance," Ackerman wrote of Bramante's Roman works: "This lack of technical discipline may explain in part why the High Renaissance is one of the few great eras in architectural history in which a new style emerges without the assistance of any remarkable structural innovation" (in *Distance Points*, 363; originally published in *The Journal of the Society of Architectural Historians* XIII [October 1954]: 3–11).

6. Siegfried Giedion, *Mechanization Takes Command: A Contribution to Anonymous History* (New York: Oxford University Press, 1948) reprint, New York: W. W. Norton, 1969), 32: "The second half of the sixteenth century, especially in Italy, saw an increase of technical books. . . . In hardly a point however did they advance beyond Hellenistic times. They are but spelling exercises in mechanization. And even more remarkable to a later period: The mechanization of production was not attempted." It was only some centuries later that "the rationalistic view became dominant and moved continually toward utilitarian goals. This was the predestined hour of mechanization."

7. With some exceptions; see chapter four, section II, note 78.

8. On the structure of the Serlian treatise and its organization into seven books, see my *Metodo ed ordini nella teoria architettonica dei primi moderni: Alberti, Raffaello, Serlio e Camillo*, Bibliothèque d'Humanisme et Renaissance, CCLXXI (Geneva: Droz, 1993), 65–84. See also the present work, chapter four, section I, notes 15 and 19. For a counterargument see in particular Francesco Paolo Fiore's introduction to Sebastiano Serlio, *Architettura civile. Libri sesto, settimo e ottavo nei manoscritti di Monaco e Vienna*, eds. Francesco Paolo Fiore and Tancredi Carunchio (Milan: Il Polifilo,

1994), xxxi. On some aspects of the standardization of urban form brought about by printed images in the sixteenth century see my "Il cielo e i venti. Principi ecologici e forma urbana nel *De Architectura* di Vitruvio e nel vitruvianismo moderno," *Intersezioni, Rivista di Storia delle Idee* XIII (April 1993): 3–41.

9. For comparison see chapter five, note 25. See also my "How Do You Imitate a Building That You Have Never Seen? Printed Images, Ancient Models, and Handmade Drawings in Renaissance Architectural Theory," *Zeitschrift für Kunstgeschichte* 64 (2001): 223–233.

10. For the notion of the "milieu favorable" in the history of technological innovations, see André Leroi-Gourhan, *Milieu et techniques* (Paris: Albin Michel, 1943–1945; reprint 1991), 373–377.

11. The first version of Benjamin's famous essay that was published in French in 1936 under his direct supervision was titled "L'oeuvre d'art à l'époque de sa reproduction mécanisée." But the German title of the piece, to which Benjamin refers in his correspondence of 1935, would be better translated "The work of art in the age of its technical reproducibility." See *Gesammelte Schriften*, vol. I, 3 (Frankfurt: Suhrkamp, 1972), 982–1020; and the observations of J.-M. Monnoyer in Benjamin, *Ecrits français*, 117–139.

12. The phrase is from the title of Marshall McLuhan's celebrated study of early print culture, *The Gutenberg Galaxy: The Making of Typographic Man* (Toronto: University of Toronto Press, 1962).

13. Victor Hugo, *Notre-Dame de Paris*, book V, chapter I, originally published in 1831. I have cited the edition edited by J. Maurel (Paris: Librairie Générale Française, 1972), 222.

14. The original reads:

Nos lectrices nous pardonneront de nous arrêter un moment pour chercher quelle pouvait être la pensée qui se dérobait sous ces paroles énigmatiques de l'archidiacre: Ceci tuera cela. Le livre tuera l'édifice. A notre sens, cette pensée avait deux faces. [. . .] Cela voulait dire: La presse tuera l'eglise. Mais sous cette pensée il y en avait à notre avis un autre [. . .]: l'imprimerie tuera l'architecture. (Hugo, 224–25)

The second chapter of the fourth book does not properly belong to Hugo's narration; it is a digression in which the author sets down various reflections on, among other things, the history and theory of the arts. This chapter was not included in the first edition of the novel (1831), but was added to the edition of December 1832, when the success of the book was already assured. According to Hugo, the later additions were written at the same time as the rest of the book, and were then lost and rediscovered by chance

only two years later. Hugo's phrase has by now become a standard adage and has found its way into French dictionaries. In the 1990 edition of the *Petit Robert*, for example, the entry for "ceci tuera cela" reads: "ce qui est nouveau fera disparaître ce qui est ancien."

Chapter 2

1. "Alla moltitudine di quelli che non intendono." For this passage of Serlio's *Fourth Book*, see the following editions: *Regole generali di architettura* [. . .] *con nuove additioni* (Venice: F. Marcolini da Forlì, 1540), f. 37*v*; *Regole generali di architettura* [. . .] *Con nuove additioni, e castigationi, dal medesimo auttore in terza edittione fatte: come nella seguente carta e notato* (Venice: Francesco Marcolini, 1544), f. 37*v*; *Tutte le opere di Sebastiano Serlio bolognese* [. . .] *et hora di nuovo aggiunto (oltre il libro delle porte) gran numero di case private nella Città, et in villa, et un indice copiosissimo raccolto per via di considerationi di M. Gio. Domenico Scamozzi* (Venice: Francesco de' Franceschi, 1584), f. 159*v*. See also Carpo, *La maschera e il modello. Teoria architettonica ed evangelismo nell'*, Extraordinario Libro *di Sebastiano Serlio* (Milan: Jaca Book, 1993), 128, note 53.

2. Christof Thoenes, "Vignola's *Regola delli Cinque Ordini*," *Römisches Jahurbuch für Kunstgeschicte* XX (1983): 345–376 (see in particular 347, note 5); Gabriele Morolli, *"Le belle forme degli edifici antichi." Raffaello ed il progetto del primo trattato rinascimentale sulle antichità di Roma* (Florence: Alinea, 1984), 101, note 122.

3. See below, chapter three, section I, note 3.

4. Guillaume Philandrier, *In Decem Libros M. Vitruvii Pollionis de Architectura Annotationes* [. . .] (Rome: Dossena, 1544), annotation 17 on Vitruvius, I,VI. A second edition was revised and expanded by the author, *M. Vitruvii Pollionis de Architectura* [. . .] *Accesserunt, Gulielmi Philandri Castilioni, civis Romani annotationes castigatiores* [. . .] (Lyons: Jean de Tournes, 1552); these and other editions are hereafter referred to as *Annotations*. The passage is cited and discussed in Frédérique Lemerle-Pauwels, "Architecture et humanisme au milieu du XVIème siècle: les *Annotationes* de Guillaume Philandrier. Introduction, traduction et commentaire, livres I–V" (Ph.D. diss., University of Tours and Centre d'Etudes supérieures de la Renaissance, 1991), 105–106; revised as *Les* Annotations *de Guillaume Philandrier sur le* De Architectura *de Vitruve, livres I à IV* (Paris: Picard, 2000). See also the following note.

5. The references are: *De architectura*, I,VI,12 (mention of two schemata, one on the division of the horizon according to the quadrants of the winds, the

other on the orientation of streets and squares within cities to reduce exposure to wind); III,III,3 (*entasis*); III,IV,5 (*scamilli impares*); III,V,8 (spirals of Ionic volutes); V,IV,1 (Aristoxenus's musical scale); V,V,6 (the same, apropos of the use of vases for amplifying sound in theaters); VI,I,7 (the same, apropos of changes in the pitch of voice as a function of latitude); VIII,V,3 (illustration or "exemplar" of the "chorobates," a topographical instrument); IX,pref.,5 (doubling of the square); IX,pref.,8 (the use of the Pythagorean triangle for determining the incline of stairs); X,VI,4 (the same, for determining the working angle of water wheels). In all, eleven passages in the text refer to a set of nine different images. The first edition of Philandrier's *Annotations* (1544) leaves out V,IV,1 and VI,I,7; the revised edition of the *Annotations* (Lyons, 1555) includes V,IV,1. Vitruvius designates these images with the terms *forma, schema, diagramma* and *exemplar.* See Pierre Gros, "Note sur les illustrations du *De Architectura*," in his "Vitruve et les ordres" in *Les traités d'architecture de la Renaissance: actes du colloque tenu à Tours du 1er au 11 juillet 1981*, ed. Jean Guillaume (Paris: Picard, 1988), 57–59. W. Sackur, in *Vitruv und die Poliorketiker* (Berlin, 1925), 12–19, argues that the original Vitruvian text was not illustrated, a thesis that has been refuted by Carol Herselle Krinsky in "Seventy-eight Vitruvian Manuscripts," *Journal of the Warburg and Courtauld Institutes* XXX (1967): 43.

6. *De architectura*, X,VI,4. See also the preceding note.

7. *De architectura*, X,VIII,6.

8. *De architectura*, IV,VIII,7, On the various types of temple: "Omnes aedium sacrarum ratiocinationes, ut mihi traditae sunt, exposui ordinesque et symmetrias eorum partitionibus distinxi, et quorum dispares sunt figurae et quibus discriminibus inter se sunt disparatae, *quoad potui significare scriptis*, exposui" (emphasis mine). English translation from *Vitruvius on Architecture*, Loeb Classical Library, ed. and trans. Frank Granger, 2 vols., vol. 1 (Cambridge, MA: Harvard University Press, 1931), 247. The passage is cited and discussed in Gros, "Note sur les illustrations du *De Architectura*," 58.

9. *De architectura*, I,I,18.

10. *De architectura*, I,II,2.

11. Gros, "Note sur les illustrations du *De Architectura*," 58.

12. See John James Coulton, *Greek Architects at Work: Problems of Structure and Design* (London: Elek, 1977), 51–73; and "Incomplete Preliminary Planning in Greek Architecture: Some New Evidence," in *Le dessin d'architecture dans les sociétés antiques: Actes du Colloque de Strasbourg, 26–28 janvier,*

1984 (Leiden: E. J. Brill, 1985), 103–122; E. Frézouls, "Vitruve et le dessin d'architecure," in *Le dessin d'architecture*, 213–229; Spiro Kostof, ed., *The Architect: Chapters in the History of the Profession* (New York: Oxford University, 1977), 12–15.

13. "Conscripsi praescriptiones terminatas [. . .] Namque his voluminibus aperui omnes disciplinae rationes," *De architectura*, I,pref.,3. English translation by Frank Granger, *Vitruvius on Architecture*, 5.

14. Kurt Weitzmann, *Illustrations in Roll and Codex: A Study of the Origin and Method of Text Illustration* (Princeton: Princeton University Press, 1947; reprint 1970) and "Scientific and Didactic Treatises," in his *Ancient Book Illumination* (Cambridge, MA: Harvard University Press, 1959), 5–31.

15. Weitzmann cites fewer than ten examples; see *Illustrations in Roll and Codex*, 47–57 and *Ancient Book Illumination*, 5–31.

16. Among the earliest illuminated manuscripts devoted to scientific topics, Weitzmann mentions a "codex from about the sixth century in the Library of Wolfenbüttel which contains a *Corpus Agrimensorum Romanorum*, a collection of treatises by Roman land surveyors. One of these treatises entitled *De limitis constituendibus* is attributed to a certain Hyginus, who lived in the time of Trajan and is not to be confused with the mythographer of the same name" (7). Weitzmann also mentions the Venice manuscript of the herbal of Dioscurides (Codex Anicia, sixth century). There are references to *diagrammata* in Greek treatises on geometry and medicine dating from the fifth to the second centuries B.C.E (Weitzmann, *Illustrations in Roll and Codex*, 14, 47). Weitzmann also cites a passage in Pliny (*Natural History*, XXV,4) in which the author refers to illustrated herbals: "this passage clearly indicates that in this case illustrations were not merely an accompaniment but the primary part, with the text being an accompaniment to the pictures" (Weitzmann, *Ancient Book Illumination*, 11). Surprisingly, Weitzmann fails to acknowledge that Pliny cites such illustrated herbals as examples *not* to follow (see note 18 below). Weitzmann makes no mention of Vitruvius.

17. This passage is cited (without exact reference) in William M. Ivins, *Prints and Visual Communication* (Cambridge, MA: Harvard University Press, 1953; reprint The MIT Press, 1978), 4, 11. In the fifteenth century, it was not uncommon for commercial scriptoria to take orders for 200 or even 400 copies of the same manuscript; see for example Lucien Febvre and Henri-Jean Martin, *L'apparition du livre* (Paris: Albin Michel, 1958), 22 and following; Joseph Rykwert, "On the Oral Transmission of Architectural Theory," *AA Files* 6 (1984): 14–28 (see especially 20, note 46); reprinted in *Les traités d'architecture de la Renaissance*, 31–48.

18. Galen (*De simplicium medicamentorum facultatibus libri undecim*, VI,I) faults those authors who have illustrated or described medicinal herbs without having examined them in person, trusting rather in other inaccurate illustrations and descriptions. To break this cycle, Galen declares that he will limit himself to the enumeration of thirty-six plants without adding any information over and above their respective names: "nec trigintasex herbae illae ultra nomen ipsius quicquam sunt, ne ulla ipsis res subiacet," Latin translation by T. G. Gaudanus (Paris: Gazellus, 1547; Lyons: Rovillium, 1552), 351–353. Pliny the Elder (*Natural History*, XXV, 4–5) writes of three Greek botanists who illustrated their herbals with colored pictures. But these pictures will deceive you, Pliny observes, when the colors are numerous, especially if the artist is competing with nature, and the images will be greatly affected by the unpredictability of copyists. For this reason, other authors avoid using illustrations, while still others stick to a simple list of names ("pinxere namque effigies herbarum atque ita subscribere effectus. Verum et pictura fallax est coloribus tam numerosis, praesertim in aemulationem naturae, multumque degenerat transcribentium fors varia"), *Histoire Naturelle*, ed. Jacques André (Paris: Les Belles Lettres, 1974), 28–29.

This diffidence concerning images, by this time a general one bearing no particular connection to the problem of reproducibility, shows up in a famous passage by Isidore of Seville: "Pictura autem dicta quasi fictura; est enim imago ficta, non veritas. Hinc est fucata, id est ficto quodam colore inlita, nihil fidei et veritatis habentia." *Isadoreo Hispalensis Episcopi Etymologiarum sive Originum libri XX*, ed. W. M. Lindsay (Oxford, 1911), XIX,16,1. The passage from Pliny is cited and discussed in Ivins, *Prints and Visual Communication*, 15: "In other words [Pliny describes] a complete breakdown of scientific description and analysis once it was confined to words, without demonstrative pictures." Ivins attributes to the mechanical reproduction of images a central role in the birth and development of modern science and technology. Without the "exactly repeatable pictorial statement" (3), he says, "most of our modern technologies could not exist. Without them we could have neither the tools we require nor the data about which we think" (160). See also below, chapter three, section I, note 30. All the same, even after the invention of printing, an echo of the arguments of Pliny and Galen turns up in several Renaissance botanical texts: in the context of iconoclastic debates, even the illustrations of scientific treatises were in some cases criticized or omitted for theological reasons, based on the strict application of the scriptural supremacy of word over image; on this see below, chapter five, section IV, note 70.

19.   Strabo's *Geographia* is a work in seventeen books, and the purpose of this monumental work is the creation of a geographic map of the known world—but this treatise did not include any actual maps. As the author explains, the draftsman will be guided by the text, in which the shapes and dimensions of various territories are described:

in every case, in lieu of a geometrical definition, a simple and roughly outlined definition is sufficient. So, as regards a country's size, it is sufficient if you state its greatest length and breadth [. . .]; as regards shape, if you liken a country to one of the geometric figures (Sicily, for example, to a triangle), or to one of the other well-known figures (for instance, Iberia to an oxhide, the Peloponnesus to a leaf of a plane-tree). (Strabo, *Geographia*, II,I,30; *The Geography of Strabo*, Loeb Classical Library, ed. and trans. Horace Leonard Jones, vol. 1 [London: William Heineman and G. P. Putnam's Sons, 1917–32], 315–17.)

The idea that a text on geography should be used for drawing a map that is not included in the work might seem paradoxical; Ptolemy later systematized this same principle with Cartesian rigor. As we read in the first book of his *Geographia* (or *Cosmographia*),

It remains for us to turn our attention to the method of making maps. There are two ways in which this matter may be treated; one is to represent the habitable earth as spherical; the other is to represent it as a plane surface. Both have this common purpose, that is, they are constructed for use, to show (*in the absence of any picture*) how *from commentaries alone* the student may be able, with the utmost facility, to construct a new map. Recently the making of new copies from earlier copies has had the result of increasing some of the faults that were originally small into great discrepancies. If then there are not enough data for the method of constructing maps from commentaries (without any traditional pictures), it will be impossible for us to reach our desired end. (Emphasis mine; Ptolemy, *Geographia*, [*Geographikè Uféghesis*], I,18; *Geography of Claudius Ptolemy*, trans. and ed. Edward Luther Stevenson [New York: The New York Public Library, 1932], 38–39. Greek text and Latin translation: see *Claudii Ptolemai Geographia. E codicibus recognouit, prolegominis, annotatione, indicibus, tabulis instruxit Carolus Mullerus* [Müller], Paris, Firmin-Didot, 1883–1901, vol. I, 1883, 48–49.

To make up for the shortcomings of his predecessors (in particular Marinus of Tyre), Ptolemy describes two new methods of cartographic representation and goes on to offer a systematic list of the coordinates (in longitude and latitude) of more than 8,000 places.

Whether in empirical form, as with Strabo's maps, or in algorithmic form, as with Ptolemy's, maps were considered by ancient geographers to be only the ephemeral offshoots of the texts used to generate them. The text was designed to be transmitted, while the images were never meant to be copied. The images were to be drawn up anew each time from a copy of the text. The fact that this principle was not always respected (as Ptolemy himself complained, already in antiquity many geographic maps were reproduced without following the coordinates listed in the commentaries) does not make it any less legitimate. A synopsis of this Ptolemaic "question of the images" is found in Joseph Fischer, "De Cl. Ptolemaei vita operibus geographia praesertim eiusque fatis," in *Claudii Ptolemaei Geographiae codex Urbinas Graecus 82, phototypice depictus . . .* , Codices e Vaticanis selecti quam simillime expressi, XVIII, vol. I (Leiden: Brill and Harrassowitz, 1932), 136–158. See also Mario Carpo, "*Descriptio Urbis Romae.* Ekphrasis geografica e cultura visuale all'alba della rivoluzione tipografica," *Albertiana* 1 (1998): 111–132, and bibliography; revised as "La *Descriptio Urbis Romae:* ecphrasis géographique et culture visuelle à l'aube de la révolution typographique," in Leon Battista Alberti, *Descriptio Urbis Romae: Édition critique, traduction et commentaire par Martine Furno et Mario Carpo,* Cahiers d'Humanisme et Renaissance, vol. 56 (Geneva: Droz, 2000), 65–96.

20. This is the description of the basilica built by Vitruvius himself at Fanum Fortunae (present-day Fano, on the Adriatic coast of Italy); *De architectura,* V,I,6–10.

21. See Carpo, "Il cielo e i venti. Principi ecologici e forma urbana nel De architectura di Vitruvio," *Intersezioni, Rivista di Storia delle Idee* XIII, 1 (1993): 27 and notes.

22. On Vitruvius as a member of the *ordo apparitorum,* a "middle class" of civil servants and specialists in the service of various state magistracies, see Pierre Gros, "*Munus non ingratum.* Le traité vitruvien et la notion de service," in *Le projet de Vitruve. Objet, destinataires et réception du De Architectura. Atti del Colloquio di Roma, marzo 1993* (Rome: Publications de l'École française de Rome, 1994), 75–90. Gros concludes that the *De architectura* was "un livre à l'usage des responsables [of these state agencies], et d'abord des responsables politiques" (90).

Chapter 3

1. See chapter two, note 5.

2. Sélestat Codex, tenth century (Sélestat, Municipal Library, Ms. 17). See for comparison the illustrations of Ms. Harleianus 2767, and other spo-

radic illustrations cited by Carol Herselle Krinsky, "Seventy-eight Vitru-vian Manuscripts," *Journal of the Warburg and Courtauld Institutes* XXX (1967): 41–43 and note 65; Pierre Gros's comment in his "Note sur les il-lustrations de *De Architectura*," in *Les traités d'architecture de la Renaissance: Actes du colloque tenu à Tours du 1er au 11 juillet 1981*, ed. Jean Guillaume (Paris: Picard, 1988), 58: "ces dessins [. . .] ne sont, selon toute apparence, qu'une glose graphique d'époque tardive, [. . .] sans rapport réel avec les passages qu'ils prétendent illustrer"; P. Ruffel and J. Soubiran, "Recherches sur la tradition manuscrite de Vitruve," *Pallas* IX (1960): 3–154. An anonymous and undated Vitruvian manuscript that is frag-mentary but richly illustrated was recently discovered in the Biblioteca Ariostea in Ferrara. Claudio Sgarbi suggests a date in the late Quattro-cento based on the calligraphy and the watermarks on the paper; see his "A Newly Discovered Corpus of Vitruvian Images," *Res* 23 (1993): 31–52. The illustrations, however, appear to be later than this.

3. On the manuscript tradition of the herbal of Dioscurides (*De Materia Medica*), see Kurt Weitzmann, *Ancient Book Illumination* (Cambridge, MA: Harvard University Press, 1959), 11–15 and *Illustrations in Roll and Codex: A Study of the Origin and Method of Text Illustration* (Princeton: Princeton University Press, 1947; reprint 1970), 95, 134, and bibliography; Ch. Singer, "The Herbal in Antiquity," *Journal of Hellenic Studies* XLVII (1927): 40 and following; William M. Ivins Jr., *Prints and Visual Commu-nication* (Cambridge, MA: Harvard University Press, 1953; reprint The MIT Press, 1992), 33.

4. The *Menolog* of Basil II (976–1025), executed in the imperial scriptorium at Constantinople, was illustrated with 430 miniatures that represent the months of the year (although only part of the cycle was completed). Each miniature was carried out and signed by one of the eight artists who worked in the scriptorium. See Weitzmann, *Illustrations in Roll and Codex*, 195–205.

5. See Weitzmann, *Ancient Book Illumination*, chapter 1, "Scientific and Di-dactic Treatises," 5–31.

6. *De architectura*, V,pref.,2–3; *Vitruvius on Architecture*, Loeb Classical Li-brary, ed. and trans. Frank Granger, 2 vols., vol. 1 (Cambridge, MA: Har-vard University Press, 1931; reprint 1995), 250–252.

7. *De architectura*, V,pref.,5; *Vitruvius on Architecture*, 252–254.

8. Saint Augustine, *Confessiones*, V,III,3; *Confessions*, ed. Henry Chadwick (Oxford: Oxford University Press, 1992), 73.

9. Augustine, *Confessiones*, VI,X,6; *Confessions*, 103.

10. Augustine, *Confessiones*, VI,III,3; *Confessions*, 93.

11. For a recent survey on this old question see Joseph Rykwert, "On the Oral Transmission of Architectural Theory," *AA Files* 6 (1984): 14–28, and bibliography (republished in *Les traités d'architecture de la Renaissance*, 31–48); and Christian Freigang, "Ausstellungen und neue Literatur zum gotischen Baubetrieb," *Kunstchronik* 43 (1990): 606–27.

12. See the *Livre des Compagnons-Tourneurs* (1731), published in Émile Coornaert, *Les Compagnonnages en France: du moyen âge à nos jours* (Paris: Les Éditions ouvrières, 1966), 341 and following. Rykwert comments on this passage in "On the Oral Transmission of Architectural Theory," 19 note 33.

13. There are two versions of the Regensburg statutes, the first written in Regensburg the 1459; the second version, known as the "Strasbourg statutes of 1459," was in fact ratified in Speyer in 1464. A copy of the statutes was entrusted to every master who worked under the auspices of the Strasbourg lodge. With rare exceptions, it was forbidden to copy this document, which was read in public once annually at a guild meeting. When the work at a building site was completed or suspended, the master had to return the book to the guild in Strasbourg. See Roland Recht, ed. *Les bâtisseurs de cathédrales gothiques*, exh. cat. (Strasbourg: Editions Les Musées de la Ville de Strasbourg, 1989); Roland Recht, *Théorie et traités pratiques d'architecture au Moyen Age*, in *Les traités d'architecture de la Renaissance*, 19–30; Rykwert, "On the Oral Transmission of Architectural Theory," 14–28, and bibliography; Lon R. Shelby, "The 'Secret' of Mediaeval Masons," in *On Pre-Modern Technology and Science: Studies in Honor of Lynn White* (Malibu: Undena, 1976); François Bucher, *Architector: The Lodge Books and Sketchbooks of Medieval Architects* (New York: Abaris Books, 1979); Paul Frankl, *The Gothic: Literary Sources and Interpretations Through Eight Centuries* (Princeton: Princeton University Press, 1960), 54, 70, 110 and following, 159 and following; and "The Secret of Mediaeval Masons, with an explanation of Stornaloco's Formula, by Erwin Panofsky," *The Art Bulletin* XXVII (1945): 46–65. Frankl's and Panofsky's analysis of the "formulas" (geometric constructions) that would in part have replaced the drawing up of project plans ("blueprints") has primarily to do with the communication of technical data among patrons, builders, and the building site itself. The means of accumulating and transmitting abstract architectural knowledge in space and time (to distant places or future generations) do sometimes overlap with the means of communicating the plans for a particular project to its builders. However, these two topics (point-to-point technical communication as opposed to wideranging publication) are conceptually distinct: see below, chapter four, note 82.

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14. Matthias (or Matthäus) Roriczer, *Das Büchlein von der Fialen Gerechtigkeit* (originally, *dz puechlein der fialen gerechtikeit*) (Regensburg, 1486); edited and translated into English by Lon R. Shelby, *Gothic Design Techniques: The Fifteenth Century Design Booklets of Matthias Roriczer and Hanns Schmuttermayer* (Carbondale and London: Southern Illinois University Press and Feffer and Simons, 1977), 19 and following. Matthias Roriczer seems to have printed and distributed the work himself at the urging of the Bishop of Eichstatt, to whom the book is dedicated. The colophon gives the date of June 28, 1486, making Roriczer's book almost exactly contemporaneous with two other important architectural works. These are the first printed editions of Giovanni Sulpizio da Veroli's *Vitruvius* (probably printed in Rome in the summer of 1486) and Alberti's *De re aedificatoria* (printed in January 1485 according to the old Florentine calendar, which may correspond to January 1486 on our modern calendar). On the role of the printed book in the crisis of the guild system, see Elizabeth L. Eisenstein, *The Printing Revolution in Early Modern Europe* (Cambridge: Cambridge University Press, 1983), 34 and following ("the new importance of [. . .] learning by reading"); Ivins, *Prints and Visual Communication*, 19–20; and Rykwert, "On the Oral Transmission of Architectural Theory," with additional bibliography.

15. On the drawings of the cathedral builders, see Roland Recht, "Sur le dessin d'architecture gothique," in *Etudes d'art médiéval offertes à Louis Grodecki*, ed. Sumner McKnight Crosby, André Chastel, Anne Prache, Albert Chatelet (Paris: Editions Ophrys, 1981), 233–243; *Le dessin d'architecture: Origine et fonctions* (Paris: A. Biro, 1995); and Roland Bechmann, *Villard de Honnecourt: La pensée technique au XIIIe siècle et sa communication* (Paris: Picard, 1991), 52–58.

