

# La *Fabrique* de Vésale et autres textes

Éditions, transcriptions et traductions  
par Jacqueline Vons et Stéphane Velut

## General introduction to the *Fabrica*

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## Introduction

No edition of *De humani corporis Fabrica*, with transcription and translation into French and commentaries had so far ever been undertaken in France. We will merely provide a few pieces of information on this long-term endeavor, with a view to shed light on the originality and interest of the *Fabrica* both in its time and today, and also in order to explain why we chose to publish and translate the 1543 edition<sup>1</sup>. Although *De humani corporis Fabrica libri septem* is almost unanimously presented as the treatise that laid the foundation of modern anatomy, it suffers double setback: it was written in Latin, which ever fewer people master today, in spite of the treasure-troves that are still to be discovered in our heritage – and it deals with anatomy, a specialized subject whose mastery cannot be improvised, and which, in addition, needs to be situated in its specific context. Indeed, the book is not a philosophical discourse or a *logos* on human nature, but a description of the structure and substance of the various parts of the body – a description made *via* dissection, conveyed in writing, and laying the basis of a specific subject, a specific science.

We know the main features of Vesalius' biography. Born in Brussels, Andreas Vesalius (1514–1564) studied medicine in Louvain and Paris, and then taught anatomy in Padua (1538–1543). A renowned physician, he placed himself in the service of Charles V, then followed Philip II to Madrid. He died in Zante (or Zakynthos) during the return journey after a pilgrimage to Jerusalem. Several books testify to his participation in the major debates that divided the medical world of his time (*Letter on bloodletting*, *Letter on the Chinese root*), but it is the change that Vesalius introduced in the way anatomy was taught and the human body described that fully justifies the interest of contemporary researchers. Making the examination of the corpse the necessary condition to studying what man is, and using both spirit and hands (*mens et manus*), Vesalius set in place a working method that is typical of our modern scientific approach, *i.e.* based on intuition, observation and deduction. He modified the concept of the anatomical book, making it an auxiliary, a substitute even, to *de visu* teaching, and conferred to images a scientific as well as an artistic status. After several years practicing dissection in universities for the benefit of both students and scholars, in 1543 he finally published a major anatomical treatise: *De humani corporis Fabrica libri septem*, accompanied with its *Epitome* or *Summary*<sup>2</sup>, both printed in Basel, on Oporinus' presses. In addition to the – unpaginated – introductory texts and index, the treatise *De humani corporis Fabrica* is comprised of seven separate books of various lengths, dealing respectively with the bones and cartilages (Book I, 168 pp.), the muscles and ligaments (Book II, 187 pp.), the veins and arteries (Book III, 55 pp.), the nerves (Book IV, 40 pp.), the organs of digestion and generation (Book V, 102 pp.), the heart and the organs of respiration (Book VI, 66 pp.), the brain and the spinal nerves (Book VII, 56 pp.).

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1 The introduction that follows may be completed as the edition and translation process of the seven books of the *Fabrica* is carried out.

2 J. Vons and S. Velut, A. Vésale. *Résumé de ses livres sur la Fabrique du corps humain (A summary of Vesalius' books on the Fabric of the human body)*, Paris, Les Belles Lettres, 2008.

## Vesalius and the *Fabrica*

### Choosing a printer

The Preface addressed to Emperor Charles V is dated Padua, August 1<sup>st</sup>, 1542; the text had been fully written at this date, but probably not much earlier, as it features references to persons involved in the July 1542 Louvain events. On August 24, Vesalius sent from Venice a letter addressed to the Basel printer Johannes Herbst (Oporinus), in which he mentioned he had sent him an author copy of the *Fabrica* accompanied with the engraved woods; he also alluded to an earlier exchange of letters that apparently mainly addressed layout considerations, which he repeated in this particular letter. According to C.D. O' Malley, Oporinus started the printing as early as September or October 1542, probably involving several typographers who worked together (or independently, as might be surmised from the pagination error starting on page 312, and continuing over about a hundred pages)<sup>3</sup>. The colophon attests to the fact that the book was published in June 1543. We thus have precise information about the time needed for the material preparation of the book (a bit longer than nine months), but are left with mere suppositions concerning the time it took Vesalius to write one of the most seminal works in medical literature, achieved in parallel with his other publications, spanning from 1538 to 1541<sup>4</sup>.

Why did Vesalius choose Johannes Herbst, or Oporinus<sup>5</sup>, established in Basel, as his printer, in spite of the difficulties and the risks incurred in the transportation of both the copy and the woodblocks from Venice<sup>6</sup>? There were numerous renowned printers there, and in addition, Vesalius was paid by the Council of Venice to give anatomy and surgery lectures at the University of Padua. But in spite of the religious turmoil, the University of Basel was a major place of medical culture<sup>7</sup> and the printers there enjoyed an excellent international reputation, which the friendly relationship between Erasmus and Johann Froben had contributed to developing. As far as Vesalius was concerned, he had already had Robert Winter print the *Paraphrase* in 1537 and the *Letter on bloodletting* in 1538, and Winter had probably acquainted him with Oporinus<sup>8</sup>.

3 C.D. O' Malley, *Andreas Vesalius of Brussels. 1514-1564*, Berkeley and Los Angeles, University of California Press, 1964, pp. 134-135. Surprisingly, in addition to the retro-pagination of about a hundred pages, there are many occasional pagination mistakes, and also variations in the typography (abbreviations, punctuation) in this luxurious book; we mention them page after page on the translation. On the various aspects of the exemplar as an author copy destined to the printer, see J.P. Pittion, *Le livre à la Renaissance. Introduction à la bibliographie historique et matérielle (The book during the Renaissance. Introduction to historical and material bibliography)*, Turnhout, Brepols, Bibliothèque de Genève, 2014, pp. 74-75.

4 *The Letter on the Chinese root* refers to these years between February 1539 and July 1542 that were entirely devoted to study, *Andrae Vesalii Bruxellensis, medici Caesarei epistola, rationem modumque propinandi radices Chynae decocti, quo nuper inuictissimus Carolus V. Imperator usus est, pertractans, Basileae, ex officina Ioannis Oporini, 1546 (edition we used: Opera omnia anatomica et chirurgica cura Hermanni Boerhaave et Bernhardi Siegfried Albini in duos tomos, Lugdunum Batavorum, apud J. du Vivie and J. and H. Verbeek, 1725, t. II, p. 680).*

5 Play on words based on the noun *Herbst* (meaning "autumn" in German) and the beginning of an epigram (IX, 13) by the Latin poet Martial: *Si daret autumnus mihi nomen, Oporinos essem*, the Greek noun *opôrinos* being Latinized into Oporinus. Oporinus' brother-in-law, the printer Robert Winter, also translated his name into *Chimerinus*, from the Greek *cheimerinos* ("wintry").

6 See introduction to the preface.

7 From 1529 to 1532, the University of Basel was suspended by the city council, but apparently it was not completely shut. Indeed, Oswald Bär carried out the first public dissection at the Faculty of Medicine in 1531. During the following decades, the University was reestablished and acquired a strong European reputation in medicine, notably thanks to the teaching of Felix Platter and Caspar Bauhin, @ DHS: <http://www.hls-dhs-dss.ch/textes/f/F10971.php>.

8 *The Letter on bloodletting (Epistola docens uenam axillarem dextri cubiti in dolore laterali secundam)* was published in 1539 in Basel (published again in 1544 in Venice). Although Oporinus was already associated with Winter, only the latter's stamp is

Oporinus (1507–1568), born in Basel, was the son of the painter Hans Herbst, whose workshop, quite famous for the quality of their ornamental drawing<sup>9</sup>, harbored numerous apprentices. He had studied Latin, Greek and Hebrew in Strasbourg with the humanist Jérôme Gebwiler (Hieronymus Gebwilerus) and had been noticed by the famous Basel printer Johan Froben for his collection and transcription of texts by the Church Fathers. He studied with Paracelsus (Theophrastus Bombastus) and finally became his secretary, first in Basel and then in Colmar. Back in his hometown, and thanks to the help of Simon Grynaeus, a Basel humanist in favor of the Reformation, he occupied the chair of Greek literature at the Basel *Pedagogium* for a period of two years. In 1536, he associated with two printers, Thomas Platter (father to the physicians Felix and Thomas Platter) and Robert Winter, and a composer, Balthasar Ruch (or Lasius), in order to take over *The Black Bear*, the workshop of Andreas Cratander, a renowned printer in Basel, but the partnership soon broke up. In 1539, maybe because he did not hold the Masters of Arts that the Basel authorities decided was now compulsory to teach, Oporinus left the *Pedagogium* and established himself as an independent printer, a profession he held until 1566, in spite of his financial difficulties. He died on July 6, 1568<sup>10</sup>.

The *Fabrica* and its *Epitome* are not in the least representative of Oporinus' global editorial production, but feature as an exception in the catalogue of the books published by the humanist, who specialized in the Church Fathers and the Greek and Latin classical authors (Demosthenes, Pliny the Elder, Cicero, Plutarch, *etc.*), in relation with Lutheran intellectuals<sup>11</sup>. Why did he accept to print a large format scientific book with numerous illustrations, sold at a high price? Was it out of a desire to compete with the famous Venetian Aldine editions? In 1543, Oporinus was still a young printer (he was a mere seven years older than Vesalius), but he was already renowned. He mixed with scholars and learned men, who precisely, for some of them, made up the part of the audience that was favorably disposed towards the young anatomist on the frontispiece of the *Fabrica*. Francis Vesalius, Andreas' brother, recalled in the Preface to the *Letter on the Chinese root* the friendship that existed between the two men<sup>12</sup>. It is probably in the light of this friendship, and due to similar views on printing in the service of science, that one is to understand Vesalius' interventions, sometimes his directives, concerning the layout of his work. The letter to Oporinus, which follows the preface, is an almost unique document in the history of the book in the first half of the 16<sup>th</sup> century, so rare it is for an author of this time period to try and impose to the printer so precise and meticulous a layout for his text as Vesalius did, requesting different typographical characters for the various parts (notes, index, *etc.*) and choosing the paper in order to optimize the printing quality of the plates.

The book left Oporinus' presses in June 1543 with, for the first time, the distinctive stamp of the printer on the reverse side of the colophon: Arion sitting on a dolphin's back during a

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featured on the title page.

9 Cf. "Hans Herbst (1470-1552)" in *Deutsche Biographie*, <http://www.deutsche-biographie.de/sfz70110.html>. The Holbein brothers had stayed at Hans Herbst's in 1515. In 1520, Hans Holbein became a burgher of Basel and got acquainted with Basel printers (Johannes Froben, Adam Petri, Andreas Cratander, Johannes Bebel).

10 Cf. M. Steinmann, *Johannes Oporinus. Ein Basler Buchdrucker um die Mitte des 16. Jahrhunderts*, Diss. Phil.-Hist. Fakultät Univ. Basel, Basel and Stuttgart, Helbing and Lichtenhahn, 1967; F. Hieronymus, *Oberrheinische Buchillustration. II: Basler Buchillustration (1500-1545)*, Basel, 1984; C. Gilly, *Die Manuskripte in der Bibliothek des Johannes Oporinus*, Basel, Schwabe-Verlag, 2002.

