THE PROBLEM OF THE ÉCORCHÉ:

THE VESALIAN CORPUS OF ALESSANDRO ALLORI

By

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Abstract

Compartmentalizing the influences of artist and anatomist on the cinquecento Florentine Academicians limits our ability to understand their practices and works as intersections of diverse influences. Separately addressing their influences clouds our modern understanding of the wholistic intellectual world in which these Florentine artists lived and worked. Such a view forces us into seeing artists as having only been influenced by artists, and, by extension, anatomists as having only been influenced by anatomists. By contrast, the reality of the day was that both groups were deeply influenced by each other.

Through an examination of the *Fabrica* and two of Alessandro Allori's yet-unstudied sketches, I argue that Renaissance Humanism caused 16th-century art and medicine to converge into observational science, such that experimentation in naturalism led to mutual advancement of both fields. To this end, I show that Allori was intentionally placing his works in direct dialogue with illustrations from Andreas Vesalius' *De Humani Corporis Fabrica*. By examining this dialogue, I show how Allori both drew inspiration from and augmented the latter, demonstrating the influence of Vesalius' work upon Allori's, and by extension the Florentine Academicians', anatomical and artistic practices.

The elevation and convergence of medical practice and manual artistic creation as intellectual science is illustrated by the anatomical sketch work of Alessandro Allori. His planned anatomical treatise is evidence of this prominence of Vesalius and his *Fabrica* in the daily life of the painter, and proof of the blurring of the lines between art and medicine in this period. That the artist was working to engage in constructive dialogue with and improve upon the work of the physician would have been unthinkable before Vesalius.

I. Introduction

Explosions of interest in classical antiquity catalyzed the late cinquecento anatomical practices of both art and medicine into naturalistic studies. Whereas artists of the 15th and 16th century directly studied antique statues as models of naturalistic art, a parallel humanistic revolution in medical practice began when the original Greek medical corpus of Galen of Pergamum (129 – 216 AD) was directly translated into Latin in the early 16th century. Both forms of humanism awoke a need to return to the naturalistic practices absent in preceding modes of art and medicine that appealed to earlier authoritative prototypes. Thus did several revolutionary artists and medical practitioners turn to new methods of studying the human body near the turn of the century. The trend toward naturalistic study in both fields culminated in the 1543 publication of Andreas Vesalius' (1514 – 1564) *De Humani Corporis Fabrica*, which revolutionized both medical and artistic practice.

While the *Fabrica* and subsequent illustrated anatomical texts are generally acknowledged for their role in causing the artists of the Florentine *Accademia delle Arti del Disegno* (Academy of the Arts of Design[1]) to see the study of anatomy as a central tenet of artistic mastery, these works are rarely mentioned in Giorgio Vasari's influential *Lives of the Most Eminent Painters, Sculptors and Architects* in relation to the Florence academy, nor as a founding influence on the Accademia's focus on teaching anatomy. Scholarship instead tends to focus on the Academy's emulation of the practices of Michelangelo Buonarroti (1475 – 1564)

[1] Giorgio Vasari, Kenneth Clark (ed.), and Gaston du C. De Vere (trans.), *Lives of the Most Eminent Painters, Sculptors, and Architects*, (New York: Abrams, 1979), 1836. While *disegno* may be translated as drawing, its use by Vasari implies the more wholistic art of "design" rather than drawing, as seen in De Vere's translation of the term to design throughout his translation of the *Vite*.

and Leonardo da Vinci (1452 – 1519).[2] These two masters certainly influenced the naturalistic styles and trends of later artists like Alessandro Allori (1535-1607), who had an extensive interest in anatomy, as noted by Vasari;[3] however, placing artistic influence in so central a light relegates the more immediate context of the revolution in medical practice, applying an anachronistic, if not revisionist, separation of disciplines that fails to account for the diverse range of interests of the late Renaissance academicians and their curiosity towards applicable advancements in adjacent fields of study and practice.

Compartmentalizing the influences of artist and anatomist on the Academicians limits our ability to understand their practices and works as intersections of diverse influences. Separately addressing influences clouds our modern understanding of the wholistic intellectual world in which these Florentine artists lived and worked. Such a view forces us into seeing artists as having only been influenced by artists, and anatomists as having only been influenced by anatomists. By contrast, the reality of the day was that both groups were deeply influenced by each other, as seen in the texts of Vesalius and Allori and the academic writing of Zofia Amelsenowa, L. Price Amerson, Jr., and Monique Kornell.