16. See note 13 above and chapter four, note 82.

17. Also variously referred to as an album or *Livre de Portraiture* Villard de Honnecourt, Paris, Bibliothèque: Nationale, Ms. fr. 19093. A facsimile of the codex was recently published with a transcription, translation into modern French, and commentary by Alain Erlande-Brandeburg, Régine Pernoud, Jean Gimpel, and Roland Bechmann, *Carnet de Villard de Honnecourt, d'après le manuscrit conservé à la Bibliothèque Nationale de Paris* (Paris: Stock, 1986). See also Bechmann, *Villard de Honnecourt*, with bibliography; for a different interpretation, see Hans R. Hahnloser, *Villard de Honnecourt. Kritisch Gesamtausgabe des Bauhüttenbüches MS fr 19093 der Pariser National Bibliotek* (Vienna: A. Schroll, 1935; reprint Graz, 1972). For a recent bibliography on Villard de Honnecourt see Carl F. Barnes, Jr., *Villard de Honnecourt, the Artist and His Drawings: A Critical Bibliog-*

raphy (Boston: G. K. Hall, 1982): already in 1982 Barnes listed 272 titles. See also his "Le 'problème' Villard de Honnecourt," in *Les bâtisseurs des cathédrales gothiques*, 209–233; and Robert W. Scheller, *Exemplum: Model Book Drawings and the Practice of Artistic Transmission in the Middle-Ages, ca. 900–ca. 1470*, trans. Michael Hoyle (Amsterdam: Amsterdam University Press, 1995), 176–188.

18. Villard, Ms. fr. 19093, f. 1*v*.

19. Barnes divides into four classes the functions that have been suggested for Villard's book: sketch book, pattern book, lodge book, and instruction manual; see his *Villard de Honnecourt*, xxxv. See also Scheller, *Exemplum*, 183; L. R. Shelby, review of *Villard de Honnecourt. Kritisch Gesamtausgabe des Bauhüttenbüches MS fr 19093 der Pariser National Bibliotek*, by H. R. Hahnloser, *Speculum* 50 (1975): 499; C. F. Barnes and L. R. Shelby, "The Codicology of the Portfolio of Villard de Honnecourt," *Scriptorium* 42 (1988): 20–48.

20. Villard, Ms. fr. 19093, f. 15.

21. See Bechmann, *Villard de Honnecourt*, 24.

22. Bechmann, *Villard de Honnecourt*, 24.

23. Villard, Ms. fr. 19093, f. 19*v*.

24. See Bechmann, *Villard de Honnecourt*, 313–314, 357–360, and bibliography.

25. Villard, Ms. fr. 19093, ff. 19*v*–21.

26. See Bechmann, *Villard de Honnecourt*, 150–154.

27. See Bechmann, *Villard de Honnecourt*, 172.

28. ["Event" in the sense of a concrete and embodied particular—Tr.]

29. According to Joseph M. Bochenski, a syllogistics based on singular premises became widespread only in the seventeenth century (Port Royal). Syllogisms with specific minor premises are found in Ramus (Pierre de la Ramée, 1515–1572). As an isolated case, William of Ockham (ca. 1280–1349, *Summa logicae*, III,1,3) had already theorized a syllogistics based on singular terms and premises: "This may well be termed a revolutionary innovation. Not only are singular terms admitted, contrary to the practice of Aristotle, but they are formally equated with universal ones. The ground advanced for this remarkable position is that singular terms are names of *classes*, just like universal terms, only in this case unit-classes." Bochenski, *Formale Logik* (Freiburg: K. Alber, 1956); *A History of Formal Logic*, trans. and ed. Ivo Thomas (Notre Dame, IN: University of Notre Dame Press, 1961), 232.

30. See Ivins, *Prints and Visual Communication*, 63:

I have a notion that much of the philosophical theory of the past can eventually be traced back to the fact that, whereas it was possible [. . .] to describe or define objects by the use of words [. . .] addressed, mediately or immediately, to the ear, it was not possible to describe or define them by exactly repeatable images addressed to the eye. [. . .] Plato's ideas and Aristotle's forms, essences, and definitions, are the specimens of this transference of reality from the object to the exactly repeatable and therefore seemingly permanent verbal formula.

According to Ivins, the diffusion of the mechanical reproduction of images in the sixteenth century favored the passage from an abstract scientific thought, based on generic categories, to modern science, based on the visual individuation of specific events ("ipseity"): 53, 160–62, and elsewhere.

31. Erwin Panofsky, *Gothic Architecture and Scholasticism* (Latrobe, PA: Archabbey Press, 1951; reprint Cleveland: Meridian Books, 1970), 49.

32. See Carlo Diano, *Forma e evento. Principi per una interpretazione del mondo greco* (Venice: Neri Pozza, 1952).

33. On the arithmeticization of modern scientific thought, see Alexandre Koyré, "Du monde de l' 'à peu près' à l'univers de la précision," *Critique* 28 (1948). On the importance of printing for the rise of arithmetic see Eisenstein, *The Printing Revolution in Early Modern Europe*, 33, 239, and bibliography. See also Alberto Perez-Gomez, "Geometry and Number in Architectural Theory" (Ph.D. diss., University of Essex, 1976). On the relationship between geometry and arithmetic in the Renaissance theory of the orders, see my *Metodo e ordini nella teoria architettonica dei primi moderni*, Travaux d'Humanisme et Renaissance, 271 (Geneva: Droz, 1993), 182–83, notes 19–22, and bibliography. See also below, chapter five, notes 66 and 67; and chapter six, note 16.

34. Richard Krautheimer, "Introduction to an 'Iconography of Medieval Architecture,'" *Journal of the Warburg and Courtauld Institutes* V (1942): 1–33; reprinted in *Studies in Early Christian, Medieval, and Renaissance Art* (New York: New York University Press, 1969), 115–150. Krautheimer remarks on an "'indifference' towards precise imitation of given architectural shapes," 119; he continues,

This inexactness in reproducing the particular shape of a definite architectural form, in plan as well as in elevation, seems to be one of the outstanding elements in the relation of copy and original in medieval architecture. [. . .] This particular attitude suggests a quite different approach as compared with that of the modern mind to the whole question of copying. 120–21.

35. Krautheimer, "Introduction to an 'Iconography of Medieval Architecture,'" 127 and note 88.

36. Krautheimer, "Introduction to an 'Iconography of Medieval Architecture,'" 130.

37. Adamnan, *De Locis Sanctis Libri Tres*, reproduced in Paul Geyer, *Itinera Hierosolimitana*, Corpus Scriptorum Ecclesiasticorum Latinorum, XXXIX (Vienna, 1898), 219–297 (preface, with bibliography and *index codicum*, xxxiii–xxxix): 221. This passage is cited and discussed by Krautheimer, "Introduction to an 'Iconography of Medieval Architecture,'" 129–130 and fig. 31. See also J. Wilkinson, *Jerusalem Pilgrims before The Crusades* (Warminster, 1977), 95–166, 193–97; Scheller, *Exemplum*, 5–7; and Gourgues, Alexis, vicomte de, *Le Saint Suaire, suivi d'un essai sur les pèlerinages à Jérusalem avant les Croisades par Martial Delpit* (Périgueux: J. Bounet, 1868), 259–304.

38. *De architectura*, VI,pref.,1; *Vitruvius on Architecture*, 2–3.

39. Adamnan, *De Locis Sanctis*, I,II; Geyer, *Itinera Hierosolimitana*, 230. Cited and discussed in Krautheimer, "Introduction to an 'Iconography of Medieval Architecture,'" 129–130, notes 35, 55, 69, 99, and fig. 31. Geyer (1898, xxxiii–xxxix) dates Arculf's account to some time around 670. Geyer reviews 18 codices, and uses four, but the image that he reproduces (and that are taken up by Delpit, Krautheimer, etc.) do not come from Codex Y (Vindobon.) but from Codex P (Parisinus); the illustrations of Y are rejected by Geyer as *exornatae et amplificate* (p. xxxix). We have no information on other possible illustrations to the other manuscripts.

40. Procopius, *Peri Ktismaton*, I,I,27; *Buildings*, Loeb Classical Library, trans. H. B. Dewing (London: William Heinemann, 1940; reprint 1971), 13.

41. Julius von Schlosser, "Zur Kenntnis der künstlerischen Ueberlieferung im späten Mittelalter," *Jahrbuch der kunsthistorischen Sammlungen des allerhöchsten Kaiserhauses* XIX (1902): 279–286, 318–326. See also Scheller, *Exemplum*, 7–10.

42. Cennino Cennini, *Il libro dell'Arte*, ed. Carlo and Gaetano Milanesi (Florence: Le Monnier, 1859), chapters 23–26. Cited and discussed in Scheller, *Exemplum*, 38, 72 and note 203.

43. In Poitiers in 1389, a certain Jacquemart de Hesdin, painter, was tried and convicted of having stolen drawings from the workshop of a colleague. See A. de Champeaux and P. Gauchery, *Les travaux d'art exécutés pour Jean de France, duc de Berry* (Paris: H. Champion, 1984), 205; cited and discussed in Scheller, *Exemplum*, 79 and note 217.

44. Scheller, *Exemplum*, 79.

45. Ernst Kitzinger, "The Role of Miniature Painting in Mural Decoration," in *The Place of Book Illumination in Byzantine Art* (Princeton: Princeton

University Press, 1975), 99–143; cited and discussed in Scheller, *Exemplum*, 49–53.

46. See Georg Germann, *Einführung in die Geschichte der Architektutheorie* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1980; reprint 1993), 146–158; and see the present work, chapter four, notes 64–65.

47. Richard Krautheimer and Trude Krautheimer-Hess, *Lorenzo Ghiberti* (Princeton: Princeton University Press, 1956), 294: "To Petrarch [. . .] it mattered little whether or not a site was commemorated by a monument, or merely haunted by memories. His approach was entirely literary, almost emphatically nonvisual"; cited and discussed by Françoise Choay, *L'allégorie du patrimoine* (Paris: Seuil, 1992), 39 and note 31.

Chapter 4

1. From the description of Ireland by Giraldus Cambrensis (Gerald of Wales) in Otto Lehmann-Brockhaus, *Lateinische Schriftquellen zur Kunst in England, Wales und Schottland vom Jahre 901 bis zum Jahre 1307*, vol. 3 (Munich: Prestel Verlag, 1956), 217; cited and discussed in Robert W. Scheller, *Exemplum: Model-Book Drawings and the Practice of Artistic Transmission in the Middle Ages (ca. 900–ca. 1470)*, trans. Michael Hoyle (Amsterdam: Amsterdam University Press, 1995), 11–12.

2. Walter J. Ong, *Orality and Literacy: The Technologizing of the Word* (London: Methuen, 1982; reprint, London: Routledge, 1995); see in particular chapter 4, "Writing is a Technology," 81–83.

3. "Rinfrescare l'odore dello stile," see Eugenio Battisti, "Il concetto di imitazione nel Cinquecento da Raffaello a Michelangelo," *Commentarii* VII (1956), reprinted in his *Rinascimento e Barocco* (Turin: Einaudi, 1960), 187; see also Carpo, *Metodo e ordini della teoria architettonica dei primi moderni. Alberti, Raffaello, Serlio e Camillo*, Bibliothèque d'Humanisme et Renaissance, CCLXXI (Geneva: Droz, 1993), 51 and notes.

4. In another context, with no direct relationship to the technological factors that we are discussing here, Johan Huizinga described the iconophilia of the late Middle Ages (the fifteenth century in Franco-Flemish areas of Europe) as "a marked tendency of thought to embody itself in images." *The Waning of the Middle Ages* (originally published as *Herfosttijd der Middeleeuwen*, 1919), trans. F. Hopman (1924; reprint Harmondsworth, Middlesex: Penguin Books, 1990), 147.

5. See the chapter entitled "Moderni contro pedanti" in my *Metodo e ordini*, 30–39.

6. Thomas Elyot, *The Boke Named the Gouernour*, ed. Henry Herbert Stephen Croft, 2 vols., vol. 1 (London: Kegan, Paul, Trench, & Co., 1883), chapter VIII, 45–46. Originally published in London, 1531.

7. For "bibliospace," see my article, "The Making of the Typographical Architect," in *Paper Palaces: The Rise of the Renaissance Architectural Treatise*, ed. Vaughan Hart and Peter Hicks (New Haven: Yale University Press, 1998), 158–170.

8. If this claim seems anachronistic, we can turn to Serlio himself, who underscores and defends this principle with great lucidity and remarkable foresight. See, for example, the dedication to François I in the first edition of the *Third Book* on antiquities:

acciocché qualunque persona, che di Architettura si diletta, potesse *in ogni luogo, ch'ei si trovasse, togliendo questo mio libro in mano, veder* tutte quelle meravigliose ruine de i loro edifici: le quali se non restassero anchor sopra la terra, forse non si darebbe tanta credenza a le scritture, le quali raccontano tante maraviglie di i gran fatti loro." (Emphasis mine; Serlio, *Third Book* [1540], 3. Cited and discussed in Myra Nan Rosenfeld, "Sebastiano Serlio's Contributions to the Creation of the Modern Illustrated Architectural Manual," in *Sebastiano Serlio, sesto seminario internazionale di storia dell'architettura, Vicenza, 31 agosto–4 settembre 1987*, ed. Christof Thoenes [Milan: Electa, 1989], 108, note 3.)

9. The sociologist Melvin M. Webber coined this phrase in his famous analysis of the effects of automotive transportation technologies on patterns of urban development; see his "Order and Diversity: Community without Propinquity," in *Cities and Space: The Future Use of Urban Land*, ed. Lowdon Wingo, Jr. (Baltimore, MD: Johns Hopkins University Press, 1963), 29–54.

10. See, for example, Filarete (discussed in the present work, chapter seven, section III); Francesco di Giorgio (present work, chapter seven, section II); John Shute (present work, chapter six, section I); or the preface to the illustrated collection of antiquities published in 1552 by the cabinet maker Labacco, an associate of Antonio da Sangallo: "maggior frutto si cava da gli buoni esempi in poco tempo, che non si farebbe, leggendo i scritti in [tempo] molto maggiore," Antonio Labacco, *Libro appartenente all'architettura nel quale si figurano alcune notabili antiquità di Roma* (Rome, 1552); cited and discussed in Gabriele Morolli, *"Le belle forme degli edifici." Raffaello e il progetto del primo trattato rinascimentale sulle antichità di Roma* (Florence: Alinea, 1984), 112; see also Serlio, *Fourth Book* (1537), f. 15*v*;

reprint Venice, 1584, f. 136*v; Sebastiano Serlio on Architecture*, trans. Vaughan Hart and Peter Hicks (New Haven, CT: Yale University Press, 1996), 263: "il veder diverse inventioni fa spesso far di quelle cose che forse non si fariano a non vederle in fatti" (looking at different inventions often inspires the making of things which perhaps would never have existed had they not actually been seen); and elsewhere (see the previous note).

11. What Morolli calls in his *"Le belle forme degli edifici"* an "atlante esemplare," 106 and elsewhere; Christof Thönes, "La 'lettera' a Leone X," in *Raffaello a Roma, Il convegno del 1983*, ed. C. L. Frommel and M. Winner (Rome: Edizioni dell'Elefante, 1986), 373–381; V. Golzio, *Raffaello nei documenti, nelle testimonianze dei contemporanei e nella letteratura del suo secolo* (Vatican City: Pontificia Insigne Accadmia Artistica dei Virtuosi al Pantheon, 1936), 81.

12. Carpo, *Metodo e ordini*, 46, note 18.

13. The Renaissance theory of architectural imitation and the birth of the modern system of the five orders are the central arguments of my *Metodo e ordini*. For a synopsis of the last ten years of Serlio studies, see Myra Nan Rosenfeld, "Recent Discoveries about Sebastiano Serlio's Life and His Publications," preface to the partial reprint of *Serlio on Domestic Architecture* (Mineola, NY: Dover Paperback, 1996), 1–8; first published as *Sebastiano Serlio on Domestic Architecture: Different Dwellings From the Meanest Hovel to the Most Ornate Palace: The Sixteenth-Century Manuscript of Book VI in the Avery Library of Columbia University*, ed. Myra Nan Rosenfeld (New York: Architectural History Foundation, 1978); see also *Sebastiano Serlio on Architecture, vol. I: Books I–V*, translated and with an introduction and notes by Vaughan Hart and Peter Hicks (New Haven, CT: Yale University Press, 1996).

14. The fact that Serlio's orders (as well as many that followed) were ideally conceived as stereotypes, or as standardized visual quotations, does not imply that they were always used as such. Serlio himself, not only in his architectural practice but also in his treatises, provides evidence of the fact that exactly repeatable visual patterns can be repeated identically, or not, according to the mood or motivations of every individual user. Indeed, what matters here is not individual use, but the general status of the model—its theoretically unlimited reproducibility and visual recognizability. Together with the visual canon of his orders, Serlio also formalized a highly sophisticated theory of architectural "licenses." For an extended, although admittedly biased discussion of Serlio's theory of architectural licentiousness, see my *La maschera e il modello* (Milan: Jaca Book, 1993). In

sixteenth-century architectural theory, "licenses" are deliberate errors, infractions of rules that acquire specific meanings precisely because these rules exist and are generally known. No one can break a nonexisting rule. The dialectic between rule and license is at the core of what used to be called mannerist architecture. Not all rules in sixteenth-century architectural theory were visual (some were based on tectonic principles, for example), but the visual canon of standardized orders established in and through print, by Serlio and many who followed, is the precondition for the "poetics of license," or licentiousness, that took root almost simultaneously with, and parallel to, the diffusion of the printed standards of the orders. This dialectic between architectural convention and invention is similar to that described by twentieth-century linguistic theory, most famously by the Saussurian tenets of "langue" (code) and "parole" (the personal or creative use of it). In short, architectural "licenses" exist only insofar as they can be detected; deformation of, or derogation to, the visual canon of the orders requires that this canon be known in its standard and regular format. This, in the sixteenth century, was the printed format.

15. See my *Metodo e ordini*, 65–82, and 84, with a scheme of the "piano dell'-opera" in seven books and "Ancora su Serlio e Delminio. La teoria architettonica, il Metodo e la riforma dell'imitazione," in *Sebastiano Serlio*, 111–114.

16. See *Metodo e ordini*, 1993, Chapter VII.IX ("ordini e facilità"), 131–137, and elsewhere.

17. See Rosenfeld, "Sebastiano Serlio's Contributions to the Creation of the Modern Illustrated Architectural Manual," in *Sebastiano Serlio:* "Serlio's books play a major role in the revolutionary development of the printed illustrated scientific manual in Europe in the sixteenth century" (102); "Serlio was indeed one of the first architects to understand the potential of the printed book to reach such a mass audience" (108).

18. On Serlio's evangelism, see Antonio Foscari and Manfredo Tafuri, *L'armonia e i conflitti. La chiesa di San Francesco della Vigna nella Venezia del Cinquecento* (Torino, 1983), 39–59; Manfredo Tafuri, *Venezia e il Rinascimento* (Torino, 1985), 90–112 and "Ipotesi sulla religiosità di Sebastiano Serlio," in *Sebastiano Serlio*, 57–67; Carpo, "The Architectural Principles of Temperate Classicism: Merchant Dwellings in Sebastiano Serlio's Sixth Book," *Res, Anthropology and Aesthetics* 22 (1992): 135–151; *La maschera e il modello. Teoria architettonica ed evangelismo nell'*Extraordinario Libro *di Sebastiano Serlio* (Milan: Jaca Book, 1993), 85–105; and "La traduction française du *De re aedificatoria* (1553): Alberti, Martin, Serlio et l'échec d'un classicisme vulgaire," in *Leon Battista Alberti: Actes du Congrès*

International, Paris, 10–15 avril 1995, ed. Francesco Furlan, Pierre Laurens, Sylvain Matton (Paris: Vrin, 2000), 923–964. See also note 119 of this chapter.

19. See above, note 15.

20. Serlio did not use "mediocre" as a pejorative but rather in the sense of "average"; see *Metodo e ordini*, 63, 69, 97 and notes.

21. See Carpo, *Metodo e ordini*, chapter VI, "Il metodo di Giulio Camillo e l'insegnamento dell'architettura," 65–83, especially 69, with notes and bibliography.

22. Walter Benjamin, "L'oeuvre d'art à l'époque de sa reproduction mécanisée" (1936), republished in *Ecrits français*, ed. J.-M. Monnoyer (Paris: Gallimard, 1991). See also in the present work, chapter I, note 10.

23. Benjamin, "L'oeuvre d'art à l'époque de sa reproduction mécanisée," 141.

24. The expression is Benjamin's, although he refers only to photography and film: "Dans une mesure toujours accrue, l'oeuvre d'art reproduite devient reproduction d'une oeuvre d'art destinée à la reproductibilité," from "L'oeuvre d'art à l'époque de sa reproduction mécanisée," 146.

25. Sigmund Freud, *Das Unbehagen in der Kultur* (Vienna, 1929). Cited and discussed by Françoise Choay, "De la démolition," in *Métamorphoses parisiennes*, exh. cat., Paris, January–May 1996, ed. Bruno Fortier (Paris: Editions du Pavillon de l'Arsenal e Pierre Mardaga, 1996), 28.

26. William M. Ivins, Jr., *Prints and Visual Communication* (Harvard University Press, 1953; reprint Cambridge, MA: The MIT Press, 1992), 28, 43; Arthur M. Hind, *An Introduction to a History of Woodcut, With a Detailed Survey of Work Done in the Fifteenth Century* (London: Constable and Co., 1935), 284, 498, 669. A similar case of a woodcut partially updated by the addition of new inserts into the original block is seen in a comparison among three versions of Jacopo de' Barbari's *View of Venice* (first printed in 1500); see Jay A. Levenson, Konrad Oberhuber, and Jacquelyn L. Sheehan, *Early Italian engravings from the National Gallery of Art* (Washington: National Gallery of Art, 1973), 553–554.

27. Marshall McLuhan, *The Gutenberg Galaxy: The Making of the Typographical Man* (London: Routledge and Paul, Toronto: University of Toronto Press, 1962), 158. McLuhan's famous definition of "typographical man" was anticipated almost verbatim by Lewis Mumford, *Technics and Civilization* (London: Routledge, and New York: Harcourt, Brace and Co., 1934), 134–136.

28. Antoine Compagnon, *La seconde main, ou le travail de la citation* (Paris: Éditions de Seuil, 1979), 256, and elsewhere.

29. [Peeter Coucke], *Die Inventie der Colommen met haren Coronementen ende Maten, Wt Vitruvio ende andere diversche Auctoren optcorste vergadert*, [. . .] (1539). Only one copy is known to be extant; see Herman De La Fontaine Verwey, "Pieter Coecke van Aelst and the Publication of Serlio's Books on Architecture," *Quarendo: A Quarterly Journal from the Low Countries Devoted to Manuscripts and Printed Books* VI, no. 2 (1976): 172. A reprint is found in Rudi Rolf, *Pieter Coecke van Aelst en zijn architectuuruitgaves van 1539* (Amsterdam, 1978).

30. Coecke published the first translation of Serlio's *Fourth Book* in Antwerp in 1539: *Generale Reglen der Architecturen op de vyve Manieren van edificien, te vueten, Thuscana, Dorica, Ionica, Corinthia, ende Composita. Met den Exemplen der Antiquiteiten die int meestedeel concorderen met de leeringhe van Vitruvio*. Serlio's name does not appear on the title page but only in Coecke's preface and in the colophon. See De La Fontaine Verwey, "Pieter Coecke van Aelst," 178–182; Georges Marlier, *Pierre Coecke d'Alost. La Renaissance flamande* (Brussels, 1966); Johannes Offerhaus, "Pieter Coecke van Aelst et l'introduction des traités d'architecture dans les Pays-Bas," in *Les Traités d'architecture de la Renaissance: Actes du colloque tenu à Tours du 1er au 11 juillet 1981*, ed. Jean Guillaume (Paris: Picard, 1988), 443–452. Coecke van Aelst's typographic fonts were reprinted as an appendix to his French translation of Serlio's *Fourth Book: Reigles generales de l'Architecture sur les cinq manieres d'edifices, ascavoir, Thuscane, Doricque, Ionicque, Corinthe, & Composite, avec les exemples d'anticquitez, selon la doctrine de Vitruve* (Antwerp: Piere van Aelst, 1542; 1545, ff. 71v–72); see my fig. 4.3. Serlio is mentioned neither on the title page nor in Coecke van Aelst's dedication to Mary of Austria, regent of the Low Countries. The work is presented as an epitome of Vitruvius, not as a modern treatise, and with no reference to the author. Serlio's name appears only in the colophon: "Fin de le IIIIᵉ livre d'architect. Sebastien Serlii, translate & imprime en Anvers par Piere van Aelst." See also John Bernard Bury, "Serlio: Some Bibliographical Notes," in *Sebastiano Serlio*, 98, figs. 16–17.

31. See De La Fontaine Verwey, "Pieter Coecke van Aelst," 192. There are other examples of bilingual editions in which the Latin text is in Roman characters and the French translation in Gothic; see Henri Zerner, *L'art de la renaissance en France. L'invention du classicisme* (Paris: Flammarion, 1996), 14–17 ("Le gothique des imprimeurs").

32. See De La Fontaine Verwey, "Pieter Coecke van Aelst," 190–194.

33. Giedion, *Mechanization Takes Command*, 34–37 ("The Miraculous and the Utilitarian").

34. Charles Perrault, *Parallèle des anciens et des modernes en ce qui regarde les arts et les sciences*, vol. 1 (Paris, 1688), 159; translation from Joseph Rykwert, *On Adam's House in Paradise: The Idea of the Primitive Hut in Architectural History* (New York: Museum of Modern Art, 1972) 61. Printed illustrations supplanted visual memory just as the printed texts supplanted oral memory: "aujourd'hui [. . .], on n'apprend presque plus rien par coeur, parce qu'on a ordinairement à soy les livres qu'on lit, où l'on peut avoir recours dans le besoin, et dont l'on cite plus sûrement les passages en les copiant que sur la foy de la mémoire comme on faisoit autrefois," Perrault, *Parallèle des anciens et des modernes*, vol. I, 63. Cited and discussed in Choay, *L'Allégorie du Patrimoine*, 17.

35. The most recent synopsis of this confusing bibliography is found in Bury, "Serlio: Some Bibliographical Notes," 92–101.

36. See William Bell Dinsmoor, "The Literary Remains of Sebastiano Serlio," *The Art Bulletin* XXIV (1942): 67, notes 63–65; Carpo, *La maschera e il modello*, 96–99, notes 33–38.

37. On Philandrier, see Dora Wiebenson, "Guillaume Philandrier's Annotation to Vitruvius," in *Les traités d'architecture de la Renaissance*, 67–74; Margaret Daly Davis, "Zum Codex Coburgensis: Frühe Archäologie und Humanismus im Kreis des Marcello Cervini," in *Antikenzeichnung und Antikenstudium in Renaissance und Frühbarock: Akten des internationalen Symposions 8.–10. September 1986 im Coburg*, ed. Richard Harpath and Henning Wrede (Mainz: Ph. von Zabern, 1989), 185–199; Frédérique Lemerle-Pauwels, "Architecture et humanisme au milieu du XVIème siècle: les *Annotationes* de Guillaume Philandrier. Introduction, traduction et commentaire, livres I–V" (Ph.D. diss., Université de Tours et Centre d'Etudes supérieures de la Renaissance, 1991); thesis revised as *Les* Annotations *de Guillaume Philandrier sur le* De Architectura *de Vitruve, livres I à IV* (Paris: Picard, 2000); see also her "Genèse de la théorie des ordres: Philandrier et Serlio," *Revue de l'art* CIII (1994): 33–41; and "Philandrier et le texte de Vitruve," *Mélanges de l'Ecole française de Rome—Italie et Méditerranée* II, 106 (1994): 517–529. F. Marias and A. Bustamante have suggested that Philandrier may have been the French translator of the Castilian treatise *Medidas del Romano* (Toledo, 1526), or at least the author of the illustrated appendix on the orders in the French version: *Raison d'architecture antique, extraicte de Vitruve* [. . .] (Paris: Simon de Colines, no date; reprinted 1539, 1542, 1550, 1555, 1608). This hypothesis is contested by Lemerle-Pauwels, "Architecture et humanisme," vol. I, liii and notes.