11 See the catalogue of the books and the funereal eulogy of Oporinus in Josiscus de Silésie, *De ortu, uita et obitu J. Oporini*, Strasbourg, 1569, reprinted in 1571, featured in C. Gryphius, *Vitæ selectæ eruditissimorum virorum*, Breslau, 1711.

12 Andreas Vesalius, *Andreæ Vesalii Bruxellensis, medici Cæsarei epistola, rationem modumque propinandi radicis Chynæ decocti, quo nuper inuictissimus Carolus V. Imperator usus est, pertractans*, Basileæ, ex officina Ioannis Oporini, 1546, p. 4.

tempest, and the motto *INVIA VIRTUTIS NVLLA EST VIA*. The proofs were probably corrected on site, with the participation of Vesalius himself, who stayed in Basel, probably not the whole time of the printing process, but at least for a large part of it<sup>13</sup>. When he arrived in Basel, at the end of the year 1542 or at the beginning of January 1543, Vesalius registered at the University. Alban Thorer (Albinus Torinus)<sup>14</sup> was rector then. Several letters written by Johannes Gast to Heinrich Bullinger in Zurich<sup>15</sup> testify to the interest with which Vesalius' Basel friends, as well as humanists living in Northern countries, closely followed the printing of this book, the daring format of which was reminiscent of that chosen by both Galen and Hippocrates. On August 2, 1543, Gast announced that the *Fabrica* and the *Epitome* had been printed, and that a translation of the *Epitome* into German, done by Alban Thorer<sup>16</sup>, was to be published soon. Gast also indicated the prices: the *Fabrica* cost 4 florins and 4 batz and a half, the *Epitome* 10 batz<sup>17</sup>. In the same letter, he informed his correspondent Bullinger of Vesalius' departure for Spire in order to give Charles V the book dedicated to him<sup>18</sup>.

## Choosing a title

Observing and describing the human body as any other natural object fit within the field of application of natural history, illustrated in Greece by Aristotle (*The History of Animals*), and whose most illustrious representative among Latin writers was Pliny the Elder. In his monumental encyclopedia, *Naturalis Historia*, sum of accumulated knowledge, observed facts (*facta*) and prodigies (*mirabilia*), Pliny undertook a *humani corporis historia*, i.e. an enumeration of the parts of the human body, following a vertical order, *a capite ad calcem*, mixing external and internal parts. The description is interspersed with etymological explanations and anecdotal digressions endowed with a moral purpose; the anatomical observations are not separated from

13 The typographical corrections and the addition of forgotten text, notably in the plate legends, have not always been implemented in the new page composition and they remain visible. We mention them in the translated text.

14 On Alban Thorer (Albanus Torinus), cf. A. Burckhardt, *Geschichte der medizinischen Fakultät zu Basel 1460-1900*, 1917, pp. 38-42. Physician, philologist and reformed humanist, Thorer had acquired his qualifications in Montpellier. In 1536, the Council of Basel appointed him professor of medicine at the university; he was the rector of the university in 1542-43, while Vesalius was staying in Basel. He was barred from the list of professors in 1545 for having consulted without the prior authorization of Christophe de Wurtemberg in Monbéliard. It is at the time when Thorer was rector that Vesalius conducted the public dissection of the body of Jacob Karrer von Gebweiler, beheaded for murder and bigamy, in Alsace; Franz Jeckelmann (Felix Platter's father-in-law) was his assistant, cf. C.D. O' Malley, *Andreas Vesalius of Brussels. 1514-1564*, Berkeley and Los Angeles, University of California Press, 1964, pp. 137-138 (translation of a letter by Johannes Gast relating the circumstances).

15 On Bullinger, cf. F. Büsser, *Heinrich Bullinger (1504-1575): Leben, Werk und Wirkung, Band 2*. Theologischer Verlag Zürich, 2005.

16 Alban Thorer, *Von des menschen cörper Anatomey, ein kurtzer, aber vast nützer ausszug, auss D. Andree Vesalii von Brussel Büchern, von ihm selbs in Latein beschriben, vnnd durch D. Albanum Torinum verdolmetscht*. Gedruckt zu Basel, bey Johann Herpst, genant Oporino, 1543.

17 M. Roth, *Andreas Vesalius Bruxellensis*, Berlin, G. Reimer, 1892, cited by M. G. Wolf-Heidegger, "André Vésale et Bâle," in *Commémoration solennelle du quatrième centenaire de la mort d'André Vésale* (Solemn commemoration of the four hundredth anniversary of Vesalius' death), 19-24/X/1964, Brussels, Académie Royale de Médecine de Belgique, 1964, pp. 53-61. The batz (batzio) was a currency unit used in South Germany, Western Switzerland (Bern, Soleure, Fribourg), Valais and central Switzerland, from Basel to Neuchâtel, from the 16th century to the establishment of the Swiss republic, @DHS, <http://www.hls-dhs-dss.ch/textes/f/F13677.php>.

18 Probably the sumptuous copy bound in purple silk with a six-compartment spine, whose frontispiece, engraved plates and large dropped initials were painted with gold and silver highlights, according to the description made when it was put up for sale by Christie's on March 18 1998. The ex-dono manuscript ("Ce Liure a esté donné par l'empereur Charles le Quint a Messire Jacques Mesnage cheualier seigneur et patron de Cagny Ambassadeur du Roy de France Francois premier aupres de sa personne", in English: "This book was given by Emperor Charles V to Jacques Mesnage, knight, lord and master of Cagny, ambassador of the King of France, Francis, to his person") attests to the fact that the copy was given by the Emperor to Jacques Mesnage, the French ambassador to the imperial court between March 1545 and March 1547, cf. C. D. O' Malley, "Andreas Vesalius. Count Palatine: further information on Vesalius and his ancestors," *Journal of the History of Medicine and Allied Sciences*, 9, 1954, pp. 196-223.

the pathological facts, superstitions or physiognomonic interpretations. This *historia* of the human body by Pliny constitutes indeed a first attempt at presenting in Latin a global vision of what the human body is<sup>19</sup>.

The term *anatomia* as a translation of the Greek ἀνατομή seems to have been first used in Latin in the 4<sup>th</sup> century AD<sup>20</sup>, and it suddenly became widespread at the end of the 15<sup>th</sup> century, after the publication of Mondino dei Liucci's treatise in 1474<sup>21</sup>. After the example of Galen's *De anatomicis administrationibus*, which shows how to acquire knowledge on the body by opening it, several physicians from the Renaissance promoted in their titles the practice of dissection, which allows one to see the inside of the human body. Thus, Charles Estienne (1504–1564) published in 1545, in Paris, at Simon de Colines', the treatise entitled *De dissectione partium corporis humani*<sup>22</sup>, in which it clearly appears that the word *dissectio* is a translation into Latin of the Greek ἀνατομή and is meant to refer to the fact of cutting up. The nouns *anatomia* and *dissectio* are used as synonyms in quite a few titles, for example in *Liber introductorius anatomiae, siue dissectionis corporis humani* by Niccolò Massa (1499–1569), Venetian surgeon and physician, published in Venice by H. de Benedictis in 1536. The physician André de Laguna (1499–ca. 1559), inviting his reader to watch the written produce of a dissection, announced in 1535 an *Anatomica Methodus seu de sectione Humani corporis contemplatio*<sup>23</sup>, and Giovanni Battista Canano (1515–1579) published an anatomical treatise in Ferrara in 1541, *Musculorum humani corporis picturata dissectio*, which the “quick images,” *Vivae imagines partium corporis humani aereis formis expressæ*, published by Plantin in 1566<sup>24</sup>, will echo. Thus, the two moments conducting one to know the body, opening it and describing it, could be referred to by the two terms *dissectio* and *historia* – or by circumlocutions. But in 1600, André Dulaurens (1559–1609) resorted to a less common use of ἀνατομή, meaning the disposition of the organs of the body, whose knowledge can be acquired through dissection: *Qua methodo doceri et demonstrari possit Anatomie*<sup>25</sup>.

19 Cf. my communication *Historia et Fabrique. Recherche de méthodes scientifiques pour décrire le corps humain dans les traités d'anatomie au XVI<sup>e</sup> siècle (Historia and Fabrica. Defining scientific methods to describe the human body in anatomical treatises of the 16th century)*, J. Ducos's seminar, *Le livre scientifique. Définition et émergence d'un genre (1450-1850) (The scientific book. Definition and emergence of a genre)*, Paris, December 7, 2007. The *De medicina libri octo* by Cornelius Celsus merely addresses osteology in Book VIII, and limits itself to descriptive anatomy.

20 J. André, *Le vocabulaire latin de l'anatomie (The Latin vocabulary of anatomy)*, Paris, Les Belles Lettres, 1991, pp. 19-20.

21 Mondino dei Liucci (ca. 1270-1326), *De Anathomia*. Written circa 1316, the treatise was printed in 1474 in Padua and published by P. Maufer (republished in 1478 by A. Carcano in Pavia).

22 Charles Estienne, *De dissectione partium corporis humani libri tres, à Carolo Stephano, doctore Medico, editi. Unà cum figuris, et incisionum declarationibus, à Stephano Riverio Chirurgo compositis*, Parisiis, apud Simonem Colinaeum, 1545. The book comprises sixty-two full-page illustrations composed and captioned by the surgeon Estienne Rivière. A translation into French featuring two additional engravings was published the following year by the same editor (pp. 11 and 13). Cf. H. Cazes and A. Carlino, “Plaisir de l'anatomie, plaisir du livre: La Dissection des parties du corps humain de Charles Estienne (Paris, 1546),” (The pleasure of anatomy, the pleasure of books: Charles Estienne's Dissection des parties du corps humain, Paris, 1546), *Cahiers de l'Association internationale des études françaises*, 55, 2003, pp. 251-274; H. Cazes, “Le *De Dissectione partium corporis humani* (1545) et son double français: Charles Estienne traducteur de lui-même,” (*De Dissectione partium corporis humani* (1545) and its French version: Charles Estienne as a self-translator) in *Tous vos gens à latin. Le latin, langue savante, langue mondaine (XIV<sup>e</sup>-XVII<sup>e</sup> siècles)*, studies collected and published by E. Bury, Geneva, Droz, 2005, pp. 365-377; L. Dunand and Ph. Lemarchand, *Les compositions de Titien intitulées Les amours des dieux, gravées par Gian-Jacopo Caraglio, selon les dessins préparatoires de Rosso Fiorentino et Perino del Vaga (Titian's paintings entitled The loves of the gods, engraved by Gian-Jacopo Caraglio, after the preparatory drawings by Rosso Fiorentino and Perino del Vaga)*, vol. III, Lausanne, Institut d'iconographie Arietis, 1977-1990.

23 André de Laguna (1499-1560), *Anatomica Methodus seu de sectione Humani corporis contemplatio*. Andrea a Lacuna author, Parisiis, apud Ludovicum Cyaneum, 1535 (simultaneously published by Iacob Kerver, 1535).

24 This is an editor's publication we entirely owe to Plantin; description: J. Vons and S. Velut, A. Vésale. *Résumé de ses livres sur la Fabrique du corps humain (A summary of his books on the Fabric of the human body)*, Paris, Les Belles Lettres, 2008, p. XCVII.

25 André Du Laurens (1558-1609), *Historia anatomica humani corporis et singularum eius partium, multis controuersis et obserua-*

The terms used may not always be indicative of the distinction between the method used to know the inside of the body and the representation of what is observed, but what is certain is that the anatomical description in medical treatises from the Renaissance, whether it is called *historia*, *anatomia* or *dissectio*, does not follow the *a capite ad calcem* outline of the naturalists any longer. Mondino and others probably followed the order of dissection by cavities or stomachs, governed by the conditions of conservation of the bodies, as well as by philosophical presuppositions and explanatory theories on the body that pre-existed the anatomical practice<sup>26</sup>. But all this remains partly a working hypothesis, insofar as we have no direct testimony on the anatomical demonstrations performed in universities and are ignorant of the procedures that were actually used. The most complete document we have is a notebook written by a German student, Baldasar Heseler, as he was attending the anatomical demonstrations Vesalius conducted in Bologna in January 1540<sup>27</sup>. These notes show that the anatomist selected structures whose dissection is especially difficult (for instance the hyoid bone or the azygos vein), which he isolated and prepared prior to his lectures, and that he did not open up complete human bodies in public. On the contrary, the anatomical book can be presented as a sum, taking into account both biological imperatives (namely decomposition) and interpretation grids of the human body ordering the cavities in accordance with the spirits they harbor (*naturalis spiritus*, *vitalis spiritus*, *animalis spiritus*). A few – isolated – variations in the presentation seem not to have influenced either the teaching or the knowledge of the human body. The physician Gabriele Zerbi (1445–1505), from Verona, divided the body into anterior, posterior and lateral parts, but then described the characteristics of these parts following the order of the Mondinian description by cavities<sup>28</sup>. In the preface to his treatise, *Anatomica methodus*, Andrès de Laguna stated he was going to describe the human body following the “natural” order, *i.e.* following the transformation of food and drink, from the moment they enter the body by the mouth, to their transformation in the stomach, until the fabrication of the animal spirit in the brain. It is an interesting outline from the physiological point of view, but it does not call into question the division into stomachs understood as spirit reservoirs. For a few other anatomists, the point was to go back to the order defined by Galen. Charles Estienne wished to define “how [his] description is in agreement with Galen’s opinion”<sup>29</sup>. Although the general order of the *Fabrica* differed from that adopted by Charles Estienne, Vesalius equally declared he was conforming to the true teaching of Galen as defined in the first book of *De anatomicis administrationibus*, as he started his description with the very structure of the body, *i.e.* its bones, and he justified the order of the seven books of the *Fabrica* with an explicit reference to the anatomist from Pergamon:

In the organization of these books [of the *Fabrica*], I followed Galen’s opinion, who considers that after the

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*tionibus nouis illustrata*, Parisiis, apud Marcum Orry, 1600, p. 14 [princeps: 1598]. The noun ἀνατομή is the title of a very short text by Hippocrates, in which he summarily describes the major organs of the trunk, which can be observed after incision, cf. Hippocrates, *Anatomè*. Text established and translated by M.P. Duminil, Paris, Les Belles Lettres, 1998, pp. 199–200.

26 J. Vons, *L’anatomie au XVI<sup>e</sup> siècle (Anatomy in the 16<sup>th</sup> century)*,

<http://www.biusante.parisdescartes.fr/histmed/medica/anatomie.htm>; J. Vons and S. Velut, A. Vésale. *Résumé de ses livres sur la Fabrique du corps humain (A summary of his books on the Fabric of the human body)*, Paris, Les Belles Lettres, 2008, p. XXXIX–LX.

27 R. Eriksson, *Andreas Vesalius’ First Public Anatomy at Bologna, 1540, an eyewitness report by Baldasar Heseler, medicinæ scholaris, together with his notes on Matthæus Curtius’ lectures on Anatomia Mundini*. Edited, with an introduction, translation into English and notes by R. Eriksson, Uppsala & Stockholm, 1959.

28 Gabriele Zerbi, *Liber anatomix corporis humani et singulorum membrorum illius*, Venetiis, O. Scoto, 1502.

29 Charles Estienne, *De dissectione* I, 4, p. 8 [marginal note: *nostra descriptio cum Galeni sententia quomodo conueniat*].



description of the muscles, one has to deal with the anatomy of the veins, the arteries, the nerves and finally the viscera<sup>30</sup>.

Vesalius' book therefore does constitute a description of the human body, a *historia*, presented as the result of a *dissectio*, directed, at least in its form, to scholars and to medical students eager to know *anatomia*. None of the three terms appears in the title, though. The noun *Fabrica*, which refers to the work of the *faber* or the *opifex* (the artisan), is not a *hapax legomenon* in the field of anatomy. Although several interpretations of this noun have been proposed, none wins unanimous support among historians. The first one, according to the hypothesis defended by Jackie Pigeaud, is to be found in Cicero's *De natura deorum*. J. Pigeaud analyzes the two uses of the noun in the Ciceronian text, *naturæ fabrica* and *admirabilis membrorum fabrica*, as being respectively the fabrication work operated by nature and the result of this fabrication, *i.e.* the fabricated work. She therefore suggests translating Vesalius' title into "The human body as a work. On the work of the human body"<sup>31</sup>. This is an interesting interpretation, especially as Cicero was one of the classical authors every student knew. But between Cicero and Vesalius, there must have been intermediaries who contributed to the dissemination of the noun in medical circles, more particularly in Padua and in Paris, where anatomy was sparking renewed interest. On September 7, 1539, Giovanni da Monte (1489–1558) was appointed to the chair of *medicina practica, in paritate loci* with Francesco Frigimelica (1490–1558). The latter discovered a short anatomical treatise written by a Byzantine physician, Theophilus, high dignitary (*Protospatharios*) to Emperor Heraclius, known for a treatise on urine and another one on the pulse, *Philothea* and *Philaretos*<sup>32</sup>. One of da Monte's disciples, Giunio Paolo Crasso (1500–1575)<sup>33</sup>, professor at Padua's studium and one of Vesalius' *promotores* during his doctorate in Padua in 1537, translated the Greek pamphlet under the title *Theophili Protospatharii de corporis humani Fabrica libri quinque, Iunio Crasso Patauino interprete*. Before his translation, Crasso presents a long letter addressed to Andrea Cornaro (Andreas Cornelius), practitioner in Venice and bishop of Brescia, in which he underlines the interest of this book, presented as a *compendium*, a summary of Galen's whole work. He also lays emphasis on the religious orthodoxy of its author. The noun *Fabrica* does not feature in the preface, but other terms throughout the book refer to the notion of construction and structure<sup>34</sup>.

Did Vesalius know the translation of Theophilus' treatise by Crasso, which would have inspired him with his own title? The comparison between the two books is not conclusive. Theophilus divided his pamphlet (barely a hundred pages) into five books, following a fairly incongruous

30 *Fabrica*, Preface, fol. \*4r.

31 Cf. J. Pigeaud, "Formes et normes dans le *De Fabrica* de Vésale," (Forms and norms in Vesalius' *Fabrica*) in *Le corps à la Renaissance*, J. Céard, J.-C. Margolin and M.- M. Fontaine (ed.), Paris, Aux amateurs du livre, 1990, pp. 399-421.

32 G. Androutsos, "Théophile Protospatharios, un précurseur byzantin de l'urologie" (A Byzantine precursor of urology), *Histoire des Sciences médicales*, XLI, 1, 2007, p. 41-48.

33 A. Perifano, "Académiciens et barbares dans les *Novae Academiae Florentinae Opuscula* (1533 et 1534). Aspects d'une polémique médicale au XVI<sup>e</sup> siècle" (Academicians and Barbarians in the *Novae Academiae Florentinae Opuscula* (1533 and 1534). Aspects of a medical controversy in the 16<sup>th</sup> century), in *Les Académies dans l'Europe humaniste. Idéaux et pratiques*, M. Deramaix (ed.), Geneva, Droz, 2008, p. 168.

34 The short treatise Theophili Protospatarii, *Galenii de usu partium epitome quam de corporis humani Fabrica inscripsit libri V* was published several times in Paris and Basel in 1536 and 1537 by Ottaviano Scoto's successors (*Galenii de usu partium epitome, Item Hippocratis Coi de medicamentis purgatoriis, libellus nunquam ante nostra tempora in lucem editus, Iunio Paulo Crasso Patauino interprete*). It was included in a collection we owe to Guinter d'Andernach, *Anatomicarum Institutionum ex Galeni Sententia, libri IIII per Ioannem Guinterium Andernacum Medicum*, Parisiis, apud C. Neobarum, 1540; Lugduni, apud Seb. Gryphium, 1541; it was published again in Paris by Morel both in 1555 and in 1556 (with the text in Greek).

order. One successively finds the study of the viscera (heart, lung), the epiglottis and the voice in the first three books; then the study of the bones of the cranium, their sutures, and the eye (Book IV); finally, the last book, entitled *De artificio corporis humani*, presents the spinal cord and the nerves on the one hand, the female organs destined to reproduction and the conservation of the human species on the other. This *Fabrica* is entirely devoted to celebrating the wisdom of the Creator, and its composition is completely different from that of Vesalius' book.

Other occurrences of the noun *Fabrica* can be found in contemporary or later anatomical treatises. In the *proemium* of Book I of *De dissectione* (I, p. 3), Charles Estienne praises the *fabrica tanti operis* [that is to say the fabrication of the body]. Although, as far as I know, Guinter d'Andernach, Vesalius' master in Paris, does not use the noun, he does know the verb *fabricare*, as well as nouns with a close meaning, *structura*, *fabricatio*, *constitutio*, referring simultaneously to the notion of organization of the body and to that of the structure of the book that deals with this organization<sup>35</sup>. Fabrici d'Acquapendente, Vesalius' disciple, coordinated *structura* and *fabrica*<sup>36</sup>. But for Vesalius, the main point was to go from the know-how to the phrasing, from the practice of anatomy to its writing, from the discovery of the fabrication of the body to its description or *historia*<sup>37</sup>.

Although the fabrication of the body can only be discovered through dissection, its understanding is linked with the urge to go back to true medicine and to derive directly from Hippocratic antiquity. To the organization of the parts of the human body corresponds that of the whole book, in an architectural construction of elegant proportions in which one can find similar preoccupations to those of Vitruvius or Dürer. The translation by "fabrication" can therefore be justified insofar as we also speak of the fabrication or the organization of an edifice. This definition, still present in Littré, who does not exclude the previous interpretations, is based on a transfer from the vocabulary of the architecture of building to that of the body, in reference to Vitruvius. Here may well lie the true originality of the work, which associates the construction (or re-construction) of the body to the construction of the book. Indeed, the noun *fabrica* obviously pertains to the language of architecture, constitutes even one of the defining elements of architecture in the Vitruvian treatises, where the *fabrica* consists in giving form to matter according to a pre-defined drawing, thanks to the work of one's hands, and is considered as important as *ratiocinatio*, the demonstration and explanation of the exact relations between the *res fabricatas*<sup>38</sup>. Gérard Mercator (1512–1594) used the noun with this particular

35 Guinter d'Andernach, *Institutionum Anatomicarum secundum Galeni sententiam ad candidatos Medicinæ Libri quatuor, per Ioannem Guinterium Andernacum medicum, ab Andrea Vesalio Bruxellensi, auctiores & emendatiores redditi*, Venetiis, in officina D. Bernardini, 1538.