38. Guillaume Philandrier, *In Decem Libros M. Vitruvii Pollionis de Architectura Annotationes* (Rome: apud I. Andream Dossena, 1544), hereafter referred

to as *Annotations*. The text was reprinted in Paris in 1545 by Fezadat and Kerver, and then again in Strasbourg in 1550 together with a Latin edition of the Vitruvian treatise (Frontinus's *De Aquaeductibus* and Cusanus's *Dialogus de Staticis Experimentis* also appeared in this volume). The second edition of the *Annotationes* was revised and expanded by the author in *M. Vitruvii Pollionis de Architectura Libri decem ad Caesarem Augustum, omnibus omnium editionibus longè emendatiores, collatis veteribus exemplis. Accesserunt, Gulielmi Philandri Castilioni, civis Romani annotationes castigatiores & plus tertia parte locupletiores. Adiecta est Epitome in omnes Georgij Agricolae de mensuris et ponderibus libros, eodem autore, cum Graeco pariter et Latino indice locupletissimo* (Lyons: Jean de Tournes, 1552). Two other works of Philandrier's appeared in this same volume, a short *Life of Vitruvius* and a compendium of Agricola's books on the weights and measures of the ancients (a work that de Tournes also published separately: see Alfred Cartier, *Bibliographie des éditions des de Tournes, imprimeurs lyonnais* (Lyons and Paris: Audin and Éditions des Bibliothèques Nationales, 1937–1938), no. 209). A copy of the 1552 Lyons *Vitruvius* conserved at the Bibliothèque Publique et Universitaire in Geneva includes handwritten annotations by Rousseau: this must be the copy that Rousseau gave to Mme. de Warrens.

39. Serlio's name figures only twice in Philandrier's *Annotations;* these passages are translated and discussed in Lemerle-Pauwels, "Architecture et humanisme," vol. I, 314, 475. See also Dinsmoor, "The Literary Remains of Sebastiano Serlio," 67, note 64; and Hans-Christoph Dittscheid, "Serlio, Roma e Vitruvio," in *Sebastiano Serlio, atti del convegno, Vicenza 31 agosto–4 settembre 1987*, ed. Christof Thoenes (Milan: Electa, 1989), 147, note 6.

40. Philandrier, *Annotations* (1544), 137; (1552), 154. See the preceding note.

41. Philandrier, *Annotations* (1552), 119, annotation 14 on Vitruvius III,III (see Lemerle-Pauwels, "Architecture et humanisme," 355). The comment "dicam quod imperiti non assentiantur" was added to the 1552 edition.

42. See chapter seven of this volume.

43. The title "digressio utilissima, qua Philander universam columnationis et trabeationis rationem pro vero subsequentis capitis tertij intellectu, diligentissime explicat" figures only in Philandrier's second version of the *Annotations* (Lyons, 1552, 95). The digression begins without any separate title in the first edition (Rome, 1544, 72).

44. On the orders of Philandrier, see Lemerle-Pauwels, "Architecture et humanisme," lvii–lxxiv (with bibliography); "Genèse de la théorie des ordres"; and Pier Nicola Pagliara, *Vitruvio da testo a canone*, in *La memoria dell'antico nell'arte italiana*, III, *Dalla tradizione all'archeologia*, ed. Salvatore Settis (Turin: Einaudi, 1986), 78–80.

45. Carpo, *La maschera e il modello*, 21–62.

46. "Sed multo malignius suborta paucos ante menses male feriatorum hominum haeresis, quae Vitruvii numquam lecti, aut non intellecti praecepta damnat, et ab eius lectione arcere cupit. Legant prius imperiti et audaces homines, et postea iudicent, praestet pro cuiusque libidine aedificari," Philandrier, *Annotations* (1552), 110. This passage is absent in the previous edition. See Lemerle-Pauwels, "Architecture et humanisme," 328.

47. "Sì che tutti quegli architetti che danneranno gli scritti di Vitruvio, e massimamente in quelle parti che s'intendono chiaramente, [. . .] saranno eretici nell'architettura," Serlio, *Third Book* (1540), 46; 1584, f. *69v*. See Carpo, *La maschera e il modello*, 39.

48. See Lemerle-Pauwels, "Architecture et humanisme," lxiv and following.

49. See the translation of the first five books of the *Annotations* in Lemerle-Pauwels, "Architecture et humanisme," vols. I and II, in which she points out the differences between the two editions.

50. Philandrier, *Annotations* (1552), 90, annotation 3 on Vitruvius, III,II.

51. The original reads:

Itaque, rei difficultate deterriti, qui libros Vitruvii habebant, nolebant legere, quorum se cognitionem assequi posse diffidebant. Ex illo fluere, et retro sublapsa referri architectonice, ut, qui aedificarunt, novis ineptiarum deliramentis appareat delectatos, nisi forte hoc ineptire non est, posthabitis probatissimis laudatissimorum operum rationibus, inepta atque otiosa ornamenta, ne dicam a rerum natura abhorrentia, frustra et ambitiose comminisci, et his offuciis ac praestigiis a probis abducere ac fucum facere. Neque enim audiendi sunt, qui pro cuiusque libidine variam et mutabilem esse aedificiorum formam dicunt, [iactari enim, et alio atque alio deferri necessario esset, nisi, quo tendendum, cognitum nobis prius ac perspectum fuerit]. Sed commune hoc (inquit ille) ignorantiae vitium est, quae nescias, nequicquam esse profiteri. (Philandrier, *Annotations* [1552], A3, dedication to François I)

The phrase in square brackets was absent from the edition of 1544. See Lemerle-Pauwels, "Architecture et humanisme," 8–9. It is not clear whether Philandrier is referring to the degeneration of ancient architecture after Vitruvius or to the folly of his contemporaries, or to both.

52. The original reads:

Quin et qui multis retro saeculis extruxerunt, apparet novis ineptiarum deliramentis, potius quam probatissimis laudatissimorum operum rationibus delectatos.

Sed quid hoc est, si non est insanire? Si non est posteris invidere? Illud quoque ad-monebo [. . .]. Istud vero quam recte, viderint, quibus inventis frugibus placet glandis vesci, atque adeo qui, si quid est in antiquorum monumentis absurdum, eo maxime solent oblectari. (Philandrier, *Annotations* [1552], 90, annotation 3 on Vit-ruvius III,II; see Lemerle-Pauwels, "Architecture et humanisme," 275)

53. Philandrier, *Annotations* (1552), 119, annotation 14 on Vitruvius III,III; see Lemerle-Pauwels, "Architecture et humanisme," 355.

54. Philandrier, *Annotations* (1552), 98 ("Digression"). This passage was added to the 1552 edition. The same argument recurs elsewhere, particu-larly in the annotations to Vitruvius IV,II (superimposition of dentils and mutules): see Lemerle-Pauwels, "Architecture et humanisme," 421.

55. See Carpo, *La maschera e il modello*, 34–37 and notes.

56. Serlio, *Third Book* (1540), 46; (1584), f. 69*v*. See Carpo, *La maschera e il modello*, 41.

57. Philandrier, *Annotations* (1544), 93; (1552), 109 (conclusion of the "Di-gression," with some differences between the two editions). See Lemerle-Pauwels, "Architecture et humanisme," 328.

58. See John Onians, *Bearers of Meaning: The Classical Orders in Antiquity, The Middle Ages, and The Renaissance* (Princeton: Princeton University Press, 1988), 266–267; Carpo, "L'idée de superflu dans le traité d'architecture de Sebastiano Serlio," *Revue de Synthèse* CXIII (January–June 1992): 135–161.

59. In his dedication to François I, Philandrier explains that he was urged to publish his Vitruvian studies by eminent members of the college of cardi-nals and by the pope (Paul III) himself. Elsewhere he gives a summary of a presentation that he made to the pope on the theme of sacred art in ec-clesiastical buildings. Philandrier, echoing topoi from the ninth book of Alberti's *De re aedificatoria*, defends a sober use of rare and precious sacred images; see Philandrier in Vitruvius, *De Architectura* (Lyons, 1552), anno-tation 1 on Vitruvius, IV,8 (absent from the *editio princeps* of 1544). See Lemerle-Pauwels, "Architecture et humanisme," 513–518.

60. The original reads:

Egli [. . .] s'assiderò, come un barbachieppo; e datosi con una delle mani alla barba, quella molte volte allisciò, e con l'altra faceva certi chioppi, come fanno gli Spag-nuoli ballando, o quelli, che giocano alla moresca: et havendo rivolti gli occhi in alto, gli tenne per un pezzo fitti nelle volte della loggia; et all'ultimo disse, che haveva mutata opinione: percioché intendeva di mandarla a Lione a stampare.

This passage was also translated and discussed by Dora Wiebenson, *Architectural Theory from Alberti to Ledoux*, (Chicago: The University of Chicago Press, 1982), catalog entry I–17.

61. First letter: June 24, 1549, Tommaso Spica to Dionigi Atanagi; see *Delle lettere facete*, vol. I (Venice: A. Salicato, 1601), 178. Atanagi's response, dated from Rome the following July 23, is addressed to Spica care of Georges d'Armagnac in Gubbio. Atanagi asks Spica to give his regards to Philandrier, who must therefore still have been in Italy in 1549, together with d'Armagnac. The two letters are cited and discussed by Vladimir Juren, "Un nouveau fragment de la correspondance de Primatice," in *Il se rendit en Italie: Études offertes à André Chastel* (Rome: Edizioni dell'Elefante, 1987), 231–233. See also an unpublished letter written to Primaticcio by Ludovico Columbello, dated from Rome on April 23, 1541. Primaticcio must have had some quarrel with Philandrier and to justify this, Columbello invokes Philandrier's "solita bizzarria, di cui come sapete grandissimi sono gli privilegi." (Columbello's letter is known only through a sixteenth-century copy made by Adrien de Thou, today in the Bibliothèque Nationale, Paris, Coll. Dupuy, vol. 736, ff. 4*v*–5*r*. The passage is cited and discussed in Juren, "Un nouveau fragment," 231–233.) Columbello was Georges d'Armagnac's doctor in Rome and the author of the preface to the annotations on Quintilian that Philandrier had published in Lyons in 1535. Dionigi Atanagi, a personal friend of Claudio Tolomei, is the author of a collection of letters published in Rome in 1554. In these, Paolo Simoncelli and others have recently recognized a nicodemite strategy. Already in 1555, Atanagi was criticized on theological grounds by Pier Paolo Vergerio, who wanted him to take a more courageous stance. Vergerio denounced Atanagi's practice of concealing heterodoxic religious views in an anthology that appeared harmless, and in which only certain readers would have known how to find a hidden message. See Dionigi Atanagi, *Lettere volgari di XIII huomini illustri* (Rome, 1554); [P. P. Vergerio], *Giudicio sopra le lettere di tredeci huomini illustri pubblicate da M. Dionigi Atanagi et stampate in Venetia nell'anno 1554* (no location, 1555); cited and discussed in Paolo Simoncelli, *Evangelismo italiano del Cinquecento* (Rome: Istituto storico per l'età moderna e contemporanea, 1979), 293–300 (with notes and bibliography).

62. See M. Jaffé, "The Picture of the Secretary of Titian," *Burlington Magazine* CVIII (March 1966): 114–126; Ch. Samaran, "Georges d'Armagnac et Guillaume Philandrier peints par Titien: deux portraits identifiés," *Fondation Eugène Piot: Monuments et Mémoires, publiés par l'Académie des In-*

scriptions et Belles Lettres LV (1967): 115–129; Lemerle-Pauwels, "Architecture et humanisme," vol. 1, part 1, x, xx and notes.

63. Philibert Papillon, *Bibliothèque des auteurs de Bourgogne*, vol. II (Dijon: Philippe Marteret, 1742), 148–151. For Philandrier's bibliography see Lemerle-Pauwels, "Architecture et humanisme," vol. I, part 1, viii–xv. New information on Philandrier's life is now found in the book based on her thesis; see Lemerle, *Les* Annotations *de Guillaume Philandrier.* It now seems certain that Philandrier made a second and longer stay in Rome in the late forties.

64. See Henri Zerner, "Le frontispice de Rodez, essai d'interprétation," in *Il se rendit en Italie*, 301–311; *L'art de la renaissance en France*, 17–22 ("Le frontispice de Rodez ou l'esthétique du disparate").

65. Serlio, *Fourth Book* (1537), ff. LIII*v*–LIIII; (1584), ff. 175–175*v*.

66. See above, chapter three, section II, note 46.

67. "Ut perperam et importune faciant quidam, qui dimensas aliquot coronices, et bases, aut capitula, Panthei, theatrorum, amphitheatrorum, porticuum, fornicum, et thermarum, in pusilla aedificia, aut non eiusdem rationis opera transferunt," Philandrier, *Annotations* (1552), 110, epilogue to the "Digression"; this passage was added to the 1552 edition. See Lemerle-Pauwels, "Architecture et humanisme," 328.

68. "Nos Augusti Sanctae quae consacrat / loci speciem miremur"; "Facessant Aegyptiorum insanae piramidum moles / Valeant orbis miracula." See Lemerle, *Les* Annotations *de Guillaume Philandrier,* 4,9 note 388 (with further bibliography).

69. Pliny, *Natural History*, XXXVI,XV,75–81 (the pyramids "regum pecuniae otiosa ac stulta ostenatio"); Alberti, *De Re Aedificatoria*, VIII,3,4; *L'architettura [De re aedificatoria]*, trans. Giovanni Orlandi, 2 vols. (Milan: Il Polifilo, 1966), 682; Serlio, *Third Book* (1540), appendix, 155–156 ("Trattato di alcune cose meravigliose dell'Egitto"); Philibert de l'Orme, *Le premier tome de l'architecture* (Paris, 1567), V, pref.; (1648), 129. See also Carpo, *La maschera e il modello*, 50–62; "L'idée de superflu," 135–161; Germann, *Einführung in die Geschichte der Architekturtheorie*, 124. Another Renaissance source for the pyramid topos seems to be the evangelic and heretical Pietro Martire Vermigli (1500–1562), cited by Coecke van Aelst in his 1539 manual on the orders (see above, note 29); see De la Fontaine Verwey, "Pieter Coecke van Aelst," 178.

70. Carpo, *La maschera e il modello*, chapter V, "L'elogio della follia architettonica", 107–130.

71. Carpo, *La maschera e il modello*, 96–99, notes 33–38 (and bibliography).

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72. On Sangallo and Labacco's model, see in particular the following contributions to the catalog *The Renaissance from Brunelleschi to Michelangelo: The Representation of Architecture*, ed. Henry A. Millon and Vittorio Magnago Lampugnani (New York: Rizzoli, 1994): Christoph Luitpold Frommel, "Saint Peter's: The Early History," 399–423; Sandro Benedetti, "The Model of Saint Peter's," 631–633; Christof Thoenes, "Saint Peter's 1534–46: Projects by Antonio da Sangallo the Younger for Pope Paul III," 634–637. The model, at the unusual scale of 1:30, was commissioned from Sangallo by the Congregazione di San Pietro in June 1539; see Ennio Francia, *1506–1606, Storia della costruzione del nuovo San Pietro* (Rome, 1977), 49. After Sangallo's death (in September 1546), the Congregazione insisted that the model be completed; see Howard Saalman, "Michelangelo at St. Peter's: The Arberino Correspondence," *The Art Bulletin* LX (1987): 489. Payments to Labacco are recorded from March 1539 to November 1546. The scale of the model, which has recently been recalculated, is actually somewhere between 1:28 and 1:29; Benedetti, "The Model of Saint Peter's," 632.

73. Thoenes, "Saint Peter's 1534–46," 635:

> The *summum opus* of Sangallo's last years was in practice not the building but the model. It was the only real means by which he could give form to his personal legacy for posterity: the quintessence of his knowledge and his skills, of his studies of Vitruvius and the monuments of classical antiquity, his lifelong experience as a master builder. To implement his exhaustive scheme there would be no further need for architects, but only for workmen—an idea obviously far from reality. [. . .] [I]n the carpenter's workshop also the procedures of construction were simulated. Thus the wooden model began to take the place of the building, become its fetish.

74. For the payment records in the archive of the Reverendissima Fabbrica di San Pietro (published by K. Frey, 1909–1913) see Benedetti, "The Model of Saint Peter's," 632–633 and H. A. Millon, "Models in Renaissance Architecture," also in *The Renaissance from Brunelleschi to Michelangelo*, 35 (and bibliography).

75. The raising of the springing line of the central nave arch ("stilting"), already in itself an optical correction, was suppressed in the model to take into account the vantage point of an observer within the model, which is proportionally higher than it would be in the actual building; see Henry A. Millon and C. Hugh Smith, "Michelangelo and St. Peter's: Observa-

tions on the Interior of the Apses, a Model of the Apse Vault, and Related Drawings," *Römisches Jahrbuch für Kunstgeschichte* XVI (1976): 162–168.

76. Thoenes, "St. Peter's 1534–46," 636: "Detached from the history of the building itself, the model for St. Peter's belongs in a kind of no-man's land between two epochs. Too late to qualify as a design for the future, it ended up as something utopian, looking backward to the past." On Vasari's pro-Michelangelo stance to the detriment of the "Sangallo sect," see Thoenes, 635 and Benedetti, "The Model of Saint Peter's," 631 (and bibliography).

77. James S. Ackerman, *The Architecture of Michelangelo* (London, Zwemmer, 1961), 81:

In this sense, Sangallo's palace again recalls the modern structures whose neutral, two-dimensional curtain-walls are articulated by modular relief elements which determine the scale and which may be repeated at will to the desired height or width. This parallel suggests further that Sangallo's method may be explained partly by the huge scale of mid-sixteenth-century Roman programmes, in which subtleties of design would be lost on the observer. It represented, moreover, a step towards mass production: Sangallo found it unnecessary to draw the Farnese façade as a whole: he had only to sketch the central openings and four different window frames, which the carvers then executed in quantity.

78. With some exceptions: Philibert de l'Orme complains of the difficulty of finding in France "good marble" or other stone of a suitable quality for creating the shafts of monolithic columns. It was inevitable, he concluded, that the French must resort to layering blocks of cut stone. To compensate, Philibert came up with decorative motifs "to hide the joints" between the blocks; these "colomnes Françoises" could, according to Philibert, be adapted to the various orders, "by always respecting their correct measurements": Philibert de l'Orme, *Le premier tome de l'architecture* (1567), VII,XIII; (1648), 218*v*–221. In many cases, the manuals on the orders were addressed not only to architects working in different regions but to other classes of artisan as well, which explains the absence of references to the scale of the projects and to actual construction materials. See for example the title of Hans Blum's manual: *Von den fünff Seulen. Gründlicher Bericht, und deren eigenetlich contrafeyung, nach Symmetrischer aussteilung der Architectur. [. . .] Allen kunstrychen Bawherrn, Werkmeisteren, Steinmetzen, Malern, Bildhouweren, Goldschmiden, Schreyneren, auch allen die sich des zirckels und rychtschyts gebrauchend, zu grossem Nutz und Vorteil diesntlich* (Zurich: Froschauer, 1555); first edition in Latin *Quinque colum-*

narum exacta descriptio atque delineatio, cum symmetrica earum distributione, conscripta per Ioannem Blum et nunc primum publicata. Utilis est hic liber pictoribus, sculptoribus, fabris aerarijs atque lignarijs, lapadicis, statuarijs, et universi qui circino, gnomone libella, atque alioqui certa mensura opera sua examinant (Zurich: Christoph Froschauer, 1550).

79. See Roland Bechmann, *Villard de Honnecourt: La pensée technique au XIIIe siècle et sa communication* (Paris: Picard, 1991), 43–47 (and bibliography); D. Kimpel, "Le développement de la taille en série dans l'architecture médiévale et son rôle dans l'histoire économique," *Bulletin Monumental* 135 (1977): 155–198.

80. There were, during the Renaissance, several known instances of the wholesale prefabrication of architectural components in places far from the building site: the marble columns on the Strand façade of Somerset House (1547–52, one of the first classical buildings in London) were purchased ready-made in the Flanders, then shipped and erected in London; see Maurice Howard, *The Early Tudor Country House: Architecture and Politics, 1490–1550* (London: G. Philip, 1987), 194; David Thomson, *Renaissance Architecture* (Manchester and New York, Manchester University Press, 1993), 217, note 67. Some years later, all of the sculpted stonework for the portico and interior façade of the London Royal Exchange (1566–1569) was executed in Antwerp by a local architect, on a commission from the English businessman Sir Thomas Gresham: "clearly Gresham could not get what he wanted in London, and his strategy was as radical as his solution was unique in the history of Renaissance architecture," Thomson, 154. The colonnades of the portico and loggia of the royal hall on the interior courtyard of Frederiksborg castle (Zealand, Denmark) were made in Amsterdam around 1620 (on a design of Hendrick de Keyser). The parts were then brought to Denmark and assembled there by Dutch artisans; Poul Eller, *Frederiksborg Museum* (Frederiksborg: Museum of National History at Frederiksborg Castle, 1978), 12 (with bibliography); S. Heiberg, "The Royal Setting: Castle Architecture," in *Christian IV and Europe*, exh. cat. (Copenhagen: Foundation for Christian IV, 1988), 467–468. The mass production of standardized classical decorative motifs in terra cotta, such as the bases and capitals of columns, began to spread in England and northern Germany toward the middle of the sixteenth century; Maurice Howard, paper presented at the conference *La décoration dans l'architecture de la Renaissance*, Tours, June 1994, forthcoming in the proceedings (Paris, Picard).

81. In Sangallo's project there were too many "dark hiding-places above and below . . . perfect lairs for delinquency, for forging money, raping nuns

and other such roguery" (Michelangelo in a letter to Bartolomeo Fer-ratino); quoted by Thoenes, "St. Peter's 1534–46," 635; Benedetti, "The Model of Saint Peter's," 631; Millon, "Models in Renaissance Architecture," 47 (and bibliography).

82. Although in the south the zenith of the implementation of the system of the orders took the form, and not by accident, of a wooden model—the visualization of an abandoned project—in general, the media used for transmitting architectural knowledge *should not be confused* with the means of communication between architects and building site. Thanks to print-ing, building plans and projects could be published and disseminated to a broad and undifferentiated public. Working plans destined for the con-struction site were never printed—at least not during the Renaissance and not mechanically. The typographic streamlining of identical and repeat-able components presupposed nonetheless that this visual identity, de-fined at the theoretical level, could be transmitted faithfully from the architect to his work crew—which implies the use of project designs or three-dimensional models.

The modern idea of a project conceived in its entirety prior to con-struction—visualized in the form of a drawing or model, and then real-ized without any deviations—is not a Renaissance invention. But with Alberti the principle behind this practice was first enunciated and for-malized. One of the first-known cases in which the drawings of the plan, elevation, and section were made as a set, all in the same scale, is Bra-mante's project design for the cupola of Saint Peter's published by Serlio (*Third Book*, 1540), probably copied after the original drawings. A similar drawing (plan, section, and elevation of a military bastion) had already been published in 1527 in Albrecht Dürer's treatise on fortifications.

Before the typographic revolution, as we have seen, architectural forms were often defined through theoretical discourse (normative or ec-phrastic) and not through images. This visual indeterminacy could be, but was not necessarily, transmitted to the building site. True project draw-ings, partial or for entire buildings, did exist and are documented from the thirteenth century on; these might be plans, elevations, sections, details (often to scale); later, three-dimensional models were common as well. All this despite the guild system, lodge secrets, and the silence of initiates about their training.

Inversely, master builders might have passed on to the building site that same indeterminacy inherent to the theory they made use of. Certain forms whose visual appearance the architect had left open during the design process would then have been decided later, on site, either by the

architect or by someone else with or without the architect's supervision. In these cases, architects are likely to have made use of discourse to transmit to the workers data that were largely nonvisual. But even at this stage architects may still have had recourse to drawings: a schematic drawing can define norms (geometric and so on) without representing architectural forms. Even a three-dimensional model can be elusive—selective or incomplete, illustrating only a few details of the architectural object. If we can believe Manetti's tale, it seems that even Brunelleschi carried out drawings and models that were deliberately incomplete so that he wouldn't give away his plans in advance.

Within the building site itself, it has always been necessary to produce a certain number of identical elements (such as decorative motifs or moldings), which were usually taken from standardized templates cut or incised into paper, vellum, wood, or metal (models or *modani*). During the Renaissance, control of this process, logically enough, moved from the building site to the architect's atelier. We know, in fact, of templates by the hand of Michelangelo, Sangallo, and others. Whether these were stereotyped templates, copied from the pages of printed treatises, or an architect's original designs, they were full-scale prototypes transmitted from author to builder. These templates could be reproduced in turn, with more or less precision, by tracing, following the edges with a stylus, perforating the material, pouncing, and so on. A limited number of copies of various graphic documents, maybe even of rather complex project drawings, could have been produced by similar means. However, these channels of technical communication (point to point, between an architect and a construction site) are unrelated to, and independent from, the process of accumulation and transmission in space and time of architectural knowledge and theories. The two processes belong to two different universes.

References (in order of citation): Alberti, *De re aedificatoria*, on the notion of *lineamenta* (occurrences listed under "lineamenta" in Hans-Karl Lücke, *Alberti Index* [Munich: Prestel, 1975–1979]; see in particular *De re aedificatoria*, II,I,2–4; *L'architettura*, 96–98); Serlio on Bramante's project, *Third Book* (1540), 39 and following; (1584), 66–66*v*. See also Christoph Luitpold Frommel, "Reflections on the Early Architectural Drawings," in *The Renaissance from Brunelleschi to Michelangelo: The Representation of Architecture*, 114 and 613, entry 303 (and bibliography); Albrecht Dürer, *Etliche Unterricht zu Befestigung der Stett, Schloss, und Flecken* (Nuremberg, 1527), f. CIII*v*; image reproduced and discussed in Rosenfeld, "Sebastiano Serlio's Contributions," 103–105. On medieval architectural drawings see Frommel, "Reflections on the Early Architectural Drawings," 101

(and bibliography); Millon, "Models in Renaissance Architecture," 19; *Les bâtisseurs de cathédrales gothiques*, exh. cat., Strasbourg, 3 September–26 November 1989, ed. Roland Recht (Strasbourg: Editions des Musées de la Ville de Strasbourg, 1989), 384–420; and in general *Il disegno di architettura, atti del Convegno, Milano, 15–18 febbraio 1988*, ed. Paolo Carpeggiani and Luciano Patetta (Milan: Guerini, 1989); Wolfgang Lotz, "Das Raumbild in der italienischen Architekturzeichnung der Renaissance," *Mitteilungen des Kunsthistorischen Institutes in Florenz* 7 (1956): 193–226 (English translation in Wolfgang Lotz, *Studies in Renaissance Architecture*, ed. James S. Ackerman et al. [Cambridge, MA: The MIT Press, 1977], 1–65).

On the rough drawings and incommunicative models of Brunelleschi, see *Vita di Filippo di Ser Brunellesco* (second half of the Quattrocento, attributed to Antonio Manetti); critical edition in A. Manetti, *Vita di Filippo Brunelleschi preceduta da La novella del Grasso*, ed. D. De Robertis (Milano: Il Polifilo, 1976); the edition cited here is Antonio Manetti, *Vita di Filippo di Ser Brunelleschi*, ed. Carlachiara Perrone (Rome: Salerno Editrice, 1992), 119, 123. On the templates, or *modani*, and their reproduction, see Tracy E. Cooper, "I *Modani:* Template Drawings," in *The Renaissance from Brunelleschi to Michelangelo*, 499 and entry 117 (with bibliography). On the late-medieval reproduction of images by pouncing, pressure, or tracing on *carta lucida* (transparent vellum or paper), see Scheller, *Exemplum*, 72–76. On some known cases of technical project drawings in print (the early modern equivalent of "blueprints"), see also Carpo, "How Do You Imitate," footnote 23 (with further bibliography).