36 Girolamo Fabrizio Acquapendente, *Tractatus anatomicus triplex quorum primus de oculo organo*, liber I, caput 1: primo enim totius oculi fabricam structuramque patefaciemus; edition we used: per Johann Theodorum de Bry denuo publicatus, [s. l.], 161. [=1612]. Cf. A. Olivieri, "La Structura à la Renaissance" (Structure at the Renaissance), in *Médecine et médecins au XVIe siècle* (Medicine and physicians in the 16<sup>th</sup> century), M. Viallon (ed.), Saint-Etienne, Presses de l'Université de Saint-Etienne, 2002, pp. 85-91.

37 *Andreas Vesalii Bruxellensis, medici Cæsarei epistola, rationem modumque propinandi radicis Chynæ decocti, quo nuper inuictissimus Carolus V. Imperator usus est, pertractans*, Basileæ, ex officina Ioannis Oporini, 1546. (edition we used: *Opera omnia anatomica et chirurgica cura Hermanni Boerhaave et Bernhardi Siegfried Albini in duos tomos*, Lugdunum Batavorum, apud J. du Vivie and J. and H. Verbeek, 1725, t. II, p. 649: *uera hominis fabricæ historia*).

38 Vitruve (Marcus Vitruvius Pollio), *De architectura* I, 1: *Fabrica est continuata ac trita usus meditatio ad propositum deformationis quæ manibus perficitur e materia cuiuscumque generis opus est. Ratiocinatio autem est quæ res fabricatas sollertiae ac rationis proportionem demonstrare atque explicare potest.* Edition we used: Venetiis, Johannes de Tacuino, 1511, n. p., in *Architectura. Les livres d'architecture, Manuscrits et imprimés publiés en France, écrits ou traduits en français (XVIe siècle-XVIIe siècle)* (*Architecture books, manuscripts and printed documents published in France, written in French or translated into French, 16<sup>th</sup>-17<sup>th</sup>*)

meaning in the dedicatory letter to his major work *Harmonia* to refer to the “fabrication” of the world maps, *totius mundi Fabrica*<sup>39</sup>. And Montaigne, in his translation of Raymond Sebond's *Théologie naturelle*, also wrote: “Who could give the true measure and estimate the real value of this fabrication?”<sup>40</sup>.

The fabrication of the body is inspired from analogies with the fabrication of things and the world itself. In order to illustrate the role of the bones and cartilages in the human body, Vesalius resorts to a visual image, that of the construction of a farmers' hut, already built, but still devoid of any surfacing<sup>41</sup>. This is a recurring image in the treatise, which is also representative of the singularity and the originality of its composition, insofar as the bones, the deepest and sturdiest part in the body, are given a much more considerable place in Vesalius' two treatises than is the case in other, anterior and contemporary, anatomical books. The correspondence between the qualitative value granted to matter (the bone structure) and the place it occupies quantitatively is to be noted from the point of view of the literary and architectural construction, as it obeys the mathematical definition of analogy provided by Vitruvius: “analogy is a relation of proportion, a *measurement, a reasoned relation between the part and the whole*, in any book and within a given book taken as whole”<sup>42</sup>. Since the bones and cartilages are the basis of the body, they constitute the basis of the treatise. The 168 pages of the first book are devoted to them, and to these one must add the 188 pages of Book II, which feature numerous illustrations, but are dedicated to the muscles, these instruments of voluntary movement, and represent about a half of the treatise. It is on this basis that the veins and arteries (Book III), then the nerves (Book IV) are progressively attached. Then the three cavities are described as they appear in the order of opening and exploration of the body, governed by the natural laws of putrefaction: the nutrition and generation organs (lower cavity, Book V), the heart (median cavity, Book VI) and finally the brain (upper cavity, Book VII). The complexity of the general plan as well as the frequent references from one book to another and from one illustration to the next testify to the perfect mastery of the contractor, who is a new *opifex*, the architect and artisan of a body that is reconstructed through words and images. The writing of the book is subtly balanced between two processes: describing the fabrication of the body, and writing a fabrication of the bodies. The anatomist is not content with mere description any longer, but aims at understanding how the human body is organized. Most of Vesalius' successors and translators proved more circumspect in the terms they chose to use, or favored description, from Jacques Grévin's *Portraits*<sup>43</sup> to Plantin's body images painted from real life, or to the anatomical

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centuries), database compiled by F. Lemerle and Y. Pauwels, <http://architectura.cesr.univ-tours.fr>.

39 Cf. A. De Smet, “Les géographes de la Renaissance” (Geographers at the Renaissance), *L'univers à la Renaissance: microcosme et macrocosme (The universe at the Renaissance: microcosm and macrocosm)*, Brussels, Presses universitaires de l'ULB, 1970, pp. 13-30. Interesting use of this term by this geographer, Vesalius' contemporary and fellow countryman, disciple to Gemma Frisius, a printer from Louvain, friend of Vesalius; the human body in Vesalius' work can also be viewed as a map on which the course of the vessels and nerves is visible.

40 Montaigne, *La Théologie naturelle de Raymond Sebond, traduite en français par Michel, seigneur de Montaigne (The natural theology of Raymond Sebond, translated into French by Michel de Montaigne)*, Rouen, Jean de la Mare, 1641, p. 191.

41 *Fabrica* I, p. 5.

42 Vitruvius, *De Architectura* III, 1, cf. *supra*, note 38.

43 J. Grévin, *Les portraits anatomiques de toutes les parties du corps humain gravez en taille douce par le commandement de feu Henry huitiesme, Roy d'Angleterre, ensemble l'Abbrégé d'André Vesal & l'explication d'iceux, accompagnée d'une déclaration Anatomique par Jacques Grevin de Clermont en Beauvoisis medecin à Paris (The anatomical portraits of all the parts of the human body engraved by the request of Henry 8, King of England, forming together Vesalius' Summary, and their explanations, along with an anatomical declaration by Jacques Grevin from Clermont en Beauvoisis, physician in Paris)*, Paris, André Wechel, 1569. Cf. J. Vons, “Jacques Grévin (1538-1570) et la nomenclature anatomique française” (Jacques Grévin and the French anatomical no-

theatres where watching is sufficient.

## Choosing illustrations

J.B. de C.M. Saunders and C.D. O'Malley were absolutely right when they wrote that the two most beautiful illustrated science books of the Renaissance were printed in Basel, referring to Vesalius' *De humani corporis Fabrica*, and Fuchs' *De stirpium historia*<sup>44</sup>. This fact is due both to the drawer and engraver's talent, as well as to the quality of the material that was used. W. Wiegand has established that the engraved plates of the *Fabrica* were made out of pear-tree, very finely sanded and coated with linseed oil, which allowed gouges to carve the precise details of the drawing along the grain<sup>45</sup>. In addition, this treatment improved the wood resistance to worms, thus ensuring the durability of the woodblocks, the traces of which can be followed across time, though not linearly, and usually independently from the text. Thus, when Oporinus died, the woodblocks that had been carved again for the 1555 edition of the *Fabrica* were probably transmitted to Hieronymus Froben (1501-1563), Erasmus' godson – and then in the 17<sup>th</sup> century to Ludwig König, the successor of the Frobens. They seem not to have been used until they were purchased by Johann Andreas Maschenbauer, a printer and bookseller from Augsburg, who attributed them to Titian, and used 19 of them for an anatomical treatise destined to painters and engravers, entitled *Andreae Vesalii Bruxellensis, Des Ersten Besten Anatomici Zergliederung des Menschlichen Körpers auf Mahlerey und Bildhauer-Kunst gericht. Die Figuren nach Titian gezeichnet, bei Andreas Maschenbauer*, published in 1706 and again in 1723. Then in 1774, they were purchased by R. von Woltter, first physician at the Bavarian court, who in turn left them to surgeon Heinrich Palmatius Leveling (1742-1798); in 1781, the latter, professor of anatomy in Ingolstadt who had studied in Strasbourg, published – among other scholar books – an anatomical treatise entitled *Anatomische Erklarung der Original figuren von Andreas Vesal, samt einer Anwendung der Winslowischen Zergliederungslehre, in sieben Buechern*, featuring Vesalius' original figures and a translation of *Exposition anatomique de la structure du corps humain* by Jacques-Bénigne Winslow<sup>46</sup>. In 1800, Ingolstadt was captured by the French, and the woodblocks were safeguarded in Landshut in Bavaria before entering the store room of the Munich University Library. They were used for the last time in 1934 for a luxurious reproduction of *Icones anatomicæ* published in New York and in Munich. In July 1944, they were destroyed pursuant to air raids on Munich<sup>47</sup>.

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menclature") in *Lire, choisir, écrire. La vulgarisation des savoirs du Moyen Âge à la Renaissance (Reading, choosing, writing. The popularization of knowledge from the Middle Ages to the Renaissance)*, V. Giacomotto-Charra and C. Silvi (ed.), Paris, Études et rencontres de l'École des Chartes, 2014, pp. 133-147; *ead.*, "Jacques Grévin, traducteur de Vésale. Questions de nomenclature anatomique," (Jacques Grévin, translator of Vesalius. The question of anatomical nomenclature) in *Formes du savoir, Verba section: [http://www.msha.fr/formesdusavoir/index.php?option=com\\_content&view=article&id=101&Itemid=153](http://www.msha.fr/formesdusavoir/index.php?option=com_content&view=article&id=101&Itemid=153)*.

44 J. B. de C. M. Saunders and C. D. O' Malley, *The illustrations from the Work of Andreas Vesalius of Brussels*, Cleveland and New York, The World Publishing Company, 1950 [2nd ed.], pp. 21-22.

45 Cf. W. Wiegand, "Marginal Notes by the Printer of the Icones," in S.W. Lambert, W. Wiegand, M.Jr Ivins, *Three Vesalian essays to accompany the Icones anatomicæ of 1934*, New York, MacMillan, 1952, pp. 25- 42.

46 Cf. J. B. de C. M. Saunders and C. D. O' Malley, *The illustrations from the Work of Andreas Vesalius of Brussels*, Cleveland and New York, The World Publishing Company, 1950 [2nd ed.], p. 10. Leveling's book does not feature any portrait, and several missing small woodblocks were engraved again, as well as eight plates.