83. On the emigration of Serlio to France and his patrons in 1540–1542, see Dinsmoor, "The Literary Remains of Sebastiano Serlio," notes 63 and 65; Carpo, *La maschera e il modello*, 97–98 (and bibliography).

84. *Il primo libro d'Architettura, di Sebastiano Serlio, bolognese. Le premier livre [. . .] mis en langue Françoyse, par Ieahn Martin, Secretaire de Monseigneur le Reverendissime Cardinal de Lenoncourt* (from folio 25: *Il secondo libro di perspettia [. . .] Le Second Livre de Perspective [. . .] mis en langue francoise par Ieahn Martin [. . .]*) (Paris: Iehan Barbé, [August] 1545).

85. *Quinto libro d'architettura di Sabastiano Serlio bolognese, Nel quale se tratta di diverse forme di Tempij Sacri secondo il costume Christiano, e al modo antico. A la Serenessima Regina di Navarra. Traduict en Francois par Ian Martin, secretaire de Monseigneur le Reverendissime Cardinal de Lenoncourt* (Paris: Vascosan, 1547).

86. On Jean Martin, see: Marie-Madeleine Fontaine, "Jean Martin, traducteur," in *Prose et prosateurs de la Renaissance: Mélanges offerts à M. le*

Professeur Robert Aulotte (Paris: Fedes, 1988), 109–122; Pierre Marcel, *Jean Martin* (Paris: Garnier Frères [undated but 1898]; revised edition F. Alcon, 1927); Pierre Jodogne, "La diffusion française des écrits de Leon Battista Alberti," in *Mélanges à la mémoire de Franco Simone*, vol. I, *Moyen Age et Renaissance* (Geneva and Paris: Slatkine and Champion, 1980), 181–197; Michèle A. Lorgnet, *Ian Martin translateur d'emprise: Réflexions sur les constructeurs de textes à la Renaissance* (Bologna: CLUEB, 1994), especially 57–91 (with bibliography); Carpo, "La traduction française du *De re aedificatoria*."

87. The two versions, French and Italian, of the *Fifth Book* of 1547 have different endings. Serlio's Italian text promised the imminent publication of the series of books that would complete the treatise. This passage is absent from the French version: a "breach of contract" between the author and his translator that has already been noted; see Lorgnet, *Ian Martin translateur d'emprise*, 110.

88. *Hypnerotomachie, ou Discours du Songe de Poliphile, Deduisant comme l'amour le combat a l'occasion de Polia, soubz la fiction de quoy l'aucteur, monstrant que toutes choses terrestres ne sont que vanité, traicte de plusieurs matieres profitables, et dignes de memoire. Nouvellement traduict de langage Italien en Francois* (Paris: Kerver, 1546 [license granted March 8, 1543]). The translator's name is not indicated; the translation was attributed to Martin by Denis Sauvage, in 1553, and by others as well; see Carpo, "La traduction française du *De re aedificatoria*," note 74.

89. A plan for the celebration of Henri II's 1549 entrance into Paris figures in the *Registre des délibérations du Bureau de la ville de Paris*; another, anonymous and with illustrations, was printed by Roffet: *C'est l'ordre qui a este tenu a la nouvelle et ioyeuse entrée [. . .] le seizieme iour de Juin 1549* (Paris: undated [but 1549, license granted in March 1548]); see Fontaine, "Jean Martin, traducteur," 117–118, notes 1 and 2 (with sources and bibliography); I. D. McFarlane, *The Entry of Henri II into Paris* (Binghamton, NY: Center for Medieval & Early Renaissance Studies, 1982).

90. See Vitruvius, *Architecture ou Art de bien bastir, de Marc Vitruve Pollion Autheur romain antique: mis de latin en Françoys, par Ian Martin Secretaire de Monseigneur le Cardinal de Lenoncourt. Pour le roy treschrestien Henry II* (Paris: Jacques Gazeau, 1547) ["Pour la Veuve et Héritiers de Ian Barbé"].

91. On the two editions of 1547, the Vitruvius of Barbé-Gazeau and the *Fifth Book* of Vascosan (but printed by Conrad Badius), see Carpo, "La traduction française du *De re aedificatoria*," note 73, 136.

92. "la vraye intention de Vitruve," "Ian Gouion studieux d'architecture aux lecteurs," appendix to Vitruvius, *Architecture ou Art de bien bastir*, Diij.

93. The orders illustrated by Goujon on the fold-out table—usually between pages 34 and 36 in the edition of 1547 (see fig. 4.9 here)—follow the morphology of Philandrier's orders (at least as far as one can tell, given the poor quality of some of the woodcuts in the Roman printing of 1544). But Philandrier had also modified the proportional system of the five Serlian orders to obtain more slender columns (see this chapter, note 44). Goujon returned to the original proportions of Serlio (a regular progression of the modular height of the columns across the five orders: 6, 7, 8, 9, and 10 modules, from the Tuscan to Composite, *including bases and capitals*). Goujon's images illustrate these proportions exactly, while Serlio's famous table in the *Fourth Book* of 1537 (see fig. 4.2) is imprecise: none of the columns respects the proportions spelled out in the text. The Ionic and Composite columns, in particular, are too short. (The illustrations of the orders in the 1544 and 1552 editions of Philandrier's "Digression," likewise, do not correspond to the proportions given in the text; see figs. 4.4 and 5.2.)

94. Martin, "Advertissement aux lecteurs," and dedication "Au Roy" [Henri II], in Vitruvius, *Architecture ou Art de bien bastir*, f. Aii.

95. In his commentary, appended to the text, Jean Goujon cites "un messire Sebastien Serlio, lequel a assez diligemment escrit et figuré beaucoup de choses selon la règle de Vitruve," but adds: "toutefois j'en connais plusieurs autres qui sont capables de ce faire." According to Goujon, one of his illustrations of the Doric capital was "communiquée" to Serlio for critique: "Ian Gouion studieux d'architecture aux lecteurs," in Vitruvius, *Architecture ou Art de bien bastir*, Diiij. Apparently Martin did not have an easy time of it, negotiating between two architects who did not get along. Goujon's two references to Serlio are discussed by Pierre du Colombier, "Jean Goujon et le Vitruve de 1547," *Gazette des Beaux Arts* 73 (1931): 172, 176. In both cases the meaning has been altered and the citations are incomplete.

96. Martin's obituary and a first bibliography of his works appear in the dedication to Henri II by Denis Sauvage in *L'architecture et Art de Bien Bastir du Seigneur Leon Baptiste Albert, Gentilhomme Florentin, divisée en dix livres, traduicts de Latin en François, par deffunct Ian Martin* [. . .] (Paris: Kerver, 1553).

97. Martin in the appendix to the "Déclaration des noms propres et mots difficiles contenus en Vitruve," in Vitruvius, *Architecture ou Art de bien bastir*, no page number.

98. Martin, "Advertissment aux lecteurs," in Vitruvius, *Architecture ou Art de bien bastir*, Aii:

a souventes fois convenu que ie me soye faict la voye par le moyen de la raison, ioincte a l'usage du compas, et pratique de purtraicture, dont iay presenté les choses aux ouvriers teles que ie les concevoye en fantasie afin den avoir leur iugement avec la proprieté des termes de leur ars correspondans aux antiques, en quoy du premier coup ny sans grans fraiz ils ne mont satisfaict, mais si ie neusse use de tele industrie ie perdoie et mon temps et ma peine, raison dequoy pour ne me monstrer ingrat en leur endroict, ie leur ay faict une declaration des noms propres et termes difficiles contenuz en cest Autheur.

See Carpo, "La traduction française du *De re aedificatoria*," notes 94 and 97.

99. Vitruvius, *Architecture ou Art de bien bastir*, books III and IV. In his description of the "athénienne" (Attic) base, Martin mentions: "nasselle [. . .], que les grecs nomment scotia ou trochilos," 36. See M. Cagnon and S. Smith, "Le vocabulaire de l'architecture en France de 1500 à 1550," *Cahiers de Lexicologie* XVIII (1971): 89–108 and XIX (1971): 94–108, especially part 1, 95–97: "registre des termes architecturaux anciens encore employés de 1500 à 1550"; E. Huguet, *Dictionnaire de la langue française du seizième siècle* (Paris: Champion, Didier, 1925–1967); Carpo, "La traduction française du *De re aedificatoria*," notes 96 and following.

100. Philibert de l'Orme, *Le premier tome de l'architecture* (1567); 1648, 142*v:*

Naucelle [id est "nasselle", meaning "scotia"] est un nom duquel les ouvriers usoyent par cy devant aux edifices modernes, qu'ils disoyent estre faicts à la mode Françoise. [. . .] Mais telle façon barbare est abolie entre les ouvriers, pour avoir trouvé meilleure celle que ie leur ay monstré et apporté en France il y a plus de trente ans, sans en prendre aucune gloire ny iactance.

In this instance, Philibert chose not to use the Vitruvian *scotia* to replace the "barbarous" term of workshop jargon; instead, he used paraphrases: "concavité qui est entre les deux thores [. . .] appellez des ouvriers à Naucelle"; "concavité & Naucelle." See Carpo, "La traduction française du *De re aedificatoria*," note 98.

101. Philibert de l'Orme, *Le premier tome de l'architecture* (1648), 144*v*, and elsewhere: "ainsi le vulgaire appelle. . . ."

102. Philibert's own statements reveal the great pride he took in his role as a pioneer of French classical architecture; his second treatise, *Le premier tome de l'architecture* (Paris: F. Morel, 1567), did indeed play a major role in the diffusion and establishment in France of the alien forms and imported technical lexicon of the Italianate orders. However, in an approach paral-

leling his endeavors as a classicist, Philibert also aimed at hybridizing the newfangled style imported from the south with autochthonous French building traditions. For example, as mentioned above, he suggested new "French" variants of the five orders, variants that he advocated because of the difference between French and Italian building materials. Most famously, he devoted two books of his second treatise on architecture to a somewhat quaint, updated, and rationalized version of traditional masonic stereotomy.

103. For the anecdote of maître Pihourt "et ses hétéroclites" (Noël du Fail, *Contes et discours d'Eutrapel*, 1585), see H. Clouzot, "Maître Pihourt et ses hétéroclites," *Revue du Seizième siècle* V (1918): 182–186; J. Plattard, "A propos de Maître Pihourt et de ses hétéroclites," *Revue du Seizième siècle* VI (1919): 287–289; Carpo, "La traduction française du *De re aedificatoria*," note 99.

104. *L'architecture et art de bien bastir du Seigneur Leon Baptiste Albert* [. . .].

105. In 1553 there existed two published Italian editions of the *De re aedificatoria: I dieci libri de l'architettura* [. . .] *novamente de la latina ne la volgar lingua con molta diligenza tradotti* [by Pietro Lauro] (Venice: Vaugris [Valgrisi], 1546); *L'Architettura di Leonbatista Alberti tradotta in lingua Fiorentina da Cosimo Bartoli* [. . .] *con la aggiunta de Disegni* (Florence: Torrentino, 1550). And there were two Latin editions apart from the the Florentine *princeps* of 1485: Paris, 1512; Strasbourg, 1541. See Carpo, "La traduction française du *De re aedificatoria*," notes 9–13.

106. *La Theologie Naturelle de Dom Raymon Sebon* [. . .] *mise de Latin en François, suyvant le commandement de* [. . .] *Madame Leonore, Royne douarière* (Paris: Vascosan, 1551), with a dedication by Martin to Lenoncourt. This was a translation of an abridged, dialogic version of the original text, and it had been commissioned of Martin by Eleanor of Austria in 1547.

107. Parts of the seventh book of the *De re aedificatoria* (VII, XIII; *L'architettura*, 629) were censored in 1581 by the *Index Expurgatorius* of the Portuguese Inquisition and then by the Spanish Index of 1584. On both Indexes, the passages in question are cited from the second edition of Cosimo Bartoli's Italian version of Alberti's treatise (Venice: Francesco de' Franceschi, 1565); see Carpo, "La traduction française du *De re aedificatoria*," note 153 (and bibliography). As has been recently pointed out, in several extant copies of the first Spanish translation of the *De re aedificatoria* (Madrid, 1582), several passages on ecclesiastical topics have indeed been stricken out in ink; see Alberti, *On The Art of Building in Ten Books*, trans. by Joseph Rykwert, Neil Leach, and Robert Tavernor (Cambridge, MA: The MIT Press, 1988), 396, note 144.

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108. On the rue Saint-Jacques coterie see Eugénie Droz, "Notes sur Théodore de Bèze," *Bibliothèque d'Humanisme et Renaissance* XXIV (1962): 392–412 and 589–610; Charles du Bus, "Michel de Vascosan, imprimeur à Paris, 1532–77," in *Positions des thèses soutenues par les élèves de la promotion de 1906 de l'École de Chartes* (Toulouse, 1906), 75–80; George Lepreux, *Gallia Typographica ou répertoire biographique et chronologique de tous les imprimeurs de France*, série parisienne, Paris et Ile-de-France, vol. I (Paris, 1911), 514–25. A piece of old gossip, that the meetings in the rue Saint-Jacques were actually a front for a homosexual club, was recently reiterated during a conference at the Sorbonne on Jean Martin, March 5, 1998. On the origin of this legend, see Natalie Zemon Davis, "Peletier and Beza Part Company," *Studies in the Renaissance* XI (1964): 204 and note 64.

109. Droz, "Notes sur Théodore de Bèze," 603.

110. Droz, "Notes sur Théodore de Bèze," 603.

111. Droz, "Notes sur Théodore de Bèze," 610.

112. The plan of the Temple du Paradis, constructed in Lyons by the Reformed Church around 1564 (funded, in fact, through a bequest of Jean I de Tournes, Serlio's Lyonese publisher), is similar to one of the temple models illustrated in Serlio's *Fifth Book* of 1547; see Georg Germann, *Der protestantische Kirchenbau in der Schweiz* (Zurich, 1963), 25–26 and note 4 (with bibliography).

113. Carpo, "La traduction française du *De re aedificatoria*," note 136.

114. On Serlio's dismissal in 1548, see Myra Nan Rosenfeld, "The Royal Building Administration in France from Charles V to Louis XIV," in *The Architect: Chapters in the History of the Profession*, ed. Spiro Kostof (New York: Oxford University Press, 1977), 160–178. On Philibert's nomination in that same year, see Louis Hautecoeur, *Histoire de l'architecture classique en France*, vol. I, part 1, *La formation de l'idéal classique: La Renaissance* (Paris: A. Picard, 1943), 222 and following. The pension that Serlio received from Marguerite de Navarre would have terminated with Marguerite's death in 1549; Dinsmoor, "The Literary Remains of Sebastiano Serlio," note 89.

115. On the architectural and urban projects underway in Lyons in the late forties (of which traces are found in Serlio's *Seventh Book*, published posthumously in 1575), see Anne Zander, "La rue Mercière à Lyon, histoire urbaine et sociale," in *Aspects du seizième siècle à Lyon*, ed. Marie-Félicie Perez (Lyons: Institut d'histoire de l'art, Université Lyon 2, 1993), 100–104 (with bibliography). Serlio was in Lyons in 1550 when he met Iacopo Strada (Dinsmoor, "The Literary Remains of Sebastiano Serlio," note 101), but Serlio's name does not figure in the works planned for

Henri II's 1548 entrance into Lyons: [Maurice Scève, Claude de Taillemont], *La magnificence de la superbe et triumphante entrée de la noble et antique cité de Lyon, faicte au treschrestien roy de France Henri, deuxiesme de ce nom, et a la royne Catherine, son espouse, le 23 septembre, 1548* (Lyons, 1549). See also Dinsmoor, 75, note 102.

116. The fifty copper-plate engravings of the *Extraordinario Libro* of 1551 have been attributed to Serlio, as have the seventy-seven woodcuts of the Latin Vitruvius (accompanied by the *Annotations* of Philandrier) published in 1552, again by de Tournes; see Dinsmoor, "The Literary Remains of Sebastiano Serlio," note 100. The source of this hypothesis is Léon Charvet, *Sébastien Serlio, 1475–1554* (Lyons: Glairon-Mondet, 1869), 45–46—and it has been contested and defended ever since. See Henri Zerner, "Du mot à l'image: le rôle de la gravure sur cuivre," in *Les traités d'architecture de la Renaissance*, 284; Carpo, *La maschera e il modello*, 103, note 53 (despite the evidence cited by Cartier, *Bibliographie des éditions des de Tournes*, 11–17, Geoffroy Tory, who died in 1533, cannot have worked for Jean de Tournes).

117. *Livre extraordinaire de Architecture de Sebastien Serlio, Architecte du Roy treschrestien, auquel sont demonstrees trente portes rustiques meslees de divers ordres. Et vingt autres d'oeuvre delicate en diverses especes* (Lyons: Iean de Tournes, 1551). *Extraordinario Libro di architettura di Sebastiano Serlio* [. . .] *Nel quale si dimostrano trenta porte di opera rustica mista con diversi ordini et venti di opera dilicata di diverse specii con la scrittura davanti che narra il tutto* (Lyons: G. di Tournes, 1551).

118. For this interpretation of the *Extraordinario Libro*, see my *La maschera e il modello*. An interpretation that is diametrically opposed to mine, but also valid, is found in Myra Nan Rosenfeld, review of *La maschera e il modello*, by M. Carpo, *Design Book Review*, 35 (1994): 40–43. John Onians (*Bearers of Meaning*, 282) had already revealed the duplicity of the architectural models contained in Serlio's *Extraordinario Libro*:

Each portal individually embodies the same opposition between the two sections of the book. [. . .] Serlio is at pains to point out that if rustication is removed, the architecture underneath will be found to be quite correct [. . .]. Underneath, they [the portals] remained the embodiment of the best standards of correctness and restraint.

Unfortunately I was able to consult the work of Onians only after the publication of my books on Serlio in 1992–1993. Onians also discusses, offering an interpretation different from my own, other passages of Serlio's

Third and *Seventh Book*, essential to my arguments (*Bearers of Meaning*, 266–271). See note 58 of this chapter.

119. Charvet (*Sébastien Serlio*) has Serlio returning to Fontainebleau nel in1553, where he would have died the following year; see Dinsmoor, "The Literary Remains of Sebastiano Serlio," note 108. Recently, two letters have been discovered that Serlio seems to have written to François de Dinteville, bishop of Auxerre, between 1551 and 1552: Serlio is consulted about the decorative program of a church façade; in one of the letters he explains that Christ should not be represented in images "parce-que chaque Chrétien l'aura dans son coeur." See François-Charles James, "Sebastiano Serlio à Lyon à travers deux lettres à François de Dinteville, évêque d'Auxerre," paper presented at the conference *Sebastiano Serlio* (Vicenza, September 1987), but not published in the proceedings. The same unpublished paper was presented at the Sorbonne, Paris during a graduate seminar in art history, December 11, 1992 and in Lyons, graduate seminar in art history, CNRS and Lyon-II, March 16, 1996. Rosenfeld refers to this presentation in "Recent Discoveries about Sebastiano Serlio's Life and His Publications," 6, note 49. Serlio may still have been involved in organizing the ceremonies for the entry into Lyons of the new archbishop, the cardinal of Tournon, on September 28, 1552 (Rosenfeld, 5, note 45, source not cited). Some new data and documents on Serlio's last years in France can now be found in Sabine Frommel, *Sebastiano Serlio* (Milan: Electa, 1998).

Chapter 5

1. Paul Chaix, *Recherches sur l'imprimerie à Genève de 1550 à 1564: Étude bibliographique, économique et littéraire* (Geneva: Droz, 1954), 9.

2. Chaix, *Recherches sur l'imprimerie*, 33.

3. Lateran Council V, Session X, 4 May 1515, "Super impressione librorum," in *Conciliorum Oecumenicorum Decreta*, ed. Hubert Jedin (Freiburg i-B, 1962), 608–09. This document derives from a brief of Sixtus IV, which granted to the University of Cologne the right to censor printed works that were counter to the faith; the Church first took a stand on this issue in the constitution *Inter Multiplices* of Innocent VIII (November 17, 1478), which was reiterated by his successor Alexander VI (June 1, 1501). See *Latran V et Trente*, ed. Olivier de la Brosse (Paris: Éditions de l'Orante, 1975), 84. The decrees of the Council have been published in English as *Decrees of the Ecumenical Councils*, ed. Norman P. Tanner (London: Sheed and Ward, 1990).

4. Issued on March 18, 1521; see Chaix, *Recherches sur l'imprimerie*, 76–78.

5. Council of Trent, session IV, second decree, April 8; 1546, *Recipitur vulgata editio bibliae et praescribitur modus interpretandi sacram scripturam*, in *Conciliorum Oecumenicorum Decreta*, 1962, 641: "[. . .] decernit et statuit [. . .] nulli liceat imprimere vel imprimi facere quosvis libros de rebus sacris sine nomine auctoris, neque illos in futurum vendere aut etiam apud se retinere, nisi primum examinati probatique fuerint ab ordinario, sub poena anathematis et pecuniae in canone concilii novissimi Lateranensis apposita."

6. Roman Index of 1559, general decrees: see text and commentary in J. M. de Bujanda, *Index des livres interdits*, vol. VIII, *1557, 1559, 1564, les premiers Index de Rome et l'Index du Concile de Trente* (Sherbrooke, Canada and Geneva: Editions de l'Université de Sherbrooke and Librairie Droz, 1990), 134.

7. Tridentine Index of 1564, *Regula decima:* "In librorum, aliarum vel scripturarum impressione servetur, quod in Concilio Lateranensis, sub Leone decimo, sessione decima statutum est," 152–53. See notes 24 and 26 of this chapter.

8. Chaix, *Recherches sur l'imprimerie*, 78–82.

9. Chaix, *Recherches sur l'imprimerie*, 69.

10. The revenue from the royalties was donated to the Bourse des Pauvres Etrangers; Chaix, *Recherches sur l'imprimerie*, 76.

11. Chaix, *Recherches sur l'imprimerie*, 82.

12. Matthaeus Judex [M. Richter], *De Typographiae inventione, et de praelorum legitima inspectione, libellus brevis et utilis* (Copenhagen: Johannes Zimmermann, 1566); the preface is dated Copenhagen, 1564. Richter appeals to the authorities and calls for the use of force to liberate printing "a foeda illa servitude et oppressione plurimum magnatum, neopapalem sedem iuxta vaticinia Lutheri confusa Ecclesiastica et politica potestate machinantium [. . .]"; since by now "non modo papistae, sed etiam aulae, seu ut vocant Cancelleriae, curiae, et improba Consistoria, quae in Lutheranorum ecclesia instituuntur, sub praetextu inspectionis librorum edendorum Ecclesiam suo iure et libertate, et potestate iudici defraudant [. . .]," 8, 11.

13. Eisenstein, *The Printing Revolution in Early Modern Europe* (Cambridge: Cambridge University Press, 1983), 169.

14. Laurent de Normandie is sometimes referred to as a "marchand libraire"; see Chaix, *Recherches sur l'imprimerie*, 42–45.

15. Chaix, *Recherches sur l'imprimerie*, 60.

16. "Servantes pour plus grande intelligence"; see Théophile Heyer, "Notice sur Laurent de Normandie," *Mémoires et Documents: Société d'Histoire et d'archéologie de Genève* 16 (1867): 410.

17. Andreas Bodenstein von Karlstadt, *Von abtuhung der Bylder / Und das keyn Betdler unther den Christen seyn sollen* (Wittenberg, 1522). Reprinted in: *Kleine Texte für theologische und philologische Vorlesungen und Übungen*, vol. 74 (Bonn, 1911), ed. H. Lietzmann. English translation and commentary by Bryan D. Mangrum, Giuseppe Scavizzi, *A Reformation Debate: Karlstadt, Emser, and Eck on Sacred Images* (Ottawa: Dovehouse Editions, 1991).

18. Mangrum and Scavizzi, *A Reformation Debate*, 3–7.

19. The original reads:

Nam, ut ad conservandam eorum memoriam, quae de Deo et sanctis eius divinae pronunciant historiae, plurimum prosunt imagines et figurae [. . .]; sic sublatis imaginibus et tardius capiunt ac difficilius retinent, quae audiunt simplices [. . .]. Cuius rei plurime hodie in Germania, eademque evidentissima videre licet exempla. Age ingredere templum aliquod imaginibus spoliatum, et contemplare populum verbum Dei audientem, finito sermone videbis omnes sine omni devotione et ordine ex templo evolare. Rursus ingredere templum picturis et imaginibus ornatum et instructum, finito sermone verbi Dei, videbis multos devotos homines in templo subsistere, et genua ad altaria flectentes, ea quae audiverunt, in figuris etiam ipsis tacite contemplari, et velut memoriae commendare, atque insuper debitum cultum tam Deo quam Sanctis eius praestare. (Conradus Brunus, [Konrad Braun], *Epistola*, [dated "VI. Kalendas Iulias, 1548"], to Cardinal Alessandro Farnese in *De imaginibus liber D. Conradi Bruni Iureconsulti, Cancellarii Landeshutensis, in Bavaria, Catholica Germaniae Provincia, adversus Iconoclastas*; in *Id., Opera Tria*, [. . .], *nunc primum aedita* [Mainz: Apud S. Victorem. Ex officina Francisci Behem typographi, 1548])

20. Council of Trent, session XXV, December 3–4, 1563, "De invocatione, veneratione, et reliquiis sanctorum et de sacris imaginibus," in *Conciliorum Oecumenicorum Decreta*, 750–752:

Imagines porro Christi, deiparae Virginis et aliorum sanctorum, in templis praesertim habendas et retinendas, eisque debitum honorem et venerationem impertiendam, non quod credatur inesse aliqua in iis divinitas vel virtus, propter quam sint colendae, vel quod ab eis sit aliquid petendum, vel quod fiducia in imaginibus sit figenda, veluti olim fiebat a gentibus, quae in idolis spem suam collocabant: sed

quoniam honos, qui eis exhibetur, refertur ad prototypa, quae illae repraesentant: ita ut per imagines, quas osculamur et coram quibus caput aperimus et procumbimus, Christum adoremus, et sanctos, quorum illae similitudinem gerunt, veneremur. Id quod conciliorum, praesertim vero secundae Nicaenae synodi, decretis contra imaginum oppugnatores est sancitum. [. . .] Quodsi aliquando historias et narrationes sacrae scripturae, cum id indoctae plebi expediet, exprimi et figurari contigerit: doceatur populus, non propterea divinitatem figurari, quasi corporeis oculis conspici, vel coloribus aut figuris exprimi possit [. . .].

21. See note 5 of this chapter.
22. Council of Trent, session IV, April 8, 1546, first decree: "Recipiuntur libri sacri et traditiones apostolorum," in *Conciliorum Oecumenicorum Decreta*, 1962, 639–640:

Insuper eadem sacrosancta synodus considerans, non parum utilitatis accedere posse ecclesiae Dei, si ex omnibus latinis editionibus, quae circumferuntur sacrorum librorum, quaenam pro authentica habenda sit, innotescat: statuit et declarat, ut haec ipsa vetus et vulgata editio, quae longo tot saeculorum usu in ipsa ecclesia probata est, in publicis lectionibus, disputationibus, praedicationibus, et expositionibus pro authentica habeatur, et quod nemo illam reiicere quovis praetextu audeat vel praesumat.

23. Hubert Jedin has reconstructed the debate and the conflicts among the conciliar fathers during the sessions leading up to the adoption of the decree; in the absence of an agreement on the necessity of a philological revision of the text of the Vulgate, and in complete disagreement on the more urgent question of translations into modern languages, an ambiguous compromise was adopted: the vernacularization of the Scriptures was neither forbidden nor authorized. See Jedin, *Geschichte des Konzils von Trient*, II, *Erste Trienter Tagungsperiode*, 1545–1547 (Freiburg, Herder, 1957), 77:

Der Verlauf der Debatte, den wir in den grossen Zügen verfolgt haben, lässt einwandfrei erkennen, dass das Konzil nicht die Absicht hatte, das Studium der biblischen Ursprachen durch dieses Dekret zu schmälern oder gar zu unterbinden. Die Herstellung einer revidierten Vulgata Ausgabe wird in Aussicht genommen, ohne dass Wie und Wo bestimmt wird. Die heftig umstrittene Frage der Bibelübersetzung in die Landessprachen bleibt ebenfalls unentschieden [. . .].

24. *Index auctorum et librorum, qui ab Officio Sanctae Rom. et Universalis Inqui-sitionis caveri ab omnibus et singulis in universa Christiana Republica man-dantur . . .* (Rome: Blado, 1559); "Moderatio Indicis," June 14, 1561, manuscript of the inquisitor Michele Ghislieri, Cod. Vat. Lat. 3958, pub-lished in De Bujanda, *Index des livres interdits*, vol. VIII, 105–106; *Index* [. . .] *librorum prohibitorum cum regulis confectis per Patres a Tridentina Syn-odo delectos* (Rome: Manuzio, 1564); *Index* [. . .] *cum regulis confectis* [. . .] *auctoritate Pii IIII primum editus, postea vero a Sixto V aucto et nunc demum S.D.N. Clementis PP. VIII iussu* [. . .] *Instructione adiecta* [. . .] (Rome: Im-pressores Camerales, 1596). Texts published and discussed in De Bujanda, *Index des livres interdits*, vol. VIII. See G. Fragnito, "La Bible en italien et l'enquête de la congrégation de l'Index dans les bibliothèques des cou-vents italiens à la fin du XVIe siècle," to be published in the proceedings of *La Bible imprimée dans l'Europe moderne, XVe-XVIIIe siècles*, Paris, No-vember 1991 (forthcoming). See note 26 of this chapter. On the whole question, see G. Fragnito, *La Bibbia al rogo. La censura ecclesiastica e i vol-garizzamenti della Scrittura, 1471–1605* (Bologna: Il Mulino, 1997).

25. Eisenstein, *The Printing Revolution*, 157:

Decisions made at Trent were merely the first in a series of rear-guard actions de-signed to contain the new forces Gutenberg's invention had released. The long war between the Roman church and the printing press continued for the next four cen-turies and has not completely ended. [. . .] Even after Vatican II, a complete cessa-tion of hostilities between popes and printer's devils is still not clearly in sight.

Eisenstein's thesis on the relationship between printing and modernity are discussed, from another point of view, in Anthony Grafton, "The Impor-tance of Being Printed," review of *The Printing Revolution in Early Modern Europe*, by E. Eisenstein, *Journal of Interdisciplinary History* XI, II (Autumn 1980): 265–286. For a more general counterargument to Eisenstein's positing of a Renaissance "typographic revolution" with cultural, social, scientific, theological, and artistic consequences, see Sandra Hindman and James Douglas Farquhar, *Pen to Press: Illustrated Manuscripts and Printed Books in the First Century of Printing* (College Park, MD: Art De-partment, University of Maryland, 1977), 101–156. Myra Nan Rosenfeld and others have recently underscored the fact that books of drawings (es-pecially model books or sketchbooks of drawings after the antique) con-tinued to be copied by hand and widely circulated throughout the Cinquecento: in this case, the printed book would not have been a deter-mining factor in the formation of Renaissance antiquarian culture. A

proof of the coexistence, or complementarity, of drawings reproduced by different techniques is the activity of Jacques Androuet du Cerceau's workshop, where geographic maps, and drawings of architecture, perspective, and geometry were not only printed but also executed by hand through a production system organized like that of a medieval scriptorium (Du Cerceau was also an architect, business man, and wine merchant). See Myra Nan Rosenfeld, "From Drawn to Printed Model Book: Jacques Androuet du Cerceau and the Transmission of Ideas from Designer to Patron, Master Mason and Architect in the Renaissance," in *RACAR* XVI, no. 2 (1989): 131–147, especially 132–133.

Collections of drawings or artists' notebooks were manifestly an important component for the formation of Renaissance visual culture (see Arnold Nesselrath, "I libri di disegni di antichità: tentativo di una tipologia," in *La memoria dell'antico nell'arte italiana*, III, *Dalla tradizione all'archeologia*, ed. Salvatore Settis [Turin: Einaudi, 1986], 89–119), but it is not always easy to distinguish between public and private use of a sketchbook. Furthermore, the price difference between a printed and manuscript version of the same work might have been around 35,000 percent (according to the few available data, which are based on unillustrated incunables, the price of a manuscript was about 350 times as high as the price of the same book in print); see Eisenstein, *The Printing Revolution*, 17 (with bibliography). It is therefore reasonable to assume that the same drawings of antique subjects, printed or hand-copied as a commercial venture, were not made for the same publics, the same uses, nor for circulation in the same quantities. See David Diringer, *The Illuminated Book, Its History and Production* (London: Faber and Faber, 1958), 415: "It has been said that excellent illuminated codices continued to be produced in France long after the introduction of printing [. . .]. But, without grave inaccuracy, it may be said that book-painting generally had lost its originality by the end of the fifteenth century." See also the present work, chapter 1, note 8.

26. With some exceptions: the *Instructions* appended to the Roman Index of 1559 specify that vernacular versions of the Scriptures might eventually be approved in response to application from members of the minor orders or from pious laypersons whose faith was not in question. No such authorization, however, was foreseen for priests or deacons, and the same prohibition was extended to all women, including the religious: *Instructio circa indicem* [. . .] (Rome: Antonio Blado, February 1559) in De Bujanda, *Index des livres interdits*, vol. VIII, 104, 140. The saying of mass in vernacular languages was also prohibited (see Bujanda, 104, 140). The *Modera-*

tio Indicis of 14 June 1561 revoked the two classes of interdictions of the 1559 Index (for priests and women), but new restrictions were introduced by the *Regula quarta* of the Index of 1564, and after; see note 24 of this chapter.

27. Felix of Urgel was condemned at the Council of Frankfurt of 794. Hieronymus Emser, *Das Man der heyligen Bilder in der Kirchen nit abthon, noch unehren soll. Und das sie in der Schrifft nyndert verbotten seyn* (Dresden, 2 April 1522). Johannes Eck, *De non tollendis Christi et Sanctorum Imaginibus: contra haeresim Faelicianam sub Carolo Magno damnatam, et iam sub Carolo V renascentem decisio* (Ingolstadt, 1522). English translation and commentary in Mangrum and Scavizzi, *A Reformation Debate*; for the Felician heresy, see 89, note 1.

28. Karlstadt, *Von abtuhung der Bylder*, in Mangrum and Scavizzi, *A Reformation Debate*, 34; see also Scavizzi, *Arte e architettura sacra. Cronache e documenti sulla controversia tra riformati e cattolici (1500–1550)* (Rome and Reggio Calabria: Casa del Libro, 1982), 118.

29. Karlstadt, *Von abtuhung der Bylder*, in Mangrum and Scavizzi, *A Reformation Debate*, 24–25 (reference to John, 10:27).

30. Karlstadt, *Von abtuhung der Bylder*, in Mangrum and Scavizzi, *A Reformation Debate*, 24–25.

31. Polidoro Virgilio [or Vergilio], *De inventoribus rerum libri tres* (Venice: Cristoforo de Pensi, 1499), II,7. English translation from Polydore Vergil, *Beginnings and Discoveries: Polydore Vergil's de Inventoribus Rerum*, ed. and trans. Beno Weiss and Louis C. Pérez (Nieuwkoop: De Graaf Publishers, 1997), 129, 130. Virgilio spent much of his clerical career in England as Polydore Vergil.

32. Virgilio, *De inventoribus rerum*, III,18.

33. Polidoro Virgilio, *De la origine et de gl'inventori de le leggi, costumi, scientie, arti, et di tutto quello che a l'humano uso conviensi, con la Espositione dil Pater nostro* [. . .], trans. Pietro Lauro (Venice: G. Giolito, 1543; reprint 1545). The second-class interdict (books by authors not all of whose books are banned) on the Roman Index of 1564 was motivated by the fact that *De inventoribus rerum* "ab haereticis auctus et depravatus est." Polidoro Virgilio (Polydore Vergil) also figures in other expurgative Indices: see De Bujanda, *Index des livres interdits* vol. VIII; and VII, *Index d'Anvers, 1569, '79, '71* (Sherbrooke and Geneva, 1988), s.v. "Polidoro Virgilio."

34. Matthaeus Iudex, or Judex [Matthäus Richter], *De Typographiae inventione*, 5: the "artificium typographicum," unknown for 5412 years, invented by a German in the last century thanks to divine intervention, is responsible for the recent diffusion of literary knowledge and of the publishing of

many ancient authors in every sort of field; moreover, printing promotes the restoration of doctrinal purity,

et revelationem antichristi, et regni eius destructionem. Nam unum in eo genere libello, ceu telum aut globum quendam ad feriendum Antichristum per Angelum et virum Dei Doctorem Martinum Lutherum [. . .] directum, et vix in uno aliquo loco eius socios icturum, typographia ceu amplissima quaendam machina tormentaria excepit, et brevi tempore multiplicavit, et quasi densissimam grandinem eiaculata est, et plurimis in locis zizania papistica contrivit, et errores et corrupt-elas [. . .] et idolomanias Antichristi destruxtit et abolevit, et veram doctrinam propagavit, et ubique fere locorum membra Ecclesiae effecit eos, qui antea in tenebris et umbra mortis sedebant.

Just as to aid the propagation of the Gospels the Holy Spirit gave the apostles knowledge of all tongues, printing conferred the advantage of speed: "nam [. . .] brevi temporis spacio magno numero per exemplaria divulgata [. . .] et hinc inde dispersa plures sortiuntur lectores, quos Deos accendit veritatis agnitione, qui postea eandem doctrinam in suam linguam transferentes, iterum typographiae beneficio, per multa exemplaria diffundunt, ut innotescat plurimis." And on page 25: "An typographia hominum, an vero Dei sit donum, et inventum," in reference to Wycliff and Hus, "facilius repressi a meretrice babylonica, quod praelorum beneficio destituti fuerunt"; and

Quando inventa, et cur tot saeculis ignorata? [. . .] Cum Antichristus esset revelandus, paulatim Deus ad eam rem patefecit auditum, typographiam in Germania instituendo, artium et linguarum studia accendendo. Et sicut Deus non priusquam nostro saeculo voluit Antichristum adeo aperte revelari [. . .] ita etiam non alio quam isto tempore, quod revelationem Antichristi vix 67 annis antecessit, pro Sua aeterna sapientia artificium typograpicum inveniri, et in lucem produci curavit. Haec a posteriori colligi possunt. (28)

35. "Ainsi que l'ennemi par livres a séduit / le peuple dévoyé qui faussement le suit, / il faut en disputant par livres le confondre, / par armes l'assaillir, par armes lui répondre," Ronsard, *Élégie à G. des Autels, gentilhomme Charolais.* In the first edition (*Oeuvres*, 1560), the last line was: "par livres l'assaillir, par livres lui répondre." "Livres" was changed to "armes" in the editions of 1562 (Paris: Gabriel Buon) and after. The original wording was restored in the 1584 edition. See Ronsard, *Discours des misères de ce temps* (1567), ed. Francis Higman (Paris, 1993), 42.

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36. Von Karlstadt, *Von abtuhung der Bylder / Und das keyn Betdler unther den Christen seyn sollen*, 1522.

37. John Foxe, *Actes and Monuments of these latter and perillous dayes, touching matters of the Church, wherein are comprehended and described the great persecutions, & horrible troubles* [. . .] (London: John Day, 1563). The image is reproduced and discussed in Eisenstein, *The Printing Revolution*, 171. See my fig. 5.1.

38. E. Iserloh, *Luther zwischen Reform und Reformation: der Thesenanschlag fand nicht Statt* (Münster, 1966), 65 and following. Cited and discussed in Joseph Rykwert, "On the Oral Transmission of Architectural Theory," *AA Files* 6 (1984): 15, note 5.

39. Martin Luther, *Tischreden*, in *D. Martin Luthers Werke. Kritische Gesammtausgabe, 1. Band, Tischreden* [. . .], 6 vols., vol. 1 (Weimar, 1912), 523, no. 1038, and other passages cited and discussed in Jean-François Gilmont, introduction to *La réforme et le livre. L'Europe de l'imprimé, 1517–1570*, ed. Jean-François Gilmont (Paris: CERF, 1990), 10–11 and notes 4 and 5: "le réformateur exprime plus souvent un avis négatif sur la nouvelle invention. Pour lui, les livres inutiles ou même nuisibles abondent [. . .]; Luther formule le voeu qu'il n'y ait que peu de livres en dehors de l'Ecriture; il souhaite que ses propres livres soient détruits [. . .] parce-que tous les livres doivent mener à l'Ecriture."

40. Martin Luther, the third of the eight sermons of the *Invocavit*, March 1522, in *D. Martin Luthers Werke. Kritische Gesammtausgabe*, 58 vols., vol. 10, part 3 (Weimar, 1883–1973), 26–30: images should not be destroyed, for they are still useful to some. "Speaking through Moses, God said: I brought you into the world and raised you, as a mother does with a child. What does a mother do with a child? First she gives it milk, then eggs and light foods, because if she reversed the order and gave the baby solid food right away, it would not grow." Passage translated into Italian and discussed by Scavizzi, *Arte e architettura sacra*, 64 and note 117. The metaphor of the two types of food comes from Saint Paul (I, Cor., 3:2; Heb., 5:12–14) and was a topos of the sixteenth-century debate on the "two roads" of evangelizing. See Scavizzi, 295–296 (with notes and bibliography).

41. Scavizzi, *Arte e architettura sacra*, 78: "Proprio nel momento in cui afferma, in uno dei sermoni dell'*Invocavit*, che preferirebbe non avere immagini, Lutero fa stampare una Bibbia illustrata. Dunque egli distingue fra un'arte che si può prestare agli abusi e l'illustrazione dei libri."

42. Bibles printed in Antwerp starting in 1530 by Martin Lempereur and Willem Vorsterman; see J.-F. Gilmont, introduction to *La réforme et le livre*, 10.

43. Gilmont, introduction to *La réforme et le livre*, 21. For the *Ordonnances sur l'imprimerie* of February 13, 1560, see also E. H. Gaullieur, *Etudes sur la typographie genevoise du XVe au XIXe siècles, et sur les origines de l'imprimerie en Suisse* (Geneva, 1855), 103 and following; Alfred Cartier, "Arrêts du Conseil de Genève sur le fait de l'imprimerie et de la librairie, de 1541 à 1550," *Mémoires et documents publiés par la Société d'Histoire et d'Archéologie de Genève* XXIII (1888–1894): 361–566.

44. Chaix, *Recherches sur l'imprimerie*, 21.

45. Chaix, *Recherches sur l'imprimerie*, 53, 136.

46. Chaix, *Recherches sur l'imprimerie*, 53.

47. Chaix, *Recherches sur l'imprimerie*, 44, 47, 53.

48. On the illustrations of the Bibles printed in Geneva in the sixteenth century, see Chaix, *Recherches sur l'imprimerie*, 137, 107 (with bibliography).

49. *L'anthithèse des faicts de Jesus Christ et du pape* of Simon du Rosier was printed by Zacharie Durant in Latin (1557, 1558) and in French translation (1560); the Conseil banned its sale and ordered its destruction in 1558. See Chaix, *Recherches sur l'imprimerie*, 99, 136.

50. Chaix, *Recherches sur l'imprimerie*, 99; Cartier, "Arrêts du Conseil de Genève," 468 and notes.

51. Jacques Tortorel and Jean Perissin, *Premier volume contenant quarante tableaux ou histoires diverses qui sont mémorables touchant les guerres, massacres et troubles advenus en France en ces dernières années* [. . .] (printer unknown, circa 1569–1570); Théodore de Bèze, *Icones, id est Verae imagines virorum doctrina simul et pietate illustrium* [. . .] *quibus adjectae sunt nonnullae picturae quas Emblemata vocant* (Geneva: J. Laonium, 1580). See Chaix, *Recherches sur l'imprimerie*, 136–137.

52. The biographies of Jean I and Jean II de Tournes, with bibliographical notes and an appendix on archival documents are in E. Vial, "Notice biographique," in Cartier, *Bibliographie des éditions des de Tournes, imprimeurs lyonnais: Mise en ordre avec une introduction et des appendices par Marius Audin, et une notice biographique par E. Vial*, 2 vols., vol. 1 (Paris: Editions des Bibliothèques Nationales de France, 1937), 113–133. See Carpo, *La maschera e il modello. Teoria architettonica ed evangelismo nell'*Extraordinario Libro *di Sebastiano Serlio* (Milan: Jaca Book, 1993), 100–105.

53. Vial, "Notice biografique," 131 and note 40; the documents concerned and the request for the 1585 imprimatur are published in the same work, 150–157; see especially 153. (The *octroi* [concession] of the profession of printer, Archive d'Etat de Genève, Reg. du Conseil is found in vol. 80, f. 156; the list of books that Jean II de Tournes requested permission to print, November 30, 1585 is found in vol. 80, f. 164v.) On these archival

sources, see Chaix, *Recherches sur l'imprimerie*, 241; Cartier, "Arrêts du Conseil de Genève," 367. Some of this information is confusing. The archival data given by Vial do not correspond with those cited by Audin elsewhere in the same volume; M. Audin, "Les de Tournes imprimeurs," in Cartier, *Bibliographie des éditions des de Tournes*, 23.

54. On the *Epitome Thesauri Antiquitatum* of Strada (the title of the French edition is *Epitome du thresor des antiquitez, de l'estude de Iaques de Strada Mantuan Antiquaire*: Cartier, *Bibliographie des éditions des de Tournes*, catalog, nos. 259–260), see Carpo, *La maschera e il modello*, 104, note 54 (with bibliography). The work of Strada, with woodcuts by Bernard Salomon, was published simultaneously in Latin and French in Lyons in 1553 by Thomas Guerin, and in German in 1558 in Zurich. The two Lyonese editions were in fact printed by Jean de Tournes. See Cartier, 357–59; William Bell Dinsmoor, "The Literary Remains of Sebastiano Serlio," *The Art Bulletin* XXIV (1942): 78 and notes; Dirk-Jacob Jansen, "Jacopo Strada editore del *Settimo Libro*," in *Sebastiano Serlio, sesto seminario internazionale di storia dell'architettura, Vicenza, 31 agosto–4 settembre 1987*, ed. Christof Thoenes (Milan: Electa, 1989), 207–215.

55. M. Audin, "Les de Tournes imprimeurs," in Cartier, *Bibliographie des éditions des de Tournes*, 9–17. On the engravings of Bernard Salomon and Pierre Cruche for the de Tournes publishing house see Carpo, *La maschera e il modello*, 103, note 53. Despite the numerous references in Cartier (17 and elsewhere) Geoffroy Tory (ca. 1480–1533) cannot have worked for Jean de Tournes; see above, chapter 4, note 116, which also addresses the hypothesis of Serlio as engraver. Even if the quality of the engravings is better, many architectural details in the illustrations of the "Digression" on the orders in the 1552 Lyons *Vitruvius* are imprecise (for example, the profiles of certain moldings); furthermore, the new illustrations are in some cases less faithful to Philandrier's text than those of 1544. See Lemerle-Pauwels, "Architecture et humanisme au milieu du XVIème siècle: les *Annotationes* de Guillaume Philandrier. Introduction, traduction et commentaire, livres I–V" (Ph.D. diss., Université de Tours et Centre d'Etudes supérieures de la Renaissance, 1991), lxiii; revised as Lemerle, *Les* Annotations *de Guillaume Philandrier sur le* De Architectura *de Vitruve, livres I à IV* (Paris: Picard, 2000). (See also my figs. 4.4 and 5.2.)

56. See Camille Martin, *La Maison de Ville à Genève* (Geneva: A. Jullien, 1906), 72; Armand Brulhart and Erica Deuber-Pauli, *Arts et Monuments, Ville et Canton de Genève* (Geneva: Georg, 1985), 53; Carpo, "The Architectural Principles of Temperate Classicism: Merchant Dwellings in Sebastiano Serlio's Sixth Book," *Res* XXII (1992): 151, fig. 13.

57. *M. Vitruvii Pollionis de Architectura libri decem* [. . .] *Accesserunt, Gulielmi Philandri Castilionij, civis Romani, annotationes castigatiores, & plus tertia parte locupletiores* [. . .] ([no location]: Apud Ioan. Tornaesium, Typogr. Reg. Lugd., 1586, "Cum privilegio ad decennium"). (Excerpt from a ten-year license dated in Lyons January 21, 1574 and granted to "Jean de Tournes imprimeur du Roy à Lyon"; at the bottom of the license is written "achevé d'imprimer le 14 d'aoust 1586" [f. B4.]) Cartier, *Bibliographie des éditions des de Tourne*s, catalog of de Tournes editions, no. 664. The place of publication is not indicated; some copies bear the stamp "Genevae" on their title pages (Cartier, 628). See Lemerle, "Architecture et humanisme," lxxxv: "l'ordre des pièces n'est pas identique [to the 1552 edition]. La devise de 1586 est différente de celle de 1552. Pour le texte des *Annotations*, seules des coquilles peuvent être signalées." See Laura Marcucci, "Duemila anni di Vitruvio. Regesto cronologico e critico [of Vitruvian editions]," *Studi e documenti di Architettura* 8 (1978): 71; and Bodo Ebhardt, *Vitruvius. Die Zehn Bücher der Architektur des Vitruv und ihre Herausgeber* (Berlin, 1918), 73; P. Chaix, A. Dufour, G. Moeckli, *Les livres imprimés à Genève de 1550 à 1600* (Geneva: Droz, 1966), 118. In the Cicognara catalog, the edition of 1586 is said to be identical to that of 1552, "colle medesime figure" (Marcucci, 71).

58. Chaix, *Recherches sur l'imprimerie*, 56, 86; Gaullieur, *Etudes sur la typographie genevoise*, 183–188.

59. *Architecture, ou art de bien bastir, de Marc Vitruve Pollion, mis de latin en françois par Iean Martin* [. . .] (Cologny [or Geneva]: Jean de Tournes, 1618 [or 1628]).

60. On the falsification of the place of publication in certain Genevan publications, and especially on "Cologny," see Gaullieur, *Etudes sur la typographie genevoise*, 188–189, 208; A. T. (anonymous), "Sur des livres imprimés à Genève au XVIe et XVIIe siècles sous cette rubrique: Coloniae Allobrogum, ou Cologny," *Bulletin de la société d'histoire du Protestantisme français* V (1857): 445–450; Chaix, *Recherches sur l'imprimerie*, 84–86.

61. *Vitruvius* (1618 [1628]): on some copies, the place of publication, "Cologny," has been canceled typographically and replaced by the stamp "Genève": see Bibliothéque Nationale, Paris, V.8910 and V.8908 ("Genève, 1628"); Avery Architectural and Fine Arts Library, Columbia University, AA 2515.V85–1618.

62. *Vitruvius*, trans. Martin, appendix by Goujon (1547); reprinted in Paris in 1572 by Hierosme de Marnef and Guillaume Cavellat.

63. A copy of the second edition (1572) of Jean Martin's translation of Vitruvius (1547) has recently been identified in the collection of the Avery

Architectural Library, Columbia University, with hand-written notes in the margins that have been attributed to the editor of the de Tournes edition of 1618 (Avery Architectural and Fine Arts Library, Columbia University, AA 2515.V85–1572). This discovery was made known to me in April 1996 by Gerald Beasley, researcher at the Centre Canadien d'Architecture, Montreal. There followed just a few weeks later a publication by Herbert Mitchell and Max Marmor, "An Unrecorded Manuscript Translation of Philander's "Digressio Utilissimo" [*sic*] on the Classical Orders and the Geneva *Vitruvius* of 1618," *Journal of the Society of Architectural Historians* LV (June 1996): 152–157. According to Mitchell and Marmor, eight hand-written pages (on four sheets) have been added to the end of the volume; these contain the text of the French version of the *Digressio Utilissima* of Philandrier (1544, 1552), published for the first time by de Tournes in 1618. The marginal notes to the Vitruvian text also contain references to the French translation of the brief *Life of Vitruvius* by Philandrier, and on the page of Philandrier on the "virtue of the architect" (a Vitruvian citation), also translated into French in the de Tournes edition of 1618, but the manuscript of these two brief translation has disappeared; Mitchell and Marmor, 157, note 10. The marginal notes to the text of 1572 systematically modernize spellings, introduce additions and corrections, and delete references to Jean Goujon, only three of whose illustrations were reproduced by de Tournes, who had at his disposal the woodblocks for the *Vitruvius* of 1586 (and 1552). In another hand is also indicated is the new pagination of the de Tournes edition; Mitchell and Marmor (154) suggest that the author of the notes is Jean III de Tournes, who may also have been the translator.

64. In the 1540 correspondence of Guillaume Pellicier, French ambassador to Venice, there twice appears the name "Maître Martin," one of those in charge of the acquisition and the transcription of Greek manuscripts, particularly those on medical subjects, for the royal library. (Pellicier was at that same time organizing Serlio's departure for France; see Carpo, *La maschera e il modello*, 96–99 and notes.) See also A. Tausserat-Radel, *Correspondance Politique de Guillaume Pellicier ambassadeur de France à Venise, 1540–42* (Paris, 1899), 127, 177 (letters to Rabelais, October 17, 1540 and to M. De Tulle, December 2, 1540); Richard Cooper, *Rabelais et l'Italie* (Geneva: Droz, 1991), 169, 281; Toshinori Uetani, unpublished D.E.A. thesis, November 1993, Centre d'Études Supérieures de la Renaissance de Tours, 11 and notes.

65. In 1640 Jean III de Tournes was named official printer to the Republic and to the Academy of Geneva (*Reipublicae et Academiae Typographus*). See Carpo, *La maschera e il modello*, 101, note 44.

66. The transition from traditional, geometry-based proportional systems (medieval but also Vitruvian and Serlian) to the new arithmetic and modular system inaugurated by Vignola was one of the chief obstacles to the diffusion of the modern method of the five architectural orders in France—as well as in other North-European countries. Despite the precedent of Philibert de l'Orme, who used both geometric proportions and modular calculations in his books on the orders (books V–VII in *Premier Tome*, 1567), the arithmetic system seems to have spread in France thanks only to the French translations of Vignola and Palladio, which are relatively late; some French manuals on the orders written contemporarily to Philibert's or not long after, respond above all to the need for a *non-arithmetic* proportional system that could be associated with the morphology of the modern system of the orders. This project is particularly transparent in the manual of Jean Bullant, which was singular for a variety of reasons: *Reigle generale d'architecture des cinq manieres de colonnes, à savoir, Tuscane, Dorique, Ionique, Corinthe, e Composite: et enrichi de plusieurs autres, à l'exemple de l'antique* [. . .], *au proffit de tous ouvriers besognans au compas et à l'esquerre. A Escouën par Iehan Bullant* (Paris: Hierosme de Marnef e Guillaume Cavellat, 1564); second edition [. . .], *veu, recorrigé et augmenté par l'auteur de cinq autres ordres de colonnes suivant les reigles et doctrine de Vitruve* (Paris: de Marnef et Cavellat, 1568); third edition (Rouen: D. Ferrand, 1647). Bullant explains in the preface that his aim is to "reduire les cinq manières de colonnes [. . .] selon la doctrine dudict Vitruve" (reduce the five styles of column according to the Vitruvian doctrine), in such a way that "le seul compas suffira pour en donner raison et intelligence aux ouvriers. Et [. . .] ceux qui ont pratique du compas, n'auront besoin d'autre lecture" (a pair of compasses alone will suffice to give knowledge and intelligence of them to the workers. And those who use compasses will have no need of further reading), from "Iehan Bullant, studieus d'architecture, aux lecteurs salut," in *Reigle generale* (1564). The preface is dated from Ecouen, 1564.