47 Cf. H. Cushing, *A bio-bibliography of Andreas Vesalius*, Hamden-London, Archon books (2nd ed.), 1962, pp. 97-107; E. Cockx-Indestege, *Andreas Vesalius. A Belgian census: contribution towards a new edition of H.W. Cushing's bibliography*, Brussels, Royal Library, 1994; M. Biesbrouck, *Andreae Vesalii Opera, Description of the Editions of Andreas Vesalius's Work*, <http://www.andreasvesalius.be/>

But, whereas Vesalius specified to Oporinus the names of the Milanese merchants who transported to Basel the precious engraved woodblocks, and mentioned he had loaded them himself, with the help of the engraver, friend of Nicolas de Stoop, nowhere did he reveal either his identity or that of the drawer(s)<sup>48</sup>. Some said that Vesalius wished to keep for himself the glory he thought the book would bring about. But on what grounds was this allegation made? Although Leonhart Fuchs was one of the few scholars to represent the three artists who assisted him in producing the treatise *De historia stirpium commentarii insignes*, published by Isengrin in Basel in 1542<sup>49</sup>, Vesalius himself, in 1538, in the Preface to the *Tabulæ Anatomicae sex* addressed to the physician Narciso Verdum from Naples (Narcissus Vertunus Parthonopeus), had praised Jan Stefan von Calcar, who had drawn the last three plates and had also covered printing costs. And in 1539, in his short treatise on bloodletting, he wrote yet again: "If we were to give the excellent painter Jan Stefan the possibility to draw dead bodies as he sees fit, he would not refuse"<sup>50</sup>.

### The frontispiece

The illustrations in the *Fabrica* fall into several categories: the frontispiece, the author's portrait, the anatomical plates in various formats, the dropped initials and the explanatory drawings – the latter by Vesalius, and expressly labeled as such. The famous anatomy lesson that opens the volume and is at the origin of an abundance of dissection scenes, nearly obligatory *topoi* to announce an anatomical treatise, focused the attention of researchers. In addition to Saunders and O' Malley's analytical explanation<sup>51</sup>, which dates from 1950, let us mention the original pedagogical presentation made by Magali Vene and Jacques Gana in the first virtual exhibition of the BIU Santé in April 1999<sup>52</sup>, as well as the historical and philosophical interpretations of J. Sawday<sup>53</sup> and A. Cunningham<sup>54</sup>, frequently cited. What strikes one immediately is the absence of the usual referential models in 16<sup>th</sup> century medical books: no medallions, no busts of ancient authors, either Hippocrates' or Galen's, both praised in the preface though, respectively as the

48 The very abundant – and frequently repetitive – bibliography on the question does not provide a definitive answer. Jan Stefan von Calcar is frequently cited as the drawer, cf. for example, F. Guerra, "The identity of the artists involved in Vesalius' *Fabrica*, 1543," *Medical History*, 13, 1969, pp. 37-50; A. Flocon, "Les artistes du XVI<sup>e</sup> siècle et la fabrique du corps humain" (16th century artists and the fabrication of the human body), *Sciences de la Renaissance*, Paris, Vrin, 1980, pp. 159-173; J. Hazard, "Jan Stephan van Calcar, précieux collaborateur méconnu de Vésale" (Vesalius' unsung precious collaborator), *Histoire des Sciences médicales*, XXX, 4, 1996, pp. 471-479; J. B. de C. M. Saunders and C. D. O' Malley, *The illustrations from the Work of Andreas Vesalius of Brussels*, Cleveland and New York, The World Publishing Company, 1950 [2nd ed.], pp. 12-28.

49 The three artists in question are Albrecht Meyer from Basel, who drew the plants from real specimens – Heinrich Füllmaurer from Harrenberg, who transferred the drawings onto wood – and Veit Rudolf Speckle from Strasbourg, who engraved them.

50 *Andreae Vesalii Bruxellensis, scholae medicorum Patauinæ professoris publici, Epistola docens venam axillarem dextri cubiti in dolore laterali secundam: et melancholicum succum ex venæ portæ ramis ad sedem pertinentibus, purgari*, Basileæ, in officina Roberti VVinter, 1539, p. 66. Jan Stefan von Calcar (born between 1499 and 1510 in Calcar, near Wessel on the Lower Rhine, cradle of Vesalius' paternal family, and died between 1546 and 1550) was probably one of Titian's pupils; after studying with Jan van Scorel (1495-1562) in Utrecht, Calcar travelled in Italy, first in Rome, then in Venice, from 1532. He may have met Vesalius during the clinical study periods the latter made in Venice in 1537. Cf. the analysis of various drawings attributed to Jan Stefan van Calcar by N. Dacos, *Roma quanta fuit*, Brussels, 2004 [French ed.], pp. 109-111 and 118.

51 J. B. de C. M. Saunders and C. D. O' Malley, *The illustrations from the Work of Andreas Vesalius of Brussels*, Cleveland and New York, The World Publishing Company, 1950 [2nd ed.], p. 42 (1543 frontispiece), p. 44 (1555 frontispiece), pp. 248 to 252 (drawings and sketches for the frontispiece).

52 M. Vene and J. Gana, *Les frontispices des livres de médecine (Medical books frontispieces), virtual exhibition organized by the BIUM*, April 1999, <http://www.biusante.parisdescartes.fr/expo/image014/image.htm>

53 J. Sawday, *The body emblazoned, dissection and the human body in Renaissance culture*, London and New York, 1995.

54 A. Cunningham, T. Hug, *Focus on the frontispiece of the Fabrica of Vesalius, 1543*, Cambridge, Cambridge Wellcome Unit for the History of Medicine, 1994; see also Park K., *Secrets of Women: Gender, Generation, and the Origins of Human Dissection* (translated into French by M. Quiniou), Paris, Fabula, 2009.

“divine Hippocrates” and the “prince of anatomy professors after Hippocrates”<sup>55</sup>. No references either to the allegorical tradition: Asclepius and his snake, Medicine and her mirror are absent. The central scene illustrates the new conception of anatomical teaching, in which Vesalius endorses the triple role of master, demonstrator and dissector, and this can be seen as a *mise en abyme* of the whole book: same movement, same dynamism, same attention to detail.

Below a blazon with three weasels, whose name in Dutch (*wezel*) recalls the etymology of Vesalius’ family name, the light-colored cartouche immediately catches the eye, and constitutes a drawing within the drawing<sup>56</sup>. The author’s name appears in spaced capitals, larger than the rest of the title; beneath the name, the geographical origin of the author (Brussels) and the place where he has his practice; and finally, in small letters, the title of the book. The author’s name is not brought out anywhere else in the book, which contains no laudatory poem or recommendation signed by renowned authority either. The presence of a large audience though can be considered as the best homage rendered to the anatomist. Who are these spectators? On the left, Oporinus looking at the naked man, and maybe other humanists who adopted Reformation, or protectors and friends of the author; on the right, in the forefront, Realdo Colombo, and on the rows the Galenist humanists (Sylvius, Guinter); in the middle, the disciples and other friends, Fallope, Ingrassia, Calcar even; Titian is represented behind Vesalius’ shoulder<sup>57</sup>. Such reading, if plausible, is not merely anecdotal. It is certain that the representation of an audience comprising learned men and scholars, some of them won over, the others hesitating still, was to illustrate the persuasive force of public dissection promoted by Vesalius. The diversity of the attitudes, taken from life or imagined, and the variety of the expressions and gestures, from interest to rejection, which infuse so much life to this engraving, illustrate the polemical value of such a frontispiece, microcosm of all the ideas on both the medical art and the role of dissection in teaching. Beyond the mere accumulation of supporters and detractors, modernity and attachment to the past are being confronted, in a fairly simple opposition of figures and lighting effects.

In the background, the decor is reminiscent of the niches and colonnades of the portico frontispieces, but here we find a nice semicircle perspective effect. It may represent the portico of the University of Padua, but also constitutes an imaginary construction along with its fluted pillars, Corinthian capitals, metopes ornamented with an ox skull (emblem of Padua’s studium) and a lion’s head (emblem of Venice), and also a plant (the only vegetable element) clinging on the left arch<sup>58</sup>. Just as the audience, the place is a composite decor encompassing several architectural schools, and opening the field of correspondences between the body and the edifice:

55 For example, *Galen’s Methodus medendi*, in the translation given by Lunacre, large in-folio published in Paris in 1530 by Simon de Colines, is representative of an iconography aiming at syncretism: the title appears in a central space framed with pillars against which Asclepiades and Dioscorides are standing, while compartments highlight Hippocrates, Galen, Paul of Aegina and Oribasius. On this frame “to the physicians,” see the analysis of the various colophons and title pages in J.P. Pittion, *Le livre à la Renaissance. Introduction à la bibliographie historique et matérielle (The book at the Renaissance. An introduction to historical and material bibliography)*, Turnhout, Brepols, Bibliothèque de Genève, 2014, pp. 87-96.

56 A smaller cartouche at the bottom of the page indicates that the book is (theoretically) protected by the privileges of the Emperor and the Senate of Venice, cf. *Fabrica*, Preface (Letter to Oporinus).

57 V. Perez Fontana, *Andreas Vesalius y su época*, Montevideo, Ministerio de Salud pública, 1963, pp. 221-230, proposes an identification for all the characters on the frontispiece, comparing them with other engravings and portraits; the interpretation is quite interesting, but fails to fully take into account the conventions in this type of representation.

58 M. Vene notes that the mysterious sign (a circle transversed with an I) in the top left corner can hardly be interpreted as Johann Oporinus’ monogram  $\Phi$ , because the woodblocks were engraved in Venice (cf. note 51). This monogram is not featured on the 1555 frontispiece (see *infra*).

on the model of the perfect assemblage of the arch, Vesalius builds and describes a vertebra as a keystone to explain the equilibrium of the rachis<sup>59</sup>. It is therefore both a closed and an open space, an ephemeral place<sup>60</sup> with rows and a dais, which puts the reader in a privileged position compared to that of the drawn spectators, insofar as he/she is invited by the anatomist's gaze and gesture to enter the book in which the secrets of anatomy are revealed, just as the inside of the body is revealed on the illustration. The shortened female body, in the manner of Mantegna, is, according to Jonathan Sawday, a reminder of human mortality and finitude, and it also places the scene in the reality painted "from real life." Of course, the story of this prostitute hanged for witchcraft is true and Vesalius repeatedly alludes to it, but at the same time, opening the abdomen and the uterus, and representing this action, is endowed with a strong symbolic significance, authorizing the physician to transgress the social and religious taboos<sup>61</sup>. Being a privileged intermediary, the anatomist shows both the origin of life with his right hand, and what will become of us after our death with his left hand – as is recalled by the skeleton placed above the opened abdomen. Disseminated details (scalpel, razor, sponge, lit candle, but also paper and inkwell) announce the implemented method: the descriptive text proceeds from the dissection, not the contrary.

### The portrait

It is the only portrait of Andreas Vesalius engraved in wood. It is featured after the preliminary texts and truly initiates the anatomical description; it also appears in the *Epitome* in Latin and in German<sup>62</sup>, in the *Letter on the Chinese root* published in 1546<sup>63</sup> and in the second, 1555 edition of the *Fabrica*. In addition, it was used as a model for numerous paintings<sup>64</sup>. With his body slightly turned and his head oriented to the right, Vesalius is represented staring at the reader in quite a dramatized composition, lined by the fringe of the curtain, cutting short the oversized chest of the subject, whose tendons appended to the hand are lying on the table – along with a razor, a quill in an inkpot, and a half-rolled parchment showing the title and the beginning of a chapter 30 bearing on the motor muscles of the fingers. In the 1543 *Fabrica*, however, these muscles are described in chapter 43 of Book II, which does start with the truncated text on the parchment, referring to the description of the finger bones featured in the previous book (*Quum superiori libro quinque digitorum ossium constructionem prosequeretur ... aliud a... quam*). We therefore suppose there was a former version of the treatise, not as developed, but following the

59 *Fabrica* I, p. 76. The image of the vertebra as a keystone was also used by Galen and Sylvius, but Vesalius differs on the place of the vertebra in question.