Bullant's text is a patchwork of citations from Vitruvius and Alberti, in the French translations of Martin, and has no relationship to the illustrations. A French translation of Vignola was published in 1631 by Pierre Le Muet: *Reigle des cinq ordres d'architecture de Vignolle, Reveues augmentees et reduittes de grand en petit, par Le Muet* (Paris: Melchior Tavernier, 1631). Le Muet also carried out a partial translation of Palladio: *Traicté des cinq ordres d'architecture desquels se sont servi les anciens, traduits de Palladio* (Paris, 1645). The *Quattro Libri* (*Four Books*) of Palladio were translated into French in 1650 by Roland Fréart de Chambrai, author of the

celebrated *Parallèle de l'architecture antique avec la moderne* (1650). On Bullant, see Yves Pauwels, "Jean Bullant et le langage des ordres: les audaces d'un timide," *Gazette des Beaux-Arts* CXXIX (February 1997), 85–100.

In Italy as well, the geometric tradition and the modular system continued for some decades to exist in opposition—and in some cases to overlap: as late as 1641, Milanese author Carlo Cesare Osio defended a simplified method for constructing the orders "per via di soli angoli [. . .] senza divisioni aritmetiche, e senza moduli" (through angles alone, without arithmetic divisions and without modules): Carlo Cesare Osio, *Architettura civile demostrativamente proportionata et accresciuta di nuove regole con l'uso delle quali si facilita l'invenzione d'ogni dovuta proporzione nelli cinque ordini, e col ritrovamento di un nuovo strumento angolare* [. . .] (Milano, 1641; reprint Milan: Stampa Archiepiscopale, 1661), 85. Even the "archisesto" (a sort of pantograph) invented by the architect Ottavio Revesi Bruti of Vicenza addressed the same goal, namely, to draw the orders respecting their proportions but without recourse to any arithmetic calculations; *Archisesto per formare con facilità li cinque ordini d'architettura* [. . .] *del Signor Ottavio Revesi Bruti Gentilhuomo vicentino* (Vicenza, undated [but 1627]). See also chapter three, note 33; chapter six, note 16; and the following note.

67. Julien Mauclerc, *Le Premier Livre d'Architecture de Julien Mauclerc, Gentilhomme Poitevin* [. . .] *Traictant tant l'ordre Tuscanique, Doricque, Ionique, Corinthe, que Composite* (La Rochelle, 1600); second edition, *Traitte de l'architecture suivant Vitruve, ou il est traitté des cinq ordres de colomnes* [. . .], *desseignez par Maistre Iulien Mauclerc, sieur du Ligneron-Mauclerc* [etc.] (Paris: Nicolas Berey, 1648). Even Mauclerc's plates continue to illustrate a geometric method (divisive) for establishing the proportions of the orders. Hans Blum, *Quinque columnarum exacta descriptio atque delineatio, cum symmetrica earum distributione, conscripta per Ioannem Blum et nunc primum publicata.* [. . .] (Zurich: Christoph Froschauer, 1550). German translation, *Von den fünff Sülen, Gründlicher Bericht, und deren eigenetlich contrafeyung, nach Symmetrischer aussteilung der Architectur.* [. . .] (Zurich: Froschauer, 1555). For the numerous editions and translations of Blum, see Ernst von May, *Hans Blum von Lohr am Main. Ein Bautheoretiker der deutschen Renaissance* (Strasbourg: Heitz und Mündel, 1910), 76–83. A sysnopsis of this bibliography is found in David Thomson's note in *Architectural Theory and Practice from Alberti to Ledoux*, ed. Dora Wiebenson (Chicago: University of Chicago Press, 1982), III-A-3. Thomson cites two French translations of Blum printed in Lyons (1562 and 1648). A French translation of Blum was printed in Amsterdam in 1623; another

(no location) in 1648–1649. Blum seems also to have published another manual on the orders under a slightly different title: *Ein kunstrych Buch von allerley Antiquiteten, so zum Verstand der fünff Seulen der Architechtur gehörend* (Zurich: Froschower [Froschauer], undated). The name of the author does not appear on the title page but in the introduction (2). According to von May (82), this must be a parallel edition to the better known *Von den fünff Sülen*, printed by Froschauer probably between 1550 and 1560, and reprinted in Zurich in 1596, 1627, 1667.

68. Abraham Bosse, *Traité des manières de dessiner les ordres de l'architecture antique en toutes leurs parties* [. . .] (Paris: A. Bosse, 1664) (the title appears in an abbreviated form on the illustrated title page).

69. Bosse, *Traité des manières de graver en taille-douce* (Paris: A. Bosse, 1645); see William M. Ivins Jr., *Prints and Visual Communication* (Cambridge, MA: Harvard University Press, 1953, 16.

70. See the comments of Eisenstein, *The Printing Revolution*, 271: "When we consider Protestant iconoclasm or increased Bible reading, it may be useful to envisage a movement going 'from image to word'; but one must be prepared to use the reverse formula 'word to image' when setting the stage for the rise of modern science." According to this interpretation, two apparently opposed phenomena (the war on sacred images and at the same time the didactic, scientific, and technical use of mechanically reproduced images) would both be linked to the typographic culture of the Protestant Reformation. But in some cases Protestant iconoclasm also set up obstacles to the diffusion of scientific illustrations. Just a few years after the success of the printed illustrations of Otto Brunfels's herbal, the *Herbarum Vivae Eicones* (Strasbourg: Schott, 1530), Hieronimus Bock refused to illustrate the first edition of his botanical treatise, the *Kreüter Buch* (Strasbourg: Wendel Rihel, 1536). Some illustrations were added to the edition of 1546, but in his preface the author did not hide his reservations and perplexities about their use; in the Latin edition of 1552, with even more illustrations, a preface by Conrad Gesner praised Bock's descriptions, "so clear and expressive that no drawing could be more effective." In the preface to the Strasbourg edition of 1539, Bock had revealed the reasons behind his opposition to illustrations: the images might have come to replace the text, just as certain Christians, refusing to explain the Scriptures to the faithful, would have preferred to supplant the Word with images, the literature of the illiterate. On the contrary, in the preface to the 1542 edition of his herbal, Leonhart Fuchs presented a panegyric of the scientific image: *De historia stirpium commentarii insignes* (Basle, 1542; reprint Paris, 1543, etc.). But some years before, in a comment about the

scientific writings of this same Fuchs, the doctor Sébastien de Monteux had once again evoked the ancient topoi against the use of deceitful images: "Picturae simplicium medicamentorum sunt fallaces," *Annotatiunculae* [. . .] (Lyons, 1553), annotations 4, 7, ff. iii, v.

On the origin of these arguments in Pliny and Galen, see above, chapter two, note 18. On the illustration of Renaissance herbals, see Karen Meier Reeds, "Renaissance Humanism and Botany," in *Annals of Science* 33, no. 6 (November 1976): 519–543, especially 528–533 (with a complete bibliography of the sources). For a more general discussion, see Ackermann, "Early Renaissance 'Naturalism' and Scientific Illustration," in *The Natural Sciences and the Arts*, Acta Universitatis Upsaliensis, n.s., 22 (Upsala, 1985); republished in Ackerman, *Distance Points: Essays in Theory and Renaissance Art and Architecture* (Cambridge, MA: The MIT Press, 1991), 185–210. It seems that at first Brunfels himself had opposed illustrating his herbal (1530). He was persuaded only by his publisher's insistence, and later complained that the "dead lines" would distract his readers, to the detriment of the text (Ackerman). See also C. Nissen, *Die botanische Buchillustration. Ihre Geschichte und Bibliographie* (Stuttgart: Hiersemann, 1951), especially on Brunfels, I, 39–40.

71. Ryff (Riff, Rivius) appended to the Vitruvian text a sort of illustrated digression, without commentary but with *excerpta* of the Serlian orders, from the *Fourth Book* of 1537: *M. Vitruvii, viri suae professionis peritissimi, de Architectura Libri decem* [. . .] *nunc primum in Germania qua potuit diligentia excusi, atque hinc inde schematibus non iniucundis exornati* [. . .]. *Per Gualtherium H. Ryff Argentinum Medicum. Adiecimus etiam propter argumenti conformitatem, Sexti Julii Frontini De Aquaeductibus Urbis Romae libellum, item ex libro Nicolai Cusani Card. De Staticis Experimentis, fragmentum* (Strasbourg: In officina Knoblochiana per Georgium Machaeropioeum, 1543), 96–100. See my fig. 5.4. According to Oechslin, this edition was released with two different title pages; in one of these, perhaps the later, the mention of *Per Gualtherium H. Ryff Argentinum Medicum* on the title place was replaced by an asterisk. See Werner Oechslin, "'Vitruvianismus' in Deutschland," in *Architekt und Ingenieur. Baumeister in Krieg und Frieden* (Wolfenbüttel: Herzog August Bibliothek, 1984), 53–76, especially 62, plate 34 (with bibliography).

72. "Ioannes Andreas Dossena studiosiis," (undated) in Philandrier, *Annotations* (1544), preface.

73. Philandrier, *Annotations* (1544), preface. On the editions of the *Annotations* of Philandrier, see above, chapter four, note 38. Philandrier revised, corrected, and expanded his text for the Lyons edition of 1552, where for

the second time the *Annotations* were published together with an edition of the *De architectura*, but it seems that Philandrier was never involved in editing the Vitruvian text; Lemerle-Pauwels, "Architecture et humanisme," 22–28.

74. The first edition of the *German Vitruvius* was published in Nuremberg in 1548. The compendium on architecture was first published in the same city in 1547. [Rivius, Ryff, Riff], *Vitruvius Teutsch* [. . .] *Allen Künstlichen Handtwerkern, Werckmeistern, Steinmetzen, Bawmeistern, Zeug und Büxenmeistern, Brunnenleyteren, Berckwerkkern, Malern, Bildhavern, Goltschmiden, Schreineren, und allen denen welche sich des Zirckels un Richtscheids künstlichen gebrauchen* [. . .] *Erstmal verteutsch Durch D. Gualtherum H. [Hermanium] Rivium* (Nuremberg: Johan Petreius, 1548; reprint Basle: Sebastian Henricpetri, 1575 and 1614).

75. [Rivius, Ryff, Riff], *Der furnembsten notwendigsten der gantzen Architektur angehörigen Mathematischen und Mechanischen künst eygentlicher Bericht und vast klare verstendliche Unterrichtung zu rechtem Verstandt der lehr Vitruvij in drey furneme Bücher abgetheilet* [. . .] (Nuremberg; Johan Petreius, 1547; reprint Gabriel Heyn, 1558; Basle: Henricpetri, 1572 and 1585). See Oechslin, "'Vitruvianismus' in Deutschland," 69 (and bibliography).

76. *Seb. Serlii. Von der Architectur. Fünff Bücher* [. . .] *Jetzundt zum ersten auss dem Italiänischen und Niederländischen* [. . .] *in die gemeine hochteutsche Sprache* [. . .] *übergesetzt* (Basle: Ludwig König, 1608–1609).

77. Preface to *Seb. Serlii. Von der Architectur:* "Neben dahin dir zu wissen/ Das der Author sich sehr beflissen/ Des Vitruvi viel tunckle ort/ Vill Text und corrumpierte Wort/ In schöne richtigkeit zubringen/ Und mit vieln umbs Kräntzlin zringt/ Also das jetz Vitruvi lehr/ Kein irrung hat noch tunckle mehr." See Oechslin, "'Vitruviamismus' in Deutschland," 57 and note 28. Serlio's *Fourth Book* had already been translated into German by Coecke van Aelst in Antwerp (1542 and 1558); see John Bernard Bury, "Serlio: Some Bibliographical Notes," in *Sebastiano Serlio*, 100.

78. Serlio, *Regole generali di architetura sopra le cinque maniere degli edifici, cio e thoscano, dorico, ionico, corinthio et composito, con gli essempi dell'antiquita, che, per la magior parte concordano con la dottrina di Vitruvio* (Venice: F. Marcolini da Forlì, 1537).

79. Blum, *Quinque columnarum exacta descriptio* and *Von den fünff Seulen.*

80. Bernard Palissy, *Recepte véritable, par laquelle tous les hommes de France pourront apprendre à multiplier et augmenter leurs thrésors: item ceulx qui n'ont jamais eu cognoissance des lettres, pourront apprendre une philosophie nécessaire à tous les habitants de la terre: item en ce livre est contenu le dessein d'un jardin* [. . .] *le dessein et ordonnance d'une ville de forteresse* (La Rochelle:

Barthélemy Berton, 1563 and 1564); reprints: Bernard Palissy, *Oeuvres, publiées d'après les textes originaux* [. . .] *par Anatole France* (Paris, 1880), 85, 145; Bernard Palissy, *Recette Véritable*, ed. Frank Lestringant and Christian Barataud (Paris: Macula, 1996), 143, 187, 225 (with notes and commentary).

81. *M. Vitruvii Pollionis De Architectura libri decem, cum notis* [. . .] *Guglielmi Philandri integris, Danielis Barbari excerptis, et Claudii Salmasii passim insertis. Praemittuntur Elementa Architecturae Collecta ab illustri viro Henrico Wottono Equite anglo. Accedunt Lexicon Vitruvianum Bernardini Baldis urbinatis* [. . .] *et eiusdem Scamilli Impares vitruviani; De Pictura Libri Tres absolutissimi Leonis Baptistae de Albertis; De Sculptura excerpta maxime animadvertenda ex dialogo Pomponi Gaurici neapolitani; Ludovici Demontiosii Commentarius de Sculptura et Pictura, cum variis indicibus* [. . .] *Omnia* [. . .] *collecta a Joanne de Laet Antwerpiano* (Amsterdam: Ludovicus Elzevirius, 1549). See Georg Germann, "Vitruv Heute," in *Vitruviuscongres: Heerlen, 13, 14, 15 Oktober 1995; Mastricht, 25 Oktober 1995*, ed. Rudi Rolf (Heerlen: Vitruvianum, 1997), 14.

82. A discussion of the meanings and uses of the term "order" in Renaissance architectural literature is found in Christof Thoenes and Hubertus Günther, "Gli ordini architettonici. Rinascita o invenzione?" in *Roma e l'antico nell'arte e nella cultura del Cinquecento, atti del convegno, Roma, 19–30 ottobre 1982*, ed. Marcello Fagiolo (Rome: Istituto dell'Enciclopedia Italiana, 1985), 264–266.

83. See Carpo, *La maschera e il modello*, 61 and note 101.

84. For a synopsis of the Vitruvian editions from the start of the wars of religion to the end of "militant" Vitruvianism (whose exact dates vary depending on opinion), see Marcucci, "Duemila anni di Vitruvio"; Ebhardt, *Vitruvius*. On the "decline of Vitruvianism" in the eighteenth century, see Germann, *Einführung in die Geschichte der Architektutheorie* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1980), chapter six, "Abbau des Vitruvianismus," 195 (and bibliography). For anti-Vitruvian and anti-Serlian reactions in Counter-Reformation architectural theory see below, chapter six, section II.

85. We have no precise information on Claude Perrault's faith, "l'influence du jansenisme sur les [frères] Perrault est pourtant indeniable," Antoine Picon, "Un moderne paradoxal," in Charles Perrault, *Mémoires de ma vie*, [circa 1702] (Paris: Macula, 1993), 18 (with bibliography).

86. Claude Perrault, *Ordonnance des cinq espèces de colonnes selon la méthode des anciens* (Paris: Jean Baptiste Coignard, 1683).

87. Giuseppe Leoncini, *Istruzioni architettoniche pratiche concernenti le parti principali degli edificij delle case, secondo la dottrina di Vetruvio, e d'altri classici autori. Compendiate da Giuseppe Leoncini, cittadin fiorentino, a prò delli studenti d'architettura* (Rome: Matteo Gregorio Rossi, 1679), 55. Leoncini explains that his rule of the orders is compatible with Vignola's: "le di cui misure si sono ridotte in Tariffa, per commodo degli studenti, acciò così epilogate siano più facili a ritenersi nella memoria." But Leoncini overestimated the good will of his students, who in most cases, instead of memorizing the "tariff" of the orders probably just looked up the numbers on it from time to time: Leoncini's book was the equivalent of a pocket manual.

88. The Vitruvian compendium of Gardet and Bertin: *Epitome ou Extrait abrégé des dix livres d'Architecture de Marc Vitruve Pollion. Enrichi de figures [. . .]. Par Jean Gardet Bourbonnois et Domique Bertin Parisien* (Toulouse: Guion Boudeville, 1559; reprint Paris, 1565, etc.), deals only with the first three books of the *De Architectura;* the *Raisons d'Architecture Antique, extraicte de Vitruve* [. . .] (Paris: Simon de Colines [undated but probably between 1526 and 1537]), an anonymous and free translation of the Spanish original of Diego de Sagredo, *Medidas del Romano* (Toledo, 1526) was reprinted in Paris in 1539, 1542, 1550, 1555, and again in 1608, but this pre-Serlian manual on the orders is not truly a Vitruvian compendium (nor even a true manual on the orders). For the editions of the Gardet-Bertin compendium and for the French translation of Sagredo, see Marcucci, Duemila anni di Vitruvio" and Ebhardt, *Vitruvius.* See also the sources cited above in notes 66–68.

Chapter 6

1. On the dating and editions of Shute's treatise, see *The first and chief groundes of architecture, by John Shute* [. . .] *a facsimile of the first edition with an introduction by Lawrence Weaver* (London: Country Life, 1912); and Maurice Howard, "John Shute," in *Architectural Theory and Practice from Alberti to Ledoux*, ed. Dora Wiebenson (Chicago: University of Chicago Press, 1982), III-A-7. The copy reproduced by Weaver is the one owned by the Library of the Royal Institute of British Architects in London. This copy features five large plates of the orders, of which four (the Tuscan, Doric, Ionic, and Corinthian) are engraved on copper and printed in brown ink. Only the plate of the Composite order, the one reproduced here in fig. 6.1, is printed from a woodblock. The book also contains several smaller woodcuts printed with the text (Weaver, 17).

2. *The first and chief croundes of architecture, used in all the auncient and famous monymentes, with a farther and more ample discouse uppon the same, than hitherto hath been set out by any other. Published by Iohn Shute, Paynter and Archytecte, Imprinted* [. . .] *by Thomas Marshe* [. . .] (1563). In the preface, the author writes that he has presented

the thinge nothing garnished as it ought to be, but most briefly and playnelye with suche demonstrations that it might edifie them which of a long time have desired and reached at it to attaine. [. . .] Intending to write of Architecture or buildinges: I thought it best neither with lightest or least profitable parte thereof to beginne, nor altogither after the moste slender sorte to handell that which I purposed to intreate upon. I have therefore taken my first enterance into the writing of this arte, at the five antique pillers or Columnes, commonly named [. . .] Tuscana, Dorica, Ionica, Corinthia, and Composita. [. . .] The treatise of these pillers [. . .] is both so necessary and profitable, that neither without it any man may attaine to any estimable part of the reste of this science, and with it *as by a klew of thred or plaine path way a man may most eassily pearse and lightely pasover the most darke and unknowen corners of the whole processe thereof.* [. . .] Now for examples which are necessarily required to the opening of such darke matters, I have everywhere through the whole procese of this present treatise after the preceptes to the lightning of them sette *both demonstration and figure;* and as for practice and experience of these thinges whiche I teache, I assure the most gentle reader and all other that shalbe readers of this my little worke that I have put notitle ["no little"] in any part thereof concerning proportion and simetry to use the accustomed terme of the arte of the fornamed columbes, [. . .] that I might with so muche more perfection write of them as *both the reading of the thinge and seinge it in dede is more then onely bare reding of it.* (Preface, ff. Aiii–Aiii*v*; emphasis mine)

The topos of the primacy of the exemplum and of the image returns at the close of the treatise, where the author repeats that he has presented

divers orders of measures and examples that the Antiques alwayes used in their times, which *shoulde be tedious for the hearer, and to long for the reader,* having no figures out of whiche springeth both desire and also encouragement to the same. Thus ending this treatie of the Introduction and measures of *these sayd pillers, whiche are the original first grounds and entring into this noble science of Architecture* [. . .] the elegance thereof, of all antiquitie hat bene, and yet presently is a parfaïcte example and a myrroure to behold, lerne and take trewe measures. [. . .] (Preface, f. ij *v*; emphasis mine)

3. See Neal W. Gilbert, *Renaissance Concepts of Method* (New York: Columbia University Press, 1960); Walter J. Ong, *Ramus: Method and the Decay of Dialogue, from the Art of Discourse to the Art of Reason* (Cambridge, MA: Harvard University Press, 1958); and my *Metodo e ordini della teoria architettonica dei primi moderni. Alberti, Raffaello, Serlio e Camillo*, Bibliothèque d'Humanisme et Renaissance, CCLXXI (Geneva: Droz, 1993), chapter V, 47–65 (and bibliography).

4. *Regola delli cinque ordini d'architettura di M. Iacopo Barozzio da Vignola* [not dated but probably published first in 1562]. On the problem of the dating of the individual images that make up the *Regola*, see Christof Thoenes, "La *Regola delli cinque ordini* del Vignola," in *Les traités d'architecture de la Renaissance: Actes du colloque tenu à Tours du 1ᵉʳ au 11 juillet 1981*, ed. Jean Guillaume (Paris: Picard, 1988), 269 (and bibliography). According to Thoenes, the *editio princeps* of Vignola's treatise comprised 32 plates and did not include the synoptic table of the five orders (see note 13 below). Thoenes's recent studies have shown that Vignola's "rule of the five orders" was a proportional norm superimposed onto various models of columns and entablatures; see his "Vignolas *Regola delli cinque ordini*," *Romisches Jahrbuch für Kunstgeschichte* XX (1983): 345–376.

5. Thoenes, "Vignolas *Regola*," 352:

"Regola" bezeichnet im Cinquecento ganz allgemein eine Verfahrens-, speziell eine Konstruktionsregel, vor allem wenn sie in numerischen Relationen ausgedrückt werden kann. In diesem Sinne bedeutet "formare regola," "trarne regola" etc. [. . . in Vignola] die Aufstellung eines Proportionskanons, aufgrund dessen der betreffende Bauteil nachkonstruiert werden kann. Es geht also weder um "Reglementierung" noch um "Ordnung" der Architektur, sondern lediglich um ein Verfahren zur korrekten Proportionierung der fünf Säulenarten.

Even Serlio's notion of a "rule," "general rule," and "reduction to a rule," refers in most cases to the translation of an object's actual dimensions into a set of proportions; see my *Metodo e ordini*, 110 (and bibliography).

6. Vignola, *Regola* [1562?], preface "ai lettori," plate III; *Regola delli cinque ordini d'architettura di M. Iacopo Barozzio da Vignola. Libro primo, et originale* (Rome: Andreas Vaccarius, 1607), plate II:

ho presa questa fatica più anni sono di ridurre sotto una breve regola facile, et spedita da potersene valere li cinque ordini di architettura detti [. . .], cavandogli puramente dagli antichi tutti insieme, ne vi mescolando cosa di mio se non la

distributione delle proportioni fondata in numeri semplici senza havere a fare con braccia, ne piedi, ne palmi di qual si voglia luogo, ma solo ad una misura arbitraria detta modulo divisa in quelle parti che ad ordine per ordine al suo luogo si potrà vedere, et data tal facilità à questa parte d'Architettura altrimenti difficile ch'ogni mediocre ingegno, purche habbi alquanto di gusto dell'arte; potrà in un'occhiata sola senza gran fastidio di leggere comprendere il tutto, et opportunamente servirsene.

Translated into English by Richard J. Tuttle:

I undertook this task many years ago, namely to reduce the said five Orders of architecture to a concise and quick rule which was easy to use, [. . .] extracting only from ancient works and adding nothing of my own save the distribution of their proportions which were based on simple numbers, using not the *braccia*, or feet, or palms of whatever locality, but an arbitrary measurement called the module, divided into those parts which will be seen from Order to Order in the appropriate place. And I have made an otherwise difficult part of architecture so easy that every ordinary talent, provided he has some enthusiasm for this art, can at a glance and without much bothersome reading, understand the whole and make use of it at opportune moments.

Appendix 2 in *Paper Palaces: The Rise of the Renaissance Architectural Treatise*, ed. Vaughan Hart with Peter Hicks (New Haven: Yale University Press, 1998), 361–362; another English version is in *Giacomo Barozzi da Vignola, Canon of the Five Orders of Architecture*, trans. Branko Mitrovic (New York: Acanthus Press, 1999), plates 1–2.

7. Except for the tradition of Vitruvius's optical corrections, to which Vignola refers in the last lines of the preface: "a questo gli rispondo, in questo caso essere in ogni modo necessario sapere quanto si vuole che appaia all'occhio nostro, il che sarà sempre la regola ferma che altri si haverà proposta di osservare; poi in ciò si procede per certe belle regole di Prespettiva [. . .]," Vignola, *Regola* [1562?], "ai lettori," plate III; (1607), plate II.

8. See previous note.

9. See note 6 of this chapter.

10. Vignola, *Regola* (1607), plate VII:

[. . .] avvertendo ancora che in tutti li cinque ordini per regola generale ho osservato li piedistalli con tutti li suoi ornamenti dover essere la terza parte della sua colonna con la base et capitello si come tutto l'ornamento di sopra ciò è architrave

fregio et cornice ha da essere la quarta parte. Dalla quale intelligenza et presupposto ne nasce questa gran facilità nell'operare che havendo a fare qualsivoglia di questi cinque ordini dopo che s'habbi terminato l'altezza che deve havere, questa si divide in diciannove parti con i suoi ornamenti. Di novo poi si piglia l'altezza della colonna con la base et capitello et si fa divisione dei suoi moduli secondo che serà o Corinzia o Dorica over d'altro ordine et poi con questo modulo diviso nelle sue parti secondo si vede alli suoi luoghi si fabrica il tutto.

11. It was a rule "ideata [. . .] come una serie di tavole logaritmiche proporzionali," Thoenes, "La *Regola delli cinque ordini* del Vignola," 275.
12. As the author himself explains in an appendix to the preface; Vignola, *Regola* [1562?], "ai lettori," plate III; (1607), plate II.
13. According to Thoenes, the famous plate summarizing the five orders (see fig. 6.2), numbered in most editions as the third plate, was absent from the first printing of the treatise. It was probably added in a pirated copy printed soon after the original. Its absence from the first edition was no accident. This table, which, *serliano more*, presents a visual epitome of the standardization of the orders, has nothing to do with the author's original intentions and is instead "nettamente contraria a quanto il Vignola voleva insegnare, cioè la regola [geometric and proportional] dei cinque ordini," Thoenes, "La *Regola delli cinque ordini* del Vignola," 270. See also his "Vignolas *Regola*," 358–360.