60 The first anatomical amphitheatre was built in Padua in 1584, *i.e.* an earlier date than that usually given, cf. C. Campana, "Girolamo Fabrici d'Acquapendente," in *Pratique et pensée médicales à la Renaissance*, J. Vons (ed.), Paris, BIUM-De Boccard, 2009, pp. 273-286.

61 *Fabrica* V, p. 539. The scene concerns both physicians and philosophers interested in the mysteries of life and generation.

62 See *supra*, note 15.

63 *Andreae Vesalii Bruxellensis, medici caesarei Epistola, rationem modumque propinandi radicis Chynae decocti [...]*, Basileæ, ex officina Ioannis Oporini, 1546.

64 On the various portraits of Vesalius, see for example the notes by J. B. de C. M. Saunders and C. D. O' Malley, *The illustrations from the Work of Andreas Vesalius of Brussels*, Cleveland and New York, The World Publishing Company, 1950 [2nd ed.], p. 41; D. Jdanov, T.D. Fomitcheva, "Un portrait de Vésale à l'Ermitage de Leningrad," (Vesalius' portrait at the Leningrad Ermitage), *Acta Anatomica*, 59, 1964, pp. 361-378; W. J. Broad, "Is Founder of Modern Anatomy Subject of Mysterious Portrait?," *Science*, 202, 1978, pp. 1164-1165 (portrait attributed to Tintoretto); S. Kottek, "André Vésale. Some remarks on a painting by E.J.C. Hamman," *Koroth*, 8, 1982, pp. 135-143. The Paris Académie nationale de médecine owns a portrait that is supposed to be of Vesalius, oil on cloth, offered by Baron Portal in 1820.

same structure<sup>65</sup>. On the edge of the dissection table, one can see the age of the anatomist and the year the portrait was done, 1542, *i.e.* the year preceding the publication. Beneath the edge of the table, an engraved inscription: OCYVS, IVCVNDE ET TVTO reminds of the aphorism Celsus attributed to the Asclepiades: “quickly, smoothly and safely”<sup>66</sup>. Vesalius is wearing rich clothing, his hand is tightly holding the dissected arm, and although this vertical dissection is particularly difficult, everything shows the assurance and authority of the master, whose name in the genitive is inscribed above the portrait; the point is therefore not to name the author (which would be done in the nominative), but to give the image the status of a name: this is the portrait of Andreas Vesalius. This process is evocative of a new writing, in which text and image are on an equal footing – yet another metonymy for the whole book.

### The anatomical plates

The three skeletons in Book I and the fourteen full-page flayed figures in Book II are probably the anatomical plates that have been the most frequently reproduced, imitated and interpreted by anatomists, artists and philosophers alike<sup>67</sup>. The series of flayed figures is in close relation with the succession of dissection operations of the muscles presented in the second book and, just as the vein plates in the third book and the nerve plates in the following one, it will be analyzed in the introduction to these books. An exception was made, however, for the plates representing the human bones, because their symbolical value transcends their anatomical usage and the recognition of their artistic status. Of course, the skeletons result from the artificial mounting of the bones and their description follows the chapter devoted to their preparation (chapter XXXIX from Book I), but they are also the illustrated synthesis of the contents of Book I, the reward to who now knows the bones. The place they hold in the *Fabrica* gives them a pivotal role, as both a conclusion and a prelude, which metonymically doubles the composition of the book: the study of the muscles and other organs is derived from the skeleton, basic structure of the body. As in the other anatomical plates, the presentation is extremely pedagogical, and the relatively few typographical characters, contrary to what is the case for the *Epitome*, remain legible without marring the image<sup>68</sup>. The three figures did not escape criticism: the proportions are faulty, the thorax too short, the lumbar rachis too long and devoid of

65 H. Cushing, *A bio-bibliography of Andreas Vesalius*, Hamden, Connecticut, 1962 (2nd ed.), p. 84, is the only one to have noticed that the small isolated ‘a’ indicates a marginal note, referring to chapter 27 from Book I, which describes the bones to which these muscles are attached. C.D. O’ Malley, *Andreas Vesalius of Brussels. 1514-1564*, Berkeley and Los Angeles, University of California Press, 1964, pp. 148-149 and p. 442, notes 41-42, suggests other explanations, which are not as evident, but were often used later.

66 Celsus, *De Medicina* III, 4, 1: Asclepiades officium esse medici dicit ut tuto, ut celeriter, ut iucunde curet, J. Henderson (ed.), London, The Loeb Classical Library (reed.), 2002, p. 230. This reference to Celsus, correctly given by O’ Malley (*ibid.* p. 442 note 39), is frequently inexact, or not given at all, in later articles. I.L.M. Donaldson, “Andreae Vesalii Bruxellensis Icones anatomicae. Part II,” *Journal of the Royal College of Physicians of Edinburgh*, 42, 2012, p. 280, mentions the discovery and discussion of a similar inscription, dated 13 September 1553, in Mons (Montis Hannonie), equally attributed to Vesalius, in the *Album medicorum* by Abraham Ulrich (1526-1577), theologian and partisan of the Reformation, (edited by Wittenberger, *Das Stammbuch von Abraham und David Ulrich: benutzt von 1549-1577 sowie 1580-1623*, Halle, 1999).

67 The documentation on the illustrated scientific book at the Renaissance is too extensive to be addressed in the present introduction. On the history of the copies of the anatomical plates from the two editions of the *Fabrica* and the *Epitome*, cf. the study by É. Turner, “Les six premières planches anatomiques de Vésale et leurs contrefaçons,” (Vesalius’ first six anatomical plates and their counterfeit copies), *Gazette hebdomadaire de médecine et de chirurgie*, 17, 1877, pp. 261-271 (the article also discusses the plates from the *Epitome* and the *Fabrica*).

68 The possibility to zoom offered by the digitized edition of the *Fabrica* makes it easier to read the typographic signs, and leaves intact the anatomical structures they refer to.



curve, the extremities of the limbs disproportionate<sup>69</sup>. Nevertheless, their expressive force lies in the dramatization orchestrated by Vesalius, partly through props that may be either represented or suggested, as well as in the stereotyped and coded attitudes or in the multiple reflections within the book. The seated skeleton, with its head tilted backwards and sideways and a long stalk in its hand, overhanging the anatomical lesson of the frontispiece, finds its inverted reflection, equally in frontal view, but standing and leaning on a useless spade, in an essentially mineral decor, on the only page featuring a landscape in the background. The following two skeletons take the reader's imagination even further; the last one is seen from behind, in an uneasy position, without any bearing point, leaning forward, with its fingers intercrossed, in front of a pile of rocks, or open tombs, the very image of desolation, on an empty background. One single of these skeleton figures is also featured in the *Epitome*<sup>70</sup>; it is the lateral view of a skeleton in a barely sketched natural decor, in which the mass of the pedestal imposes itself. The figure has spanned centuries, engraved or sculpted, more or less modified, but always recognizable. The skeleton, with its feet crossed, is leaning on a pedestal, its maxillary bone on its left hand, while its right hand lies on a cranium placed on the pedestal. Next to the cranium are a few isolated ossicles: the hyoid bone, the hammer (preceded with an asterisk) and the anvil (signaled by the mark:  $\wp$ ). The motif and the posture are in keeping with the philosophical tradition of the *memento mori* and the vanity paintings, and this is how later reproductions will interpret the image, either modifying the inscription, or leaving empty the surface of the trunk<sup>71</sup>. Indeed, the motto written on the pedestal of the 1543 *Fabrica* is quite unique in this long series of images; it is a quotation from Virgil: "Meonian songs shall vanquish marble monuments. Only the spirit survives; all the rest belongs to death"<sup>72</sup> – a superb eulogy to talent and the poetic genius, capable of creating a true image, truer and more durable than effigies<sup>73</sup>. In the *Epitome*, the exaltation of the power of art gives way to more ordinary lamentations on destructive death, borrowed from the Latin poet Silius Italicus (25–101 A.D.): "The color of the Styx spreads over the white-as-snow bodies, negating the homage that had been rendered to their beauty"<sup>74</sup>.

### The dropped initials

The presence of numerous dropped initials of various sizes gives an obvious ornamental value to the book, and immediately indicates it pertains to luxury 16<sup>th</sup> century illustrated edition. However, their significance for the anatomical practice, the subtlety of their insertion in such

69 Cf. for example the analyses by J. B. de C. M. Saunders and C. D. O' Malley, *The illustrations from the Work of Andreas Vesalius of Brussels*, Cleveland and New York, The World Publishing Company, 1950 [2nd ed.], pp. 84-89; P. Huard and M.J. Imbault-Huart, *André Vésale : iconographie anatomique (Fabrique, Epitome, Tabulae sex) (Andreas Vesalius: anatomical iconography)*, Paris, ed. R. Dacosta, 1980, pp. 84-88.

70 The *Epitome* is a larger in-folio than the *Fabrica*; the transfer of engravings (frontispiece, plate of the skeleton Ka) left an empty space at the bottom of the page; conversely, the diagram of the nerves transferred from the *Epitome* to the *Fabrica* made it necessary to fold the page.

71 On this topic, see for example J. Clair (ed.), *Mélancolie. Génie et folie en Occident (Melancholy, Genius and Folly in the West)*, Paris, Gallimard, 2005 pp. 134-196; A.-É. Spica (dir.), *Discours et enjeux de la Vanité (Discourse on Vanities and their meaning)*, *Littératures classiques*, 56, 2006 [special issue]; a picture gallery is currently being constituted.

72 *Appendix vergiliana*. In *Mæcenatis obitum : Marmora Mæonii uincent monumenta. Viuitur ingenio, cætera mortis erunt. Meonian songs are Homeric songs, after the name Meonia Homer gives to Lydia.*

73 This exaltation of the creative power of the spirit can also be found in other artists at the beginning of the Renaissance, see for example A. Dürer, *Portrait de Pirckheimer*, engraved in 1524. Cf. *supra*, note 71.

74 *Soluitur omne decus leto, niueosque per artus / it Stygius color, et formæ populatur honores.*

or such chapter, their repetitions, in one word, their interplay with the text has been little studied so far. They may reflect first and foremost Oporinus' taste and choices, Basel printers being famous for their decorative motifs, but on the other hand they are absent from the other books printed in the workshop, except the *Epitome* published in 1543<sup>75</sup> and the *Letter on the Chinese root* published in 1546, for which Oporinus used three of the 1543 large capitals (O, Q and T). The style of the capital letters is the same in the 1555 edition of the *Fabrica*, but the decor, the scenes and the characters changed and a fifth large capital was created to illustrate the punishment of Marsyas<sup>76</sup>. The ornate V in the first word of the 1555 modified preface is the hallmark of this second edition<sup>77</sup>. The other initials, I, O, Q and T, each 7.4 cm high, are common to the two editions and illustrate scenes of contemporary medical life. Thus, the Q placed at the beginning of the preface and also at the beginning of the descriptive text in Book V represents an animal dissection (or vivisection), the O (Books I and III) shows *putti* busy around a fire and a cauldron in which the bones will be cleansed, following the modern method advocated by Vesalius in chapter XXXIX from Book I, the I (Books II and VII) features the nocturnal exhumation of a corpse, while a dog is being hoisted by its hind legs on the gallows of the T (Book IV).

Eighteen smaller dropped initials (3.7 cm high), framed with a double line, are placed at the beginning of the chapters. They illustrate more particularly surgical acts: bladder-probing in a lying (A) and a sitting (I) position<sup>78</sup>, cauterizing (H), bloodletting (V), Cesarean section on a dog (Q); a series of images reconstructs a fictitious itinerary, from the punishment, hanging (T) or beheading (O)<sup>79</sup>, to the *post mortem* examination (S), going through the unhooking (L), the transportation of the body (N), the maceration of the corpse in lime and its cleansing (C)<sup>80</sup>. The dissected subjects are either men (dissection of a decapitated head on the dropped initial D) or animals (dissection of the eye muscles in R). Two small grotesque scenes are represented on the dropped initials M and L<sup>81</sup>. Whether these ornate letters were expressly drawn for the *Fabrica* or not is of little actual importance, but obviously Vesalius knew them and made good use of them. Thus, the dropped initials E and F represent an instrument used to reduce dislocations of the femur: *putti* are busy around the human patient fitted with the glossocomion, while other *putti* are rolling up the bandages that will keep it in place – a minor surgical operation that Vesalius also inserted in the descriptive text itself, superimposed on one and the same page, to illustrate the *glossicomion* [sic] that Galen had mentioned when he described the sixth pair of spi-

75 Cf. J. Vons and S. Velut, A. Vésale. *Résumé de ses livres sur la Fabrique du corps humain* (Summary of his books on the Fabric of the human body), Paris, Les Belles Lettres, 2008, pp. LXXIV-LXVI.

76 Several studies favor the 1555 dropped initials, either because the 1555 edition is better known, or because the systematic presence of *putti* allows harmonization of and distancing from the represented scenes (whereas in 1543 *putti* stand alongside human beings). Cf. for example P. Huard and M.J. Imbault-Huart, *André Vésale: iconographie anatomique (Fabrique, Epitome, Tabulae sex)* (Andreas Vesalius: anatomical iconography), Paris, ed. R. Dacosta, 1980, pp. 193-204; R. Herrlinger, "Die Initialen in der Fabrica des Andreas Vesalius," *Acta Medicae Historiae Patavina*, 10, 1964, pp. 97-117; P. Ardouin, "André Vésale, créateur de la science et de l'art anatomique," (Andreas Vesalius, the creator of anatomical science and art), *L'Ouest médical*, 21, 1968, pp. 1031-1070, 1117-1132, 1169-1195, partially reprinted in L'Expansion, 1968, pp. 77-85.

77 See introduction to the Preface (note 27).

78 Or delivery scene.

79 Beheading was the punishment reserved for nobles.

80 Vesalius condemns this practice in Chapter 39 of Book I. The large letter O illustrates the modern method.

81 There are thus two different dropped initials L: that which represents the defecation session, possibly considered indecent in 1555, is not featured any longer in the second edition. P. Huard and M.J. Imbault-Huart, *André Vésale: iconographie anatomique (Fabrique, Epitome, Tabulae sex)* (Andreas Vesalius: anatomical iconography), Paris, ed. R. Dacosta, 1980, p. 200, recall that these little comic scenes were also part of the student tradition.

nal nerves. Better than a drawing or a diagram, the little scene allows the reader *cum* surgeon to understand the double movement of traction and reduction<sup>82</sup>. Finally, very small ornate letters, mere typographic ornaments, indicate the beginnings of the index entries.

The images in the *Fabrica* thus cannot be considered independently from the text, as they find their *raison d'être* in the text and through the text, but they are more than a mere iconographic illustration of the descriptive text; indeed, they partake of the demonstration or the controversy, they are inventive, synthetic, they substitute themselves to explanations or appeal to the reader's critical thinking<sup>83</sup>. However, the unity the author was so proud of was, from the start, denied by history, as the engraved plates got separated from the text. In fact, the plates kept being copied, reproduced, completely or partly, almost banalized all along the 17<sup>th</sup> and 18<sup>th</sup> centuries.

## The various editions of the *Fabrica*

The plates had a real editorial success, but the book itself was little published, or, to be more precise, there is a series of books presented as *Anatomies*, in which anatomical plates from both the *Fabrica* and the *Epitome* (often from the edition made by Gemini in 1545) appear, re-engraved on copper and featuring a legend, and intended for students in medicine and artists<sup>84</sup>. There were thus several very fine pieces of work, but which cannot be considered as re-editions of the *Fabrica*. During Vesalius' lifetime, there were only two authorized editions, that of 1543, and a second one, reworked in 1555, both printed by Oporinus. We must also mention an incomplete edition in two small sextodecimo volumes, published by de Tournes in Lyon in 1552<sup>85</sup>, a posthumous edition in 1568, re-edited in 1604<sup>86</sup>, and the last edition in the *Opera omnia* published by Hermann Boerhaave and B.Siegfried Albinus in Leiden in 1725<sup>87</sup>.

It is difficult to establish with certainty the number of copies that were printed in 1543, and even more uncertain to evaluate those that subsist today, as copies have been lost, others cut, others still kept secret by collectors, and randomly surfacing at auctions<sup>88</sup>. Was Vesalius already

82 *Fabrica* IV, 9, p. 329 (= 429).

83 For example the "false" human *rete mirabile* drawn on p. 621.

84 For the use of the Vesalian iconography in fine arts, see for example the superb book attributed to Titian, *Notomie di Titiano*, [Bologna], ca. 1670; F. Tortebat, *Abrégé d'anatomie accommodé aux Arts de Peinture et de Sculpture, et mis dans un ordre nouveau, dont la méthode est très facile & débarrassé de toutes les difficultés & choses inutiles, qui ont toujours esté un grand obstacle aux Peintres pour arriver à la perfection de leur Art (A short treatise on anatomy adapted to the arts of painting and sculpture, in a new order, presenting an easy method, rid of all difficult and useless elements that have always made it difficult for painters to reach perfection in their art)*, Paris, Demortain, s.d.; A. Bosse, *Différentes manières de dessiner et peindre (On various manners of drawing and painting)*, series of 52 unsigned prints, etchings, BNF Prints, Ed 30 (storeroom), <http://expositions.bnf.fr/bosse/arret/2/index.htm>.

85 *Vesalii De humani corporis fabrica libri VII*, Lugduni, apud Ioan. Tornaesium, 1552 (only the books I and II were printed); four illustrations only (images of a cranium); the title page bears the dedication *Ad carolum Quintum imperatorem*, but the original preface was replaced with a short letter of the printer to the reader.

86 *De humani corporis fabrica libri septem*, Venice, 1568; *Andreae Vesalii Anatomia addita nunc postremo etiam antiquorum anatome, tribus tabellis explicata per Fabium Paulinum*, Venise, 1604 (with a frontispiece engraved on copper). See J. Vons, *Les "Anatomies" d'André Vésale (1514-1564)* <http://www.biusante.parisdescartes.fr/histmed/medica/vesale.htm>

87 *Andreae Vesalii... Opera omnia anatomica et chirurgica a cura Hermannii Boerhaave et Bernhardi Siegfried Albinii*, Lugduni Batavorum, apud J. du Vivie and H. Verbeek, 1725. See the presentation of the book by H. Cazes, <http://www2.biusante.parisdescartes.fr/livanc/index.las?do=ana&cote=302E>

88 Cf. S. Charreaux and J. van Wijland, "Recensement et description des exemplaires de la première édition de la *Fabrica* (1543) conservés dans les bibliothèques publiques en France" (Inventory and description of the copies of the first edition of the *Fabrica* (1543) kept in French public libraries – ongoing research); M. Horowitz and J. Collins, "A census of Copies of the first edition of Andreas Vesalius' *de humani corporis Fabrica* (1543) with a Note on the recently discovered variant issue," *The Journal*

envisaging a second edition when he left the court of Charles V in Nuremberg in 1547 for a short trip to Basel, when the 1543 edition was not out of print yet, or did he have no other official purpose than meeting friends<sup>89</sup>? We do not know, but several authors underline the fact that in May 1552, a catalogue of the books printed by Oporinus announced a reviewed and expanded edition of the *Fabrica*, five books of which were ready. However, providing the printing had actually started, no trace of the selling of a partial edition was found. O' Malley makes quite a pertinent hypothesis to account for the delay between the announcement made in 1552 and the release of the book in 1555, based on several letters from Oporinus to Konrad Hubert (1507–1577), assistant to Martin Beucer in Strasbourg, written between 1551 and 1555: the work was delayed by a series of technical and financial problems (lack of paper, search for moulds to recast worn typographic characters)<sup>90</sup>.

The second edition of the *Fabrica* was published in August 1555 under the title: *Andreae Vesalii Bruxellensis, invictissimi Caroli V. Imperatoris medici, de Humani corporis Fabrica Libri septem*, with the following shortened address, featured in the colophon: Basileæ, Ex officina Ioannis Oporini, Anno Salutis per Christum partæ, MDLV, mense augusto. The printer's mark on the last folio was modified: the motto remained the same, but Arion and his lyre was replaced with a standing man playing the violin, one foot on the earth and the other one on a dolphin in the sea. E. Turner<sup>91</sup> wrote a detailed analysis of all the modifications brought to illustrations in the 1555 edition, more particularly in the frontispiece; the latter was carved anew by an unknown author (not Calcar, who was dead at the time) and is not as well-made; the symbols were simplified and are easy to decipher: the skeleton does not carry a crook any longer, but a scythe; the privilege appears on a vivisection plate; the address *Per Oporinum* makes the  $\Phi$  monogram useless<sup>92</sup>; the character in the top left corner is now wearing clothes and becomes one spectator among others. Most of the anatomical illustrations come from the woodblocks that had been used in 1543, but the inking was lesser, which makes the characters more visible, thereby increasing their pedagogical value. Some of the dropped initials were carved anew in order to adapt to the new format of the characters, the order of some of them was modified, a large V initial was added for the word *Vt cumque* replacing the *Quantumvis* that started the preface to Charles V in 1543. The text is printed in larger characters than the 1543 edition (with 49 lines

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of the *History of Medicine and allied Sciences*, 39, 1984, p. 198-221; M. Biesbrouck and O. Steeno, "De Fabrica van Vesalius ingebonden in mensenhuid," *Geschiedenis der Geneeskunde*, 13 (4), 2009, pp. 213-224; *id.*, "Nieuwe onthullingen over de 'koninklijke' Fabrica van Vesalius, ingebonden in mensenhuid op het kasteel van Argenteuil," *Geschiedenis der Geneeskunde*, 14 (1), 2010, pp. 41-44; *id.*, "Stolen and lost copies of Vesalius's *Fabrica*," *Acta med. Hist. Adriatica*, 10 (2), 2012, pp. 213-236; H. Cushing, *A bio-bibliography of Andreas Vesalius*, New-York, Schuman's, 1943 (ed. we used, London, 1962), had found and described only 33 copies in the United States in 1943, but others have been discovered since.