    Maria Walcher Casotti argues that Vignola himself added the table in an edition of 1572; see her introduction to Vignola, *Regola*, in Pietro Cataneo, Giacomo Barozzi da Vignola, *Trattati, con l'aggiunta degli scritti d'architettura di Alvise Cornaro, Francesco Giorgi, Claudio Tolomei, Giangiorgio Trissino, Giorgio Vasari* (Milan: Il Polifilo, 1985), 499 and following. See also Richard J. Tuttle's review of that work in *Journal of the Society of Architectural Historians* LI (1992): 98 ("the image of the five columns fails to summarize Vignola's single and comprehensive rule for the orders [. . .]. Derived from Serlio's woodcut on the same subject, the plate offers a selection of models rather than a demonstration of principles.") As far as one can tell, this image of the orders was first included as plate III in a reprint edition without any indication of date or place of publication. The title page declares this edition to be the "libro primo et originale" (although this edition in 37 plates was neither the first nor the original). See the two copies in the collections of the Bibliothèque Nationale, Paris (Rés. V.354 and V.355); the first, *Regola delli cinque ordini d'architettura di M. Iacopo Barozzio da Vignola*, comprises 32 numbered plates, including the title page, in addition to five unnumbered plates; the second, with the

same title except for the addition of the phrase "libro primo, et originale," is made up of 36 numbered plates plus the title page, includes the table of the orders (plate III), but omits the portal of the Palazzo Farnese at Caprarola.

14. See Thoenes, "La *Regola delli cinque ordini* del Vignola," 272: Vignola's "rule," "non si trova nelle figure, ma esclusivamente nei numeri in esse inscritti; oppure, le tavole non sono state fatte per essere copiate nei loro particolari (come poi diventò abitudine fra gli scolari d'architettura per quasi quattro secoli) ma per esser lette come schemi di distribuzione proporzionale." Even Vignola's rule, Thoenes concludes, "lasciava all'architetto creativo tutta la libertà di cui aveva bisogno." Vignola himself offers two different models of the Doric, which ought to "incoraggiare il lettore a sperimentare altre forme nuove e sorprendenti."

15. On the variations in the title page, see Thoenes, "La *Regola delli cinque ordini* del Vignola," 277.

16. Just a few years after Vignola, Palladio introduced in 1570 a system of sexagesimal modular calculations that was more precise but trickier to use. For this reason, in addition to the sexagesimal notations indicated in the illustrations (in minutes and fractions of minutes), Palladio also repeated verbally, in the accompanying text, the traditional method, based on a sequence of elementary geometric operations (the same that is found in Vitruvius, Alberti, and Serlio and that Vignola had abandoned). Obviously Palladio was not certain that all of his readers would be capable of carrying out the arithmetic calculations required by the sexagesimal scale; and for the architects or builders more comfortable with the use of compasses than with algorithms, the author proposed the two alternative methods. From a modern point of view, the proportions of the orders in Palladio's treatise can in fact be obtained by following three independent procedures: a sequence of geometric constructions itemized in the accompanying text (textual format); the graphic reconstruction of the proportions given in the scale drawings (visual format); and the arithmetical calculation of the proportions given in sexagesimal numeric notation (digital format). In many cases, the three results do not match up. Andrea Palladio, *Quattro Libri* (Venice: Francesco de' Franceschi, 1570). See Carpo, "Redefining Precision: Geometry, Numbers, and the Rise of the Modular System in the Sixteenth Century, from Serlio to Palladio," paper presented at the annual conference of the Society of Architectural Historians, Houston, 14–17 April 1999; revised version forthcoming. See also the present work, chapter three, note 33.

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17. *Bibliotheca Universalis, sive Catalogus omnium scriptorum locupletissimum, in tribus linguis, Latina, Graeca, et Hebraica: extantium et non extantium, veterum et recentiorum in hunc usque diem, doctorum et indoctorum, publicatorum et in Bibliothecis latentium* [. . .] *authore Conrado Gesnero Tigurino doctore medico* (Zurich: Christof Froschauer, 1545).

18. Josias Simler, preface to *Epitome Bibliothecae Conradi Gesneri, conscripta primum a Conrado Lycosthene Rubeaquensi, nunc denuo recognita et plus quam bis mille authorum accessione (qui omnes asterisco signati sunt) locupletata: per Iosiam Simlerum Tigurinum* (Zurich: Froschauer, 1555): "Legisse libros omnium qui scripserint, laboriosus est, longiusque seculo: paucos bonosque deligendos censeo. Tu iudicato qui boni sint, aut mali. Omnes tibi bonos malosque protulit Gesnerus in sua Libraria. [. . .]"

19. See J. M. de Bujanda, *Index des livres interdits*, vol. VIII: *1557, 1559, 1664, les premiers Index de Rome et l'Index du Concile de Trente* (Sherbrooke, Canada and Geneva: Editions de l'Université de Sherbrooke and Librairie Droz, 1990), 396; A. Moreni, "La *Bibliotheca Universalis* di Conrad Gesner e gli Indici dei libri proibiti," *La Bibliofilia* (1986): 131–150.

20. *Pandectarum sive partitionum universalium Conradi Gesneri Tigurini, medici et philosophiae professoris, libri XXI* (Zurich: Froschauer, 1548–1549).

21. Gesner, *Pandectae*, vol. II (1549), 154: "Tabula quae brevissime ob oculos ponit ordinem et methodum partitionum theologicarum."

22. Elaborated most notably by Sturm and Melanchthon in the years between 1528 and 1539, the modern notion of a divisive method, visually expressed through arborescent diagrams, was consecrated in 1546 in a (pseudonymous) edition of Pierre de la Ramée's *Dialecticae Institutiones*. See Ong, *Ramus*; Cesare Vasoli, *La dialettica e la retorica dell'Umanesimo. "Invenzione" e "metodo" nella cultura del XV e XVI secolo*, I fatti e le idee; saggi e biografie, 174 (Milan: Feltrinelli, 1968); Carpo, *Metodo e ordini*, 57–58 (and bibliography).

23. Gesner, *Pandectae*, vol. I (1548), 79, book VI, "De Geometria": "De pictura et architectura liberalibus sane artibus et quae plurimum a Geometria mutuentur, in libro de mechanicis et vulgaribus artibus dicetur: non quod hae eiusmodi sint, sed quia ab indoctis fere magis quam studiosis hodie exercentur."

24. Gesner, *Pandectae*, 165, book XIII, "De diversis artibus, Mechanicis et aliis humanae vitae utilibus":

1., De artibus illitteratis et mechanicis in genere; 2., De architectura et subservientibus ei, et materia aedificiorum: et aedificiis urbium, et locorum publicorum,

etc., et structuris simplicibus, ut sunt columnae, obelisci, pyramides, etc. Item de imaginibus, simulachris, et statuis; 3., De domibus, earum partibus, etc. [. . .]

25. Gesner, *Pandectae*, 167:

Vocam autem illas illiberales, quoniam nom propter se ut superiores, sed quaestus gratia ab hominibus expetuntur et exercent; et pleraeque earum laboriosae sunt, ut corpus fatigent [. . .] aut sordidis etiam operibus tractandis inquinent: ideoque etiam mercenariae, serviles, sordidae, manuariae, sedentariae, sellulariae, et a Grecis mechanicae quasi machinales et banausi appellantur. [. . .]

26. Gesner, *Pandectae*, 167: "Pictoriam artem veteres ab ingenuibus [artibus] non excluserunt, et pueros etiam ingenuos in ea exerceri volebant; nos quia hodie in minore apud nos praetio est, reliquis illitteratis ea adiunximus."

27. Gesner, *Pandectae*, vol. II (1549), 156, chapter 20.8.5.b., "Picturae rerum et historiarum sacrarum in libris impressis."

28. Gesner, *Bibliotheca* (1545), s.v. "Marcus Vitruvius." See the present work, chapter five, note 72.

29. Gesner, *Bibliotheca*, s.v. "Marcus Vitruvius": "Ex Lod. Vivis lib. 3, de tradendis disciplinis: 'Vitruvius grecissat saepe, et est ad intelligendum cumprimis difficilis, ne cum picturis quidem Iucundi Veronensis, propterea quod aedificandi vetus illa ratio ex usu abijt: ut non iniuria de illo Budaeus dicat, Non cuiusvis esse hominis Corinthum adire.'"

30. Gesner, *Bibliotheca*, 168.

31. Gesner, *Bibliotheca*, s.v. "Baptista Leo Florentinus": "Albertus florentinus sub Nicolao V egregios de arch. libros conscripsit, ut testatur Aeneas Sylvius in descriptione Europae, cap. 58."

32. Gesner et al., *Epitome*. Aside from the epitome itself, which was expanded by more than two thousand titles, the edition of 1555 featured an "Appendix primi tomi bibliothecae Conradi Gesneri" (updated to include works that had appeared between 1545 and 1555).

33. Ryff (Rivius, Riff), [. . .] *Unterrichtung zu rechtem Verstandt der lehr Vitruvij* (1547); *Vitruvius Teutsch*, 1548; *Der fünff maniren der Colonnen* (Nuremberg: Petreius, 1547); see also Werner Oechslin, "'Vitruvianismus' in Deutschland," in *Architekt und Ingenieur. Baumeister in Krieg und Frieden* (Wolfenbüttel: Herzog August Bibliothek, 1984), 68, fig. 39 (and bibliography); and see the present work, chapter five, note 75.

34. Reference is to the first edition of Serlio, published in Venice (Marcolini, 1540): "pinguntur arcus, theatra, amphiteatra, pyramides, templa, etc," Gesner et al., *Epitome*, s.v. "Serlio."

35. "Alberti De Arch. opus, evulgatum est in Italia," Gesner et al., *Epitome*, s.v. "Alberti."

36. "Caesar Caesarinus quaedam de architectura scripsit," Gesner et al., *Epitome*, s.v. "Cesarinus."

37. Gesner, *Bibliotheca*, s.v. "Iulius Camillus." A final updated edition of the *Bibliotheca* was published in Zurich in 1583: *Bibliotheca Instituta et Collecta primum a Conrado Gesnero [. . .]. Iam vero postremo aliquot mille, cum priorum tum novorum authorum opusculis, ex instructissima Viennensi Austriae Imperatoria Bibliotheca amplificata, per Iohannes Iacobum Frisium Tigurinum* (Zurich: Froschauer, 1583). Among the additions were: Daniele Barbaro's *Commentaries* on Vitruvius (1567); the revised *Annotations* of Philandrier, an undated Lyonese edition; five books of Serlio translated into Latin in Venice in 1569 and the Frankfurt edition of the *Seventh Book* (1575); an undated *De architectura* printed in Strasbourg (1543? 1550?); Daniele Barbaro's Latin (1567) and Italian (undated) editions of the *De architectura*; the *German Vitruvius* of Ryff (undated); the *Quattro primi libri di Architettura* of Cataneo Senese (1554); *Le premier tome* of Philibert de l'Orme (1567); the *Premier Livre* of du Cerceau in Latin (1559) and French (1582). Conspicuously absent are Vasari, Palladio, Vignola, and also Shute, Vredeman de Vries, Coecke van Aelst, and all of the French translations of Jean Martin. Not long after, a more complete bibliography of architectural works in French appeared in Philibert Mareschal, Sieur de la Roche, *La guide des arts et sciences, et promptuaire de tous livres, tant composez que traduictz en François* (Paris: François Iaquin, 1598).

38. *Antonii Possevini Societatis Iesu Bibliotheca Selecta qua agitur de ratione studiorum in Historia, in Disciplinis, in salute omnium procuranda* (Rome: Tipografia Apostolica Vaticana, 1593); *pars secunda, qua agitur de ratione studiorum in Facultatibus, quae in pagina sequenti indicantur* (Rome: Tipografia Apostolica Vaticana, 1593).

39. Possevino, vol. II, libro XV, "De Mathematicis," 207–212: chapter 16, "Architecturae Origo"; chapter 17, "An aedificandi ratio peti debeat ex uno Vitruvio. Num item ex Salomonici Templi, quae olim existebat, structura"; chapter 18, "Architecturae partes, atque divisio: quaenam spectanda priusquam aedificia inchoentur."

40. Possevino, vol. II, 207: "Origo, methodus, pietas suo loco expetendae sunt; mox dispiciendum, num ex uno Vitruvio, et aedificiis antiquis, ac praesertim ex Basilicis sive ethnicis, sive item ex Salomonici templi structura petenda sit aedificandi ratio, quae sit omnium praestantissima"; vol. II, 208: "Ab Abrahamo, ad quem illae a posteris Adami pervenerant, edoctos fuisse Aegyptios, a quibus Graeci, inter quos fuere qui Architecturae

inventores sunt habiti, scientias atque cunctas artes accepisse"; vol. II, 209:

Ethnicis enim Deum fuisse impertitum veram aedificandi rationem, ex eo liquet, quod hanc [rationem] ad ipsa quoque sua, in quibus colitur, templa construenda, adhibitam fuisse, atque adhiberi identidem cernimus. [. . .] Neque item par ratio est mystici illius Templi, quod suo tempore erat abolendum, et cum ipso eius lapidis omnes evertendi; atque esse debet in nostri aedificiis, et templis. Iam quod attinet ad proportiones, pracepta, symmetriam, atque adeo ad universam Salomonici Templi structuram, ea intelligendis quidem Divinae Scripturae mysteriis commodare posset, struendo non item. [. . .] Atria illa, et porticus Iudaici templi erant distinctae pro varietate gentium, atque sacrificiorum, sacerdotum, et ceremoniarum, quae cuncta sublata sunt. Translato enim sacerdotio, translatio facta est legis, et illius Templi, ut ita dicam, architecturae. Ex quo certe Divinae Providentiae miraculum cernitur. Pantheon enim, ac Minerve, et aliorum fallacium Deorum templa Romae, et alibi stare voluit [Deus], eaque Beatissimae Virgini Matri, ceterisque caelitibus dicari: at Iudaici Templi ne vestigiorum quidem superesse permisit. Quin et Iudaei ter aggressi illud reedificare non potuerunt. Deo enim bellante superare impossibile est. Sed quid dico de Templo? Ipsam quoque civitatem numquam amplius conspici voluit, in qua illud ipsum fuerat Templum. [. . .] Ita Deus [. . .], cum eam Civitatem fecisset quasi nodum totius Religionis Iudaicae, ac mox eam subverterit, nonne pariter etiam universum eius Civitatis statum dissoluit?

41. Possevino, 208:

Architecti, aiebat hic [Giuseppe Valeriano] qui veram architecturam callent, non omnino ex Vitruvio, sed ex ratione, ex attenta observatione, et optimo veterum modo pendent. Nam etsi Vitruvius architecturam in unum corpus redegit, atque huius leges, atque praecepta egregie tradidit, quae quidem omnia fatetur ab Antiquis se accepisse, multa tamen putavit se docuisse, quae cum ad rem venitur, ed usum, nequaquam succedunt, ne quid dicam de incommodis et futilibus mensuris Capituli Corinthij, et basium omnium, atque coronarum, quas ille attulit. Sane quod peritissimi quique Architecturae asserunt id Graphidis defectu factum est. [. . .] In Basilica vero, quam Daniel Barbarus posuit, desiderant Architecti eximii multa: quae absolutiora fuissent, nisi mordicus Vitruvio adhaesisset, quem simul fuisse minus in inveniendo perspicacem Christiani plerique omnes recentiores Architecti agnoscunt. Quin et Leo ipse Baptista, qui de architectura scripsit, eundem Vitruvium saepe reprehendit pluribus locis.

42. See the present work, chapter 2, note 20.

43. Possevino, vol. II, book XV, 207: "[. . .] Inventa enim omnia, aut per af-flationem impertitus est Deus, suorum ministerio nunciorum, aut emerserunt quasi conclusiones ex propositionis notis. [. . .] Ita pictura ab icnographia, haec ab umbris; architectura a nativis specubus; ita omnis erutum est ex involucris suarum causarum."

44. Possevino, 208–209: "Addo, cum architectura non tam sita sit in quinque ordinibus, hetrusco, dorico, ionico, corinthio, latino, sive misto, quae ipsius architecturae sunt membra, quam in aliis sive principiis, sive iis, quae illam integre constituunt, inventione, eruditione, praeceptis, obser-vatione, vel usu: horum omnium quasi fons, atque directrix est gra-phis. [. . .]" Just a few years before, Saint Carlo Borromeo had voiced the same reservations about the use of the classical orders (in religious ar-chitecture): "Non vetatur tamen pro fabricae firmitudine, si ita architec-tonica ratio aliquando postulat, aliqua structura vel dorici, vel ionici, vel corinthii, vel alterius huiusmodi operis," Carlo Borromeo, *Instructiones Fabricae et Supellectilis Ecclesiasticae* (Milan, 1577), quoted in *Trattati d'arte del Cinquecento fra Manierismo e Controriforma*, ed. Paola Barocchi, vol. III (Bari: Laterza, 1962), 113. Cited and discussed in Maria Calì, *Da Mi-chelangelo all'Escorial. Momenti del dibattito religioso nell'arte del Cinquecento* (Turin: Einaudi, 1980), 20, 44, note 97.

45. Possevino, vol. II, 210, chapter XVIII: "Architecturae partes, atque divi-sio"; "[. . .] Ante omnia, typo, sive fabricae graphidi danda opera est. Ea vero vel ad icnographiam [. . .] vel ad ortographiam [. . .] vel ad sciographiam [. . .] quod Italice dicitur pianta, fronte, profilo."

46. Giovan Paolo Lomazzo, *Trattato dell'arte della pittura, diviso in VII libri* (Milano: P. G. Pontio, 1584), 407:

    questa dell'edificare non è opera se non di periti disegnatori, e che hanno pronte le mani a delineare, e a mostrare in figura quanto concepiscono nella sua idea di fare, opera insomma di Michelangeli, di Raffaelli, di Peruzzi [. . .] e non di certi ar-chitetti pratici intorno alle fabbriche, solamente per via di materia e discorso di fare, *senza alcuna invenzione loro*, dei quali è piena tutta l'Italia, mercé Sebastiano Serlio [. . .]. Veramente Sebastiano Serlio ha fatto più ammazzacani architetti che non aveva egli peli in barba." (Emphasis mine)

47. A portrait published in Torello Sarayna, *De origine et amplitudine Civitatis Veronae* (Verona: Antonio Putelleto, 1540), f. A Iv, has been considered a likeness of Serlio, of Torello Sarayna, or of Giovanni Caroto (who executed

the prints of antiquities of Verona published by Sarayna). See Bury, "Serlio: Some Bibliographical Notes," in *Sebastiano Serlio, sesto seminario internazionale di storia dell'architettura, Vicenza, 31 agosto–4 settembre 1987*, ed. Christof Thoenes (Milan: Electa, 1989), 95, fig. 6; Rosenfeld, "Recent Discoveries about Sebastiano Serlio's Life and His Publications," in *Serlio on Domestic Architecture* (Mineola, NY: Dover Paperback, 1996), 1, note 4, with an up-to-date bibliographic summary of this complex problem. A description of Serlio in the Latin edition of his treatise published in Venice (1568–69) does not say anything about a beard; see Bury, "Serlio," 100, appendix 2.

48. See Giorgio Simoncini, Sandro Orlando, *L'Architettura di Leon Battista Alberti nel commento di Pellegrino Tibaldi* (Rome: De Luca, 1988).

Chapter 7

1. André Leroi-Gourhan, *Milieu et techniques* (Paris: Albin Michel, 1943–1945; reprint 1991), 377.

2. Alberti, *La Cifra* [*De compondendis cifris*], in *Opuscoli morali di Leonbatista Alberti, [. . .] tradotti e parte corretti da M. Cosimo Bartoli* (Venice: Francesco Franceschi Sanese, 1568), 200. The Latin text of the *De cifris* is found in A. Meister, *Die Geheimschrift in Dienste der Papstlichen Kurie* (Paderborn, 1906), 125–141; the prologue is also published in Alberti, *Opera inedita et pauca separatim impressa, Hieronimo Mancini curante* (Florence: Sansoni, 1890). See the recent studies of J.-M. Mandosio and S. Matton and Matton's new critical edition of the text in *Leon Battista Alberti: Actes du Congrès International, Paris, 10–15 avril 1995*, ed. Francesco Furlan, Pierre Laurens, Sylvain Matton (Paris: Vrin, 2000, in press).

3. Politian's letter to Lorenzo de' Medici from the *editio princeps* of *Leonis Baptiste Alberti De Re Aedificatoria [. . .]* (Florence: Niccolò Lorenzo Alamanno, 1485).

4. Alberti addresses the copyist directly, recommending that numeric symbols not be used. Numbers should always be written out longhand, alphabetically, in order to reduce the risk of copy errors. *De re aedificatoria*, VII,VI,3 and VII,IX,3; *L'architettura [De re aedificatoria]*, trans. Giovanni Orlandi, 2 vols. (Milan: Il Polifilo, 1966), 564, 590; English translation in *On the Art of Building in Ten Books*, trans. Joseph Rykwert, Neil Leach, and Robert Tavernor (Cambridge, MA: The MIT Press, 1984; reprint 1994), 200–201, 211.

5. See Mario Carpo, *Metodo e ordini nella teoria architettonica dei primi moderni. Alberti, Raffaello, Serlio e Camillo*, Bibliothèque d'Humanisme et Renaissance, CCLXXI (Geneva: Droz, 1993), 13–24.

6. Mark Jarzombek, "The Structural Problematic of Leon Battista Alberti's *De Pictura*," *Renaissance Studies* IV (September 1990): 273.

7. Carpo, *Metodo e ordini*, 13–24. My interpretation of Alberti's "formalism" in the *De re aedificatoria* is based on the work of Françoise Choay; see her *La règle et le modèle. Sur la théorie de l'architecture et de l'urbanisme* (Paris: Seuil, 1980; reprint 1996), 30–40, 90–171; English translation, *The Rule and the Model: On the Theory of Architecture and Urbanism*, ed. Denise Bratton (Cambridge, MA: The MIT Press, 1997); "Le *De Re Aedificatoria* comme texte inaugural," in *Les traités d'architecture de la Renaissance: actes du colloque tenu à Tours du 1ᵉʳ au 11 juillet 1981*, ed. Jean Guillaume (Paris: Picard, 1988), 83–90.

8. The eighth book of the *De re aedificatoria* deals with secular public buildings; sacred public buildings are the subject of the seventh book, and private secular buildings are discussed in the ninth book.

9. See the present work, chapter 3, note 47.

10. Howard Burns attributed to Alberti a drawing of an ancient bath complex that Alberti mentions in a letter to Ludovico Gonzaga; see his "A Drawing by Leon Battista Alberti," *Architectural Design* 49, no. 5–6, "AD Profiles 21: Leon Battista Alberti" (1979): 54. Also attributed to Alberti is a supposed self-portrait in a manuscript of the *Profugiorum ab aerumna*; see Cecil Grayson, "A Portrait of Leon Battista Alberti," *Burlington Magazine* XCVI (June 1954): 177–178. In a letter to Ludovico Gonzaga, Alberti himself mentions a "model" for Sant'Andrea in Mantua, promising also to draw it to scale ("notarlo in proporzione"), should the marchese wish it; letter of October 20 or 22, 1470, in *Leon Battista Alberti*, exh. cat., ed. Joseph Rykwert and Anne Engel (Milan: Olivetti and Electa, 1994), 462, catalog entry 55, vii. In the famous letter to Matteo de' Pasti of November 18, 1454—a description or commentary on the project for the Tempio Malatestiano—Alberti drew between two lines of text a tiny corbel with two volutes; see *Leon Battista Alberti*, 456, catalog entry 54; Leon Battista Alberti, *Opere Volgari*, III, edited by Cecil Grayson (Bari: G. Laterza, 1973), 292.

Despite Alberti's interest in the theory and practice of painting (and particularly in the genre of self-portraiture, according to several of the contributors to the *Leon Battista Alberti* catalog mentioned above), we have no other proof of Alberti's drafting talents. Vasari attributes to Alberti a perspective drawing of San Marco in Venice (apparently a *veduta*) but adds that "le figure che vi sono, furono condotte da altri maestri" (the figures in it were added by other masters), and concludes that this is "una

delle migliori cose, che si veggia di sua pittura" (one of the best examples to be seen of his work)—remarks that seem to attest to, without praising, the existence of a pictorial work of Alberti. See Giorgio Vasari, *Le vite de' più eccellenti pittori, scultori e architettori*, vol. 1 (Florence: Torrentino, 1550), 376; *Le vite* [. . .], vol. 1 (Florence: Giunti, 1568), 370.

Another matter entirely is the question of the drawing that probably accompanied Alberti's *Descriptio Urbis Romae;* see Luigi Vagnetti, "Lo studio di Roma negli scritti albertiani," in *Convegno internazionale indetto nel V centenario di Leon Battista Alberti. Roma-Mantova-Firenze, 25–29 aprile 1972* (Rome: Accademia Nazionale dei Lincei, 1974), 73–110; Carpo, "*Descriptio Urbis Romae.* Ekphrasis geografica e cultura visuale all'alba della rivoluzione tipografica," *Albertiana* 1 (1998): 111–132 (and bibliography); Leon Battista Alberti, *Descriptio Urbis Romae*, critical edition and commentary by Martine Furno and Mario Carpo (Geneva: Droz, 2000). See below, notes 23–24.

11. Three bases (Doric, Ionic, Etruscan), four capitals (Doric, Ionic, Corinthian, Italic), three architraves (Doric, Ionic, Corinthian), seven regular moldings: *De re aedificatoria*, VII,VII–IX; *L'architettura*, 568–604; *On the Art of Building*, 202–218.

12. *De re aedificatoria*, VII,VI,2: "The columnar pattern comprises the following: the pedestal and, on top of that, the base; on the base the column, followed by the capital, then the beam, and on top of the beam, the rafters, their cut-off ends either terminated or concealed by the frieze; finally, at the very top comes of the cornice," *On the Art of Building*, 200.

13. In the first book (*De re aedificatoria*, I,X,2–3), Alberti introduces the definition of the *ordines columnarum:* "Columns may differ from one another, but we shall deal here with their similarities, with what constitutes their general characteristics; their differences, which determine individual variations, we shall deal with elsewhere," *On the Art of Building*, 25. In the seventh book (VII,VII,2), after having described the features common to the various orders (*columnationes*), Alberti finally describes "the lineaments of the parts that differ with each order," *On the Art of Building*, 202. Alberti's treatment of the differences between the orders as variants—or particular species—of the genus *columnatio* is purely Aristotelian. See my *Metodo e ordini*, chapter 2.2, "La teoria degli ordini nel *De re aedificatoria*," 24–29 (and bibliography).

14. Arthur M. Hind, *An Introduction to a History of Woodcut, With a Detailed Survey of Work Done in the Fifteenth Century*, 2 vols. (London: Constable and Co., 1935; reprint New York: Dover, 1963), 35, 194.

15. See the famous *Tapete von Sitten* (*Sion Printed Textile*) in the collections of the Historisches Museum, Basle, which was probably executed in northern Italy around 1400 (Hind, *History of Woodcut*, 67 and his fig. 30). It is not clear if the *Bois Protat* at Macon (also around 1400), which represents a Crucifixion and Annunciation, was intended for printing on paper or cloth (Hind, 70 and his fig. 32). The diffusion of rag paper seems to date from that same period, around the turn of the fifteenth century, a consequence, according to some, of the increasing use of linen in clothing manufacture (Hind, 79 and bibliography).

16. Cennino Cennini, *Il libro dell'Arte*, ed. Carlo and Gaetano Milanesi (Florence: Le Monnier, 1859), chapter 173, 138–140. See Hind, *History of Woodcut*, 4–6.

17. Hind, *History of Woodcut*, 108 (with a list of the first woodcuts printed on paper, starting in 1418). For woodcuts of devotional subjects printed before the invention of movable types, see Hind, 94–100. On block-books (incunables in which all pages were printed xylographically, including the texts, which were cut into the woodblocks), see Hind, 207–215. The printing of woodcuts predates by almost half a century Gutenberg's invention. It is possible that block-books were the very first printed books (although none of these xylographic incunables is dated, or datable, before 1455–1460). In some cases it is hard to distinguish between a series of independent woodcuts, each comprising texts and images, and a book composed of a number of these pages bound together (Hind, 214).

18. Paul Kristeller, *Kupferstich und Holzschnitt in vier Jahrhunderten* (Berlin: B. Cassirer, 1905; reprint 1922), 20–21. Cited and discussed in Hind, *History of Woodcut*, 80.

19. G. C. Bottari, *Raccolta di lettere sulla pittura, scultura ed architettura*, 6 vols., vol. 5 (Rome, 1754–1758), 320, letter 173 ("carte da zugar, e figure depente stampide" on "tella" or on "carta"); cited and discussed in Hind, *History of Woodcut*, 83.

20. Hind, *History of Woodcut*, 109–111 and his fig. 46.

21. *De re aedificatoria*, III,II,2; *L'architettura*, 176–177. *On the Art of Building*, 62. Passage cited and discussed in Choay, *The Rule and the Model*, 105.

22. *De re aedificatoria*, VI,VII,3; *On the Art of Building*, 167; *L'architettura*, 480–481: "Mercurium ferunt vel maxime ob hanc rem divinum habitum, quod nullo signo manus, sed solis verbis, quae diceret ita diceret, ut plane intelligeretur. Id ego etsi verear posse assequi, tamen pro viribus conabimur."

23. Alberti, *De statua*, Latin text and English translation in *On Painting and Sculpture*, ed. and trans. Cecil Grayson (London: Phaidon, 1972), chapter VIII, 128–130.

24. Carpo, "*Descriptio Urbis Romae.*"

25. The profile of an ovolo is obtained by superimposing the letters "L" and "C," a gullet by joining an "L" and an "S," and so on; *De re aedificatoria,* VII,VII,10; *L'architettura,* 574–575; *On the Art of Building,* 204–205. On the first page of the *Grammatichetta Vaticana* (or *Grammatica della lingua toscana*) Alberti proposes a new alphabetical ordering, based not on phonetic proximity but on the derivative evolution of the graphic signs; *Grammatichetta Vaticana,* first republished in Ciro Trabalza, *Storia della grammatica italiana* (Florence, 1908), 531–548; then in Leon Battista Alberti, *La prima grammatica della lingua volgare. La grammatichetta vaticana (cod. Vat. Reg. lat. 1370),* ed. Cecil Grayson (Bologna: Commissione per i testi di lingua, 1964), and more recently in Leon Battista Alberti, *Opere volgari,* 175–193. Another "ordering of the letters of the Tuscan language," based on the same principle, is found in an autograph sheet of Alberti's notes, today in the Biblioteca Riccardiana, Florence; see Grayson's remarks in Alberti, *Opere volgari,* 362–364.

26. See Deborah Howard, "Sebastiano Serlio's Venetian Copyrights," *Burlington Magazine* CXV (1973): 512.

27. Mario Salmi divided the manuscripts attributed to Francesco di Giorgio into two groups corresponding to a "first treatise" (codices L, Laurenziano, and T, Torinese-Saluzziano) and "second treatise" (codices S, Senese, and M, Magliabechianus), the two hypothetically separated by the first printed Vitruvius (1486); Salmi, "Disegni di Francesco di Giorgio nella Collezione Chigi Saracini," *Quaderni dell'Accademia Chigiana* 11 (1947): 7–45. In 1967 Corrado Maltese published the texts of T, collated with L, and of S, collated with M; Francesco di Giorgio Martini, *Trattati di Architettura, Ingegneria e Arte Militare,* ed. Corrado Maltese (Milan: Il Polifilo, 1967). For recent discussions of the codices and their attributions, see Gustina Scaglia, *Francesco di Giorgio: Checklist and History of Manuscripts and Drawings in Autographs and Copies from ca. 1470 to 1687* [. . .] (London: Associated University Presses, 1992); and Massimo Mussini, "La trattatistica di Francesco di Giorgio: un problema aperto," in *Francesco di Giorgio Architetto,* exh. cat., ed. Franceso Paolo Fiore and Manfredo Tafuri (Milano: Electa, 1993), 358–380. In the preface to the catalog, the editors point out that problems of attribution and authorship of the Martini manuscripts have yet to be resolved and cast into doubt some of Mussini's conclusions, 19). Tafuri labels the famous illustrations in Codex T (Torinese-Saluzziano 148) as nonautograph copies (see the image captions on pages 56–57). The so-called second treatise (codices M and S) has also been attributed to Baldassarre Pe-

ruzzi; see Parronchi's arguments (1966–1986) discussed by Mussini, 366, catalog entry 6.

28. "E questo è certo, che molte cose sono da fare, le quali la penna e il disegno mostrare non può," Codex T, f. *5v; Trattati di Architettura*, 15.

> Saria molto utile e quasi necessario che l'architetto [. . .] intendesse qualche poco di disegno, peroché senza quello non si può bene intendere le composizioni delle parti dell'architettura, e oltre a questo perché questa arte, oltre a la scienzia e intelligenzia acquisita da libri e disegni, ha bisogno di invenzione, senza la quale non è possibile essere bono architetto, perché molte cose, non potendosi descrivere né insegnare, bisogna restino nella discrezione e giudizio dell'artefice. Oltre a questo, quelli disegni che sono messi per esempli in ogni parte, non possono essere in tutto dichiarati, perché le superfice estrinseche coprono le intrinseche, onde non volendo multiplicare in infiniti esempli è necesario che, overamente le parti esteriori sieno imperfette facendo perfette le interiori, overo per contrario e conversamente. Adonque fa di bisogno supplire con lo ingegno alla scrittura e pittura. (Codex S, f. 41*v; Trattati di Architettura*, 483–484)

The passage is omitted from Codex M, f. 85*v (Trattati di Architettura*, 483–484). A similar passage in the epilogue added to Codex M (f. 98*v; Trattati di Architettura*, 506) takes up the same arguments in order to argue the opposite point of view—to defend unreservedly the usefulness and need of architectural drawing:

> senza quello [without drawing] non si può bene intendare le composizioni e parti dell'architettura perché le superfici esteriori comprano [coprono] le interiori e d'ogni parte longo saria dare esempli, e perché il completo architetto richiede la invenzione per molti casi occurrenti indescritti che senza disegno è impossibile conseguire, e perché non possendo ogni minima parte dichiarare, quelle che restano sono nella discrezione dell'architetto, la quale senza antigrafice [il disegno] è nulla e molte volte manca in quello ancora dove si estende.

On the architectural drawings of Francesco di Giorgio, and in particular on the relationship between perspective drawing and the theory of fortifications, see Alexander Tzonis, "Power and Representation," *Design Book Review* 34 (1994): 32–36.

29. The original reads:

> Perché ogni nostra cognizione e notizia dello intelletto ha origine dal senso, come testifica Aristotele [. . .] e in fra tutti li altri sensi esteriori el vedere è più spirituale,

puro e perfetto, e più cose e differenzie ci demostra, non pare che lo intelletto nostro così possi perfettamente comprendere alcuna cosa né longo tempo tenere, se quella col *senso del vedere* non ha conosciuto, o almeno qualcuna altra cosa simile a quella, per la cui cognizione l'intelletto si eleva a conoscere la prima. E da questo procede che li filosofi o calculatori volendo trattare delle qualità intense, di quelle parlano come se fusse una linea et una quantità visibile, e continuo, per questo ancora la memoria si fa perfetta, locando le cose considerate [. . .]. Onde, oltre a tutte le *generali e speziali regule*, è necessario a maggior perfezione e chiara notizia ponere alcuni *esempli in disegno*, per li quali meglio lo intelletto giudichi e con più fermezza ritenghi el modo dello edificare, peroché comune opinione è che li esempli più movino l'intelletto che le parole generali, massime quelli che non sono molto esperti et eruditi. (Codex M, f. 57 and with some variations, Codex S, f. 27*v; Trattati di Architettura*, 445; emphasis mine)

See the preceding note ("peroché senza quello [disegno] non si può bene intendere le composizioni delle parti dell'architettura," Codice M, f. 98*v*).

30. The original reads:

Sono per molti tempi stati dignissimi autori i quali hanno diffusamente descritto dell'arte dell'architettura e di molti edifizi e macchine, quelli *con carattare e lettere dimostrando e non per figurato disegno*, et in tali modi hanno esplicato li concetti della mente loro; e per benché ad essi compositori li paia molto largamente tale opare sicondo la mente loro avere illucidate, pure noi vediamo che sono rari quelli lettori che per non avere disegno intendare possino. In però che andando dietro alla immaginativa, ciascuno fa varie composizioni che sono talvolta più differenti dal vero e da la prima intenzione che dalla chiara luce la tenebrosa notte, e per questo reca ai lettori non piccola confisione, perché, *siccome è ditto, tanti lettori, tanti vari compositori.* Ma quando tali autori concordassero con la scrittura el disegno, molto più apertamente si porrebbe iudicare vedendo il segno col significato, e così ogni oscurità sarebbe tolta via. (Codex M, ff. 88–88*v*, passage absent from Codex S; *Trattati di Architettura*, 489; emphasis mine)

In the prefaces to M and S, Francesco di Giorgio acknowledges his debt to Vitruvius, but also in the preface, a phrase added to M seems to hint at Alberti (or perhaps Filarete): "benché a me non sia ignoto alcuni moderni in questa arte avere commentato e scritto, peroché infine nelli utili e difficili passi legermente quelli trovo esser passati," Codex M, f. 2; *Trattati di Architettura*, 297.

31. The original reads:

    Ma sono molti speculativi ingegni che per loro solerzia hanno molte cose invente e dell'altre antiche come di nuovo ritrovate quelle descrivendo, e per non avere el disegno sono difficilissime ad intendare, perché siccome noi vediamo sono molti che hanno la dottrina e non hanno l'ingegno, e molti dotati d'ingegno e non di dottrina, e molti hanno la dottrina e lo ingegno e non hanno el disegno. Onde conviene, se questi vogliono per disegno altre scritture alcune cose dimostrare, bisogno che ad uno esperto pittore lo dia ad intendare. (Codex M, f. 88*v*, passage absent from Codex S; *Trattati di Architettura*, 489)

32. Codex M, f. 32*v*, and Codex S, ff. 45*v*–46; *Trattati di Architettura*, 376–378. The passages on the orders in the "first treatise" are: Codex L, f. 13*v*, and Codex T, f. 14*v*; *Trattati di Architettura*, 56–61.

33. "Dopo di questo io metterò moltre altre invenzioni di capitelli e disegni li quali io ho ritratti in diversi luoghi di ruine antiche; in fra li quali alcuni ne seranno aggionti di mia invenzione, delle quali ciascuno porrà eleggere quello che a lui più piacerà," Codex M, f. 34, and Codex S, f. 47*v*; *Trattati di Architettura*, 382.

34. Mussini, "La trattatistica di Francesco di Giorgio," 359: "la bottega [. . .] solo ambiente che consentisse il controllo della qualità formale e dell'esattezza tecnica."

35. In Naples in 1492, Fra' Giocondo received a payment for the illustrations he had done for two books by Francesco di Giorgio. There are diverse opinions about these illustrations and about the dating of the so-called second treatise (codices M and S). See Maltese in *Trattati di Architettura*, lx–lxi with sources and bibliography; Mussini, "La trattatistica di Francesco di Giorgio," 375, catalog entry 12.

36. On the contrary, a proof of a different use of illustration and a new need for precision in the transmission of visual data, in the Cinquecento some of Francesco di Giorgio's drawings were traced on semitransparent paper, then cut out and inserted into other codices: the Beinecke Codex (a copy of the "first treatise," carried out around 1510–1520, probably Venetian) and the *Libro di Macchine* in the Biblioteca Estense in Modena (a partial copy executed between 1520 and 1550 of the autograph *Opusculum de Architectura* of Francesco di Giorgio) both contain drawings that were traced separately onto thin paper then inserted into the manuscript. See Mussini, "La trattatistica di Francesco di Giorgio," 372–375, catalog entries 9 and 13.

37. Although at least two passages in the last version of Francesco di Giorgio's "second treatise" seem to criticize Alberti (see notes 30 and 31 of this chapter), neither Alberti nor his treatise is ever actually mentioned by Francesco di Giorgio. The assessment of the influence of Alberti's architecture, or of Albertian architectural theory, on Francesco di Giorgio is in itself a historiographic topos: see, for example, Tafuri and Fiore's recent categorization of Francesco di Giorgio as "anti-Albertian in an Albertian fashion" (*albertianamente anti-albertiano*), in the introduction to *Francesco di Giorgio*, 19. According to this interpretation, Francesco di Giorgio's work should be seen as marginal and relatively isolated from a dominant trend that would have linked Alberti directly to the architecture of Renaissance Rome. Typical of the last manner of Manfredo Tafuri, this interpretation, if looked at from the other side, is not incompatible with the notion of an eclipse of Alberti's influence toward the end of the Quattrocento.

38. Within the *De re aedificatoria*, the theory of the orders is discussed primarily—but not exclusively, given Alberti's classification system—in the seventh book, in the chapters dedicated to the ornamentation of temples (VII,5–9).

39. See, for example, the present work, chapter four, section III (on Martin's translation of Alberti) and chapter six, section II (on Possevino's recycling of Alberti).

40. John Onians has contrasted Alberti's "Romanism" with Filarete's Greek inspiration, underscoring the anti-Albertianism of some of Filarete's arguments; see his "Alberti and Filarete. A Study in Their Sources," *Journal of the Warburg and Courtauld Institutes* 34 (1971): 111. See also Choay, *La règle et le modèle*, 221, note 2; *The Rule and the Model*, 375, note 34. Filarete's plan for a voyage to Constantinople is mentioned in a letter of 1465 sent by Filelfo to the Greek philosopher Georgios Amoirukios; see T. Klette, *Die griechischen Briefe des Franciscus Philelphus* (Greifswald, 1890), 46; and Peter Tiegler, *Die Architekturtheorie des Filarete* (Berlin, 1963), 5. We have no more news about Filarete after this date nor any information about or confirmation of his departure.

41. Antonio di Piero Averlino, called Filarete, Codex Magliabechianus, Florence, Biblioteca Nazionale Centrale, Ms. ii.i.140, book XV, f. 113*v*; reprint *Trattato di architettura*, edited by Anna Maria Finoli and Liliana Grassi (Milan: Il Polifilo, 1972), 428–429: "Se non ha il disegno, [an architect] non potrà fare cosa con forma, né cosa degna, perché in arte di ornare le cose quelle che son degne sono quelle che vanno mediante il dis-

egno." The term "disegno" in Filarete denotes in some cases the whole process of creating a project and does not necessarily refer to a graphic plan. For example, Filarete calls a wooden scale model a "disegno di legname" ("a wooden *disegno*"), book XVI, f. 123*r; Trattato di architettura*, 460–461.

42. Filarete, book XXIV, f. 185*r; Trattato di architettura*, 679: the ancients

[. . .] facevano medaglie, le quali intagliavano d'acciaio, e poi le stampavano di bronzo, d'argento e d'oro, come ancora si vede ed è trovato tutto dì. [. . .] Che degna cosa è questa, che per questo noi conosciamo queli che mille, o duemila anni o più, che morirono! Per scrivere, questa notizia non così vera si può avere, puossi bene avere de' fatti che facevano, ma non della similitudine del viso, non si può dimostrare per scrittura come per questo.

43. The episode is cited by Elizabeth L. Eisenstein, but it may be apocryphal; see her *The Printing Revolution in Early Modern Europe* (Cambridge: Cambridge University Press, 1983), 58. Louis XVI was recognized in Sainte-Menehould by the son of the local *maître de postes*, a certain Drouet. Restif de la Bretonne, who tells the story of the night of Varennes on the basis of what was being said in Paris at the time, does not know how it was that the king was recognized; see *Les nuits de Paris* [1788–1794], in *Les nuits révolutionnaires*, ed. Jean Dutourd and Béatrice Didier (Paris: Librairie Générale Française, 1978), 216.

44. Filarete, Codex Magliabechianus, book XII, f. 87*v* (the text and two illustrations); *Trattato di architettura*, 337. Folio 87*v* is reproduced in vol. II, table 66: "'Maisì, ma pure lo vorrei vedere un poco disegnato, se non tutto, almeno una partita, ch'io potessi bene intendere proprio come egli era.' 'Sono contento, io ve lo disegnerò il fondamento e poi una parte di fuori.' 'Ora lo 'ntendo bene, dimmi chi lo fe' fare o chi l'ordinò, perché mi piace assai, e parmi dovesse essere uno bello edifizio.'" Other instances of this same topos are cited and discussed by Choay, *La règle et le modèle*, 222.

45. Filarete, Codex Magliabechianus, book VI, ff. 40*r–v; Trattato di architettura*, 157–158:

È impossibile a dare a intendere queste cose dello edificare, se non si vede disegnato, e nel disegno ancora è difficile a intendere. E non lo può bene intendere chi non intende il disegno, perché è maggior fatica a intendere il disegno che non è il disegnare. E questo pare sia contrario alla ragione [. . .]. Sì che non stimi nessuno

il disegno essere poco, che non è cosa niuna che di mano si faccia che non consista nel disegno, o per un modo o per un altro, e non è sanza grande ingegno d'intelletto, a chi lo vuole intendere come richiede essere inteso.

46. Filarete, Palatine Codex, Florence, Biblioteca Nazionale Centrale, Ms. E.B.15.7, ff. 1*r–v*, dedicated to Francesco Sforza; *Trattato di architettura*, 8, footnote:

    Eccellentissimo Principe perché ti diletti d'edificare come in molte altre virtù eccellenti: credo quando non sarai occupato in maggiore cose ti piacera vedere et intendere questi modi e misure e proportioni d'edificare [. . .]. Piacciati d'accettarla e vederla non perché d'eloquenza sia degna: ma solo per li varii modi di misure che s'appartengono di sapere a chi vuole edificare [. . .].

47. Filarete, Codex Magliabechianus, f. 1*v*, dedicated to Piero de' Medici; *Trattato di architettura*, 7:

    Perché ho conosciuto tu essere eccellente [. . .], o magnifico Piero de' Medici, considerando questo, io stimai doverti piacere intendere modi e misure dello edificare. [. . .] Sì che non ti rincresca alcuna volta leggere o far leggere questo architettonico libro, nel quale, come io ho detto, troverai vari modi di edificare, e così varie ragioni di edifizii in esso si contiene. Per la qual cosa, credo, daranno alquanto di piacere ai tuoi orecchi, perché in esso ancora si contengono proporzioni e qualità e mesure [. . .].

48. See the description of the codex in A. M. Finoli, "Nota al testo," in Filarete, *Trattato di architettura*, cvii–cxxix.

49. See Grassi, "Nota introduttiva," in Filarete, *Trattato di architettura*, lxiii–lxiv; Spencer, "Introduction," in *Filarete's Treatise on Architecture, Being the Treatise by Antonio di Piero Averlino, Known as Filarete*, trans. John R. Spencer (New Haven, CT: Yale University Press, 1965), xvii–xviii.

50. Codex Valencianus, Valencia, University Library, currently missing: see the description of the codex and the philological notes of Finoli in Filarete, *Trattato di architettura*, cvii–cxxix. According to Spencer ("Introduction," in *Filarete's Treatise on Architecture*, xvii–xviii), we cannot be sure that M (Codex Magliabechianus) is indeed the one lent out by Lorenzo de' Medici, who perhaps owned more than one copy of the treatise, or that V (Codex Valencianus) is the copy carried out on this occasion for the Cardinale d'Aragona. It is certain, however, that V belonged to Alfonso, duke of Calabria.

51. Grassi, "Nota introduttiva," in Filarete, *Trattato di architettura*, lxiv.

52. Filarete, Trivulzio Codex, Milan, Biblioteca Trivulziana, 863, now lost. See Finoli's description of the codex and philological notes in *Trattato di architettura*, cvii–cxxix; Spencer, "Introduction," in *Filarete's Treatise on Architecture*, xvii–xviii.

53. "Trattato di architettura del sud. Pelori, o progetto a edificare una città," attributed to Pietro Cataneo, Codice Misc. L.V.9, Siena, Biblioteca Comunale degli Intronati, no. 2. See Finoli in Filarete, *Trattato di architettura*, cvii–cxxix.

54. Grassi, "Nota introduttiva," in Filarete, *Trattato di architettura*, xx; Julius von Schlosser, *Die Kunstliteratur: Ein Handbuch Zur Quellenkunde der neueren Kunstgeschichte* (Vienna: A. Schroll, 1924; reprint 1985); all citations from the edition revised and updated by Otto Kurtz, *La letteratura artistica. Manuale delle fonti della storia dell'arte moderna*, trans. Filippo Rossi (Florence and Vienna: La Nuova Italia and Kunstverlag Anton Schroll, 1964), 133.

55. Filarete, Codex Magliabechianus, book VIII, f. *57v; Trattato di architettura*, 221; for a reproduction of the folio see vol. II, table 32 (after the architect discusses the three "maniere di colonne," Doric, Ionic, and Corinthian, as well as a variety of other columns found in antiquity, the interlocutor, the Sforza duke, once again asks to see an illustration. The author postpones further explanations until the following day, when, after another insistent request from the duke, Filarete finally produces an image of the three columns, explaining:

quando noi le metteremo in opera, noi faremo una di quelle antescritte, delle quali avete inteso le loro ragioni e misure delle tre qualità, cioè doriche, ioniche e corinte. Come avete veduto, col sesto [compasso] io ho fatto nove tondi alla dorica, alla corinta n'ho fatti otto, alla ionica n'ho fatti sette. Per al presente delle colonne avete inteso e veduto per disegni assai [. . .].

The drawings of the three columns in the Codex Magliabechianus (see my fig. 7.5) are not consistent with fifteenth-century practice; what is more, the theoretical definition of the orders in Filarete's treatise is proportional, not visual (Filarete's orders are numbers, not forms).

56. Filarete, Codex Magliabechianus, book I, ff. *5v–6r; Trattato di architettura*, 28–29: There exist in nature species of animals whose members look almost exactly alike, such as flies, ants, worms, spiders, and fish. But people are all different from one another, and architecture is based on the human form:

Tu potresti dire: l'uomo, se volesse, potrebbe fare molte case che si asomigliassero tutte in una forma e in una similitudine, in modo che saria propio l'una come l'altra. Ben sai che Idio potrebbe fare che tutti gli uomini si somigliassero, pure non lo fa; ma l'uomo non potrebbe già fare questo lui, se già Idio non glie le concedesse; ma se fusse tutta la ricchezza di Dario o d'Alessandro, o di qualunque altro ricco stato sia, in uno uomo, e volesse fare cento o mille case a uno modo medesimo e ad una somiglianza, non mai farebbe che totalmente fusse l'una come l'altra in tutte le sue parti, se ben possibile fusse che uno tutte le fabbricasse. Qui ci sarebbe da dire alcune cose le quali lascerò alli speculativi. Che se uno tutte le fabbricasse, come colui che scrive o uno che dipigne fa che tutte le sue lettere si conoscono, e così colui che dipigne la sua *maniera* dalle figure si cognosce, e così d'ogni facoltà si cognosce lo *stile* di ciascheduno; ma questa è altra pratica, nonostante che ognuno pure divaria o tanto o quanto, benché si conosca esser fatta per una *mano*. Ho veduto io dipintore e intagliatore ritrarre teste, e massime dell'antidetto illustrissimo Signore duca Francesco Sforza, del quale varie teste furono ritratte, perché era degna e formosa; più d'una da ciascheduno bene l'apropriarono alla sua e asomigliarono, e niente di meno c'era diferenza. E così ho veduti scrittori nelle loro lettere essere qualche diferenza. Donde questa sottilità e proprietà e similitudine si venga, lasceremo alli sopradetti speculativi dichiarare. (Emphasis mine)

57. See, for example, Schlosser, *La letteratura artistica*, 160.
58. *On the Art of Building*, 303; "concinnitas, hoc est absoluta primariaque ratio naturae," Alberti, *De re aedificatoria*, IX,V,6; *L'architettura*, 816–817.
59. Alberti, *De re aedificatoria*, IX,V,4–5; Latin text in *L'architettura*, 814–815.
60. Alberti, *De re aedificatoria*, IX,VII,4–7; *L'architettura*, 836–839:

Collocatio ad situm et sedem partium pertinet. [. . .] Quare in primis observabimus, ut ad libellam et lineam et numeros et formam et faciem etiam minutissima quaeque disponantur, ita ut mutuo dextera sinistris, summa infimis, proxima proximis, *aequalia aequalibus aequatissime conveniant* ad istius corporis ornamentum, cuius partes futurae sunt. [. . .] Veteres hanc *parilitatis coaequationem* tanti fecere, ut etiam ponendis marmoreis tabulis voluerint quantitate qualitate circumscriptione et situ et coloribus exactissime respondere. [. . .] Bigas enim [apud priscos] et quadrigas videmus, equorum et ductorum et adsistentium statuas usque adeo mutuo similes, ut in ea re naturam superasse possimus attestari, in cuius operibus ne nasum quidem naso similem intueamur. (Emphasis mine)

61. Alberti, *De re aedificatoria*, IX,VII,6; *L'architettura*, 838–839: "coaqueatio parilitatis." See preceding note.

62. Alberti, *L'architecture et art de bien bastir du Seigneur Leon Baptiste Albert, Gentilhomme Florentin, divisée en dix livres, traduicts de Latin en Françoys, par deffunct Ian Martin, Parisien, nagueres Secretaire du Reverendissime Cardinal de Lenoncourt* (Paris: Kerver, 1553), 136*v*–137:

Veritablement les antiques ont tant estime ceste egalité [. . .]. Et qu'ainsi soit, i'ai veu des chars d'hommes triumphateurs, tant a deux roes qu'a quatre, menez par des chevaulx et conducteurs et les assistans a la pompe, si bien resemblans l'un a l'autre, que nature estoit surmontée en cest endroit, consyderé que nous ne sçaurions veoir en ses ouvrages tant seulement deux nez egaulx.

63. Alberti, *De re aedificatoria*, IX,VIII,7; *L'architettura*, 838. See also notes 21 and 23 above. In the *De Statua*, Alberti describes a device that according to him should enable the unlimited reproduction, in different times and places, of copies of the same statue (even on different scales, depending on the circumstances). The same method could also be used to carry out various pieces of a single statue in different or distant locations. When it came time to assemble the parts, they would fit together perfectly. The idea that a statue could be produced on an assembly line, from prefabricated parts, has vaguely Taylorist connotations, but it is not Alberti's own invention. It is in fact a classical *topos* that Alberti, in the *De re aedificatoria*, attributes to Diodorus Siculus; *De re aed.*, VII,XVI,8; *L'architettura*, 656. See also Carpo, "*Descriptio Urbis Romae*," and this chapter, note 23.

64. John Ruskin, *The Stones of Venice* (London: Smith, Elder and Co., 1851–1853), 3 vols., vol. III, 1853, III, IV, 35, 194:

The whole mass of the architecture, founded on Greek and Roman models, which we have been in the habit of building for the last three centuries is utterly devoid of all life, virtue, honourableness, or power of doing good. It is base, unnatural, unfruitful, unenjoyable, and impious. Pagan in its origin, proud and unholy in its revival, paralysed in its old age [. . .]; an architecture invented, as it seems, to make plagiarists of its architects, slaves of its workmen, and sybarites of its inhabitants; an architecture in which intellect is idle, invention impossible, but in which all luxury is gratified, and all insolence fortified;—the first thing we have to do is to cast it out, and shake the dust of it from our feet for ever. Whatever has any connections with the five orders, or with any one of the orders,—whatever is Doric, or Ionic, or Tuscan, or Corinthian, or Composite, or in any wise Grecized or Romanized, whatever betrays the smallest respect for Vitruvian laws, or conformity with Palladian work,—that we are to endure no more.

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