89 G. Wolf-Heidegger, "André Vésale et Bâle," (Andreas Vesalius and Basel), Brussels, Publications de l'Académie Royale de Médecine de Belgique, 1964, pp. 53-61, mentions (p. 57) the expenses incurred to treat Vesalius to a lunch, duly registered, but we have found no confirmation of this piece of information so far.

90 Cf. C.D. O' Malley, *Andreas Vesalius of Brussels. 1514-1564*, Berkeley and Los Angeles, University of California Press, 1964, p. 463, notes 6 to 8. O' Malley's hypotheses are confirmed by the recent research on humanist and reformed networks in Renaissance Europe. The moulds of the 1543 characters were apparently left to Francisco de Enzinas (1518?-1552), called Dryander, a major Spanish figure of the Reformation, translator of the Bible, Plutarch, Titus Livius, Lucian, printer-cum-librarian living in Strasbourg, a victim of the plague in 1552, blacklisted by the Spanish Inquisition. Oporinus bought these moulds back from his widow after 1552.

91 E. Turner, "Ce que sont devenues les planches de Vésale, publiées en 1543 dans le Grand ouvrage d'anatomie et dans l'Épitome," ("What became of Vesalius' plates, published in 1543 in the Anatomy Book and the Epitome"), *Gazette hebdomadaire de médecine et de chirurgie*, 1878, 4, pp. 49-58; 5, pp. 65-78; 8, pp. 113-119; 9, pp. 129-141; 11, pp. 161-166; 12, pp. 177-184.

92 On the interpretation of the monogram, see M. Vène's opposite view, *supra*, note 58.

per page), on a bigger format, heavier paper. The descriptive text is better separated from the illustrations, the whole is more legible and some consider it more pleasant to the eye. A list of *errata* is provided. However, these formal modifications are due to the typographer's work rather than to corrections made by the author, who was not in Basel to boot. As far as content is concerned, the main modifications to the text had been listed by Charles D. O' Malley as early as 1964<sup>93</sup>, namely suppressions (I, 1), displacements (I, 40), chapter creations (II, 10), modifications in chapter titles (II, 47), additions and suppressions of paragraphs within a given chapter. Some names also disappeared, due either to the person's death or to some controversy<sup>94</sup>.

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93 C.D. O' Malley, *Andreas Vesalius of Brussels. 1514-1564*, Berkeley and Los Angeles, University of California Press, 1964, pp. 272-281.

94 For example, the names Sylvius and Veltwijk disappeared from the Preface addressed to the Emperor.

## Our editorial choices<sup>95</sup>

### The chosen text is that of 1543

A choice had to be made: what text was to be published and translated first? Were we to consider the 1555 modifications as improvements on the original text and to prefer the final text to the first one<sup>96</sup>? It seemed to us that, insofar as nothing is ever final in science, it was more relevant to know the starting point than a term, temporary by nature, and this is why we chose the 1543 text of the *Fabrica* – and also because numerous 1555 modifications, *tantæ et tales*, only make sense in relation to the initial text. In order to compare the two editions, taking into account the content changes that we would consider as essential, based on criteria whose scientific value is none other than their current use, is not sufficient. One should also mention all the lexical, syntactic and graphical variations that clearly differentiate them, know whether they are significant or not, contextualize them relating to the evolution of the political and religious situation in Europe after 1550. It would also be necessary to describe the modifications in the illustrations, the page layout, the disposition of the titles, *etc.*, variants the author of which we do not know: was it Vesalius, or the editor, or the typesetter?

The 1543 text has the advantage of presenting the initial state of the thinking and writing of a young man who was eager to share discoveries, even though he knew they disturbed the traditions of academia, and who was obviously proud of what he was teaching – and who, for this reason, was not very good at sparing his (future) enemies' feelings. Insofar as we have no manuscript text of the *Fabrica*, we chose to respect the spelling and layout of the text established by Jean Oporinus in 1543. It is a dense, uninterrupted text; margin indications showing the contents and the outline of the work make it easier to read, though. Abbreviation clarifying proved necessary, but we did not modify the writing habits proper to the 16<sup>th</sup> century or to Vesalius, which testify to the evolution of the Latin language, either as regards pronunciation (writing preference going to *-ci-* for the group *-ti-*, for example *negocio* for *negotio*, or constant consonant-doubling, for example *connecto* for *conecto*), or as regards the choice of an etymological writing (for example: *pænire* from the Greek *παινῖν*), or else resulting from a taste for archaism (*lubet* for *libet*, I, 6). In the same way, we tried to keep the original punctuation as much as possible, except when it might have proven incomprehensible for a modern reader. An explanation is usually announced with a colon, and when several explanations succeed each other, they are all preceded with the same punctuation sign. This typographic layout has the merit of putting them all on the same plane and satisfies to the logic of the reasoning, but it does not any longer correspond to our habits, which consist in juxtaposing several explanations separated with a comma. Vesalius, very meticulous when naming and giving the characteristics of the anatomical structures (smooth, rough, *etc.*), can also be verbose and even redundant in the controversial passages, and solicitous over the lexical variations in the descriptions. The Latin syn-

<sup>95</sup> We refer the reader to the detailed list of the facsimile editions and the vernacular translations of the 1543 and the 1555 *Fabrica* established by M. Biesbrouck, *Opera Vesalij*, pp. 15-25, <http://www.andreasvesalius.be/>

<sup>96</sup> This is the reason given by L. Bakelants, *Préface d'André Vésale à ses livres sur l'anatomie, suivie d'une lettre à Jean Oporinus, son imprimeur. Texte, introduction, traduction et notes (Vesalius' Preface to his books on anatomy, followed with a letter to Oporinus, his printer. Text, introduction, translation and notes)*, Brussels, Arsacia, 1961, to justify the choice of the 1555 preface.

tax is quite varied, characterized by the use of complicated periods; conversely, there are frequent ellipses, which force the reader to pay close attention to the lexical markers underpinning the reasoning, allowing the sentence to unfold and convince the reader; one can thus notice sequences of facts, explicit links between consequence and cause, along with all the nuances allowing one to mitigate an assertion (*interim, fere, etc.*)<sup>97</sup>. It is almost as if Vesalius proceeded in his writing as in his illustrations: he does not leave anything in the dark, but at the same time persuades the reader with well-known rhetorical devices. This writing mode is what constitutes the novelty of the *Fabrica*.

## The first translation into French

In this first translation into French, we chose not to smooth out or standardize Vesalius' text, but to keep its stylistic characteristics, its lexical variety, its proliferating nature; when we thought it best to suppress cascades of subordinate clauses, we maintained the logical links between the clauses, thereby allowing one to follow the stages of the reasoning. There are numerous marks of orality: Vesalius is also a professor, who writes as if were addressing an audience of scholars and students, associates them to what he is showing, promises them later discoveries. This is probably why there are numerous repetitions, a perfectly mastered rhetoric of paralipsis, bouts of eloquence, lyricism and enthusiasm, even in the descriptions. We tried to make the reader aware of these nuances, while respecting the conventions in use at the time of Vesalius. To mention one example only, which I have often given because it seems important to me to understand the way the book was received in its time: how to translate the use of the second person of the singular, in the present or future of the indicative, normalized in Latin, but incongruous in a contemporary French text if it is not adapted to the addressee? The use of "vous" seemed necessary in the dedicatory letter to the Emperor, following modern usages, but we maintained the use of "tu" in the letter to Oporinus, a "tu" that today would be natural between two colleagues as well as between two friends (Vesalius and Oporinus had the same work ethic, belonged to the same generation, and had esteem for each other). We will see in the text of the seven books that the second person of the singular, of which any Latinist knows the indefinite value when it is used to refer to an anonymous or collective interlocutor, is better translated here by a plural "vous," frequently relayed by formulae in the imperative, in a context in which Vesalius addresses an audience and not an individual reader.

The anatomical vocabulary we used is the scientific vocabulary taught in France, either given directly or placed between square brackets when the anatomical structures Vesalius describes allow it, and accompanied with notes when identifications are not straightforward. The principle we adopted is to constantly invite the reader to refer to the original text, and to appraise the book in relation to what was known at the time.

Finally, insofar as a translator is equally an interpreter, *fidus interpres* as much as he/she can, we tried to present a character: Vesalius is not merely the author of an anatomical textbook that some consider as "technical," he constantly appears as an individual, sometimes sharp (in particular against Galen's sectarians), mordant and bitter (when complaining against plagiarists), sometimes haughty – and proud to be so. Far from being a mere compilation of Galen, as was

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97 These general observations are also featured in the introductions to the various books, where they can be seen in context.

severely judged by Charles Daremberg, Vesalius' work is inscribed in the humanist movement, and is also the *fabrication* of a scientific terminology, the research of a *ratio*, of a new method basing knowledge on intuition, observation and critical reasoning. All these elements account for the interest his work still arouses today.

## Choosing electronic publication

All over the world, the year 1514 is an opportunity to rekindle this interest by celebrating the 500<sup>th</sup> anniversary of Vesalius' birth. Two translations of the integral text of the *Fabrica* into English came out in a few years. The first one, which we owe to W.F. Richardson and J.B. Carman, under the title *On the fabric of the human body*, was published in San Francisco and Novato, Norman Publishing, in five volumes spanning from 1998 to 2009, with a presentation adapted to contemporary reading habits, featuring short sentences, spaced paragraphs, external marginal notes placed in sub-titles. Very recently, in 2013, a second translation into English, owed to D.H. Garrison and M.H. Hasta, was published by Karger editions, who produced two volumes under the title *The fabric of the human body: an annotated translation of the 1543 and 1555 editions of "De humani corporis fabrica libri septem,"* including the translation of some passages that had been modified, added or suppressed in 1555.

After careful consideration, choosing electronic publication seemed natural<sup>98</sup>. The new website *Vesalius' Fabrica and other texts* aims at giving free access to Vesalius' work while respecting the original text, including in its presentation (along with the marginal notes, and the variety of the typographical characters in the different parts). It makes it easy to consult the book thanks to the functionalities digitization offers, and it presents simultaneously the first transcription of the Latin text and its translation into French, accompanied with working tools – introductions, transcriptions and commentaries – that help the consultation<sup>99</sup>. Our choice was to make readers want to refer first and foremost to the original text; this is why we chose not to feature the illustrations either in the transcription or in the translation.

It was a long preparation work, as Vesalius' book is quite demanding, and even then, our work could be perfected – but the partnership with the BIU Santé proved enriching for us all. It demonstrated how necessary a multidisciplinary approach is for scientific editions, in which the scientific and technical competences of each and everyone are called upon. Insofar as knowing the major ancient texts is part of our heritage, we hope that the website *Vesalius' Fabrica and other texts* will be considered as an open gate onto this knowledge.

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98 Let us also mention the translation of Book I into Dutch by Dr M. Biesbrouck (<http://www.andreasvesalius.be/>).

99 We wish to thank our various partners, associates and friends who helped us and supported us in our long-winded work, in each of the books of the *Fabrica*. Let them find here the general expression of our gratitude.