Without a clear understanding of reality, of an all-encompassing Renaissance Humanism as opposed to separate medical and artistic Humanisms, leads to misconceptions on the period and impedes scholarship's view of disparate influences.[4] Kornell notes that "in the *Fabrica*, Vesalius is supportive of artists and solicitous of their interest in anatomy, and he displays

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[2] Vasari, *Lives*, 786, 1839, 1842; Karen-edis Barzman, *The Florentine Academy and the Early Modern State: The Discipline of Disegno* (Cambridge: Cambridge University Press, 2000), 163 – 164; Elizabeth Pilliod, *Pontormo, Bronzino, Allori: A Genealogy of Florentine Art* (New Haven: Yale University Press, 2001), 173.
[3] Vasari, *Lives*, 2080.
[4] Barzman, *Florentine Academy*, 168; Pilliod, *Genealogy*, 173.

evidence that he has been looking critically at their works," which coincided with how "the sixteenth century, a period in which great emphasis was placed on the mastery of the nude figure in emulation of the antique and of Michelangelo Buonarroti, saw an intense desire by artists to acquire a knowledge of anatomy, particularly in Italy."[5] By building on her scholarship, I hope to increase the understanding of the diverse influences upon which the "Mannerists" drew to allow for further explorations and innovations in art historical understanding of the works of Academicians like Alessandro Allori.

Through an examination of the *Fabrica* and two of Allori's yet-unstudied sketches, I argue that Renaissance Humanism caused 16th-century art and medicine to converge into observational science, such that experimentation in naturalism led to the mutual advancement of both fields. To this end, I examine two of Allori's sketches previously unaddressed by academic scholarship to show that Allori was intentionally placing these in direct dialogue with the *Fabrica*'s illustrations. By examining this dialogue, I show how Allori both drew inspiration from and augmented the latter, demonstrating the influence of Vesalius' work upon Allori's, and by extension the Florentine Academicians', anatomical and artistic practices.

II. The *Écorché* and Alessandro Allori

In her 1963 study, *The Problem of the Écorché and the Three Anatomical Models in the Jagiellonian Library*, Zofia Amelsenowa provides historical justification for the existence of three anatomical models in her school's library.[6] These anatomical models are described by the

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[5] Monique Kornell, *Flesh and Bones: The Art of Anatomy*, eds., Thisbe Gensler, Naoko Takahate, and Erin Travers (Los Angeles: Getty Research Institute, 2022), 25 – 26.

[6] Zofia Amelsenowa, *The Problem of the Écorché and the Three Anatoical Models in the Jagiellonian Library*, trans. Andrzej Potocki (Krakow/Warsaw: Zaklad Narodowy Imienia Ossolinskich Wydawnictwo Polskiej Akademii Nauk, 1963).

French term *écorché* (literally "flayed" or "skinned"), and were created extensively by artists beginning in the 16th century. Amerson continues Amelsenowa's research in his 1975 study, *The Problem of the Écorché: A Catalogue Raisonné of Models and Statuettes from the Sixteenth Century and Later Periods*, in which he defines and attributes the development and creation of écorchés through an extensive survey. [7]

I present my research as a continuation of these two studies in my attempt to give proper historical context and explanation for the existence of two of the anatomical sketches that remain unmentioned in Amerson's work. These sketches, today housed in the Uffizi and the Louvre [Figs. 1, 2], are attributed to the Late Renaissance master Alessandro Allori, student of the school of the High renaissance masters Jacopo Pontormo (1494 – 1557) and Agnolo Bronzino (1503 – 1572).

Elizabeth Pilliod questions Vasari's self-interested treatment of these two artists and his demotion of their school in order to promote the Accademia, demonstrating how Pontormo and Bronzino formed perhaps the most important and influential school of the High and Late Florentine Renaissance.[8] While the schooling provided by the *Accademia* does seem to play an important role in Allori's interest in anatomy, as Vasari suggests,[9] my own research seems to agree more with Pilliod's assertion that Allori's interests were influenced far more by his master and adoptive father, Bronzino, far ahead of his entry into the academy.

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[7] L. Price Amerson, Jr., *The Problem of the Écorché: A Catalogue Raisonné of Models and Statuettes from the Sixteenth Century and Later Periods* (Anne Arbor: Xerox University Microfilms, 1975), 2.

[8] Pilliod, *Pontormo, Bronzino, Allori*, 194.

[9] Vasari, *Lives*, 2080.

Like Allori, many of the early academicians produced written treatises prior to their association with the Accademia, including Vincenzo Danti (1530 – 1576) and Benvenuto Cellini (1500 – 1571). Most of these treatises remain unfinished, and as Nino Nanobashvili points out, these artists had most likely written them as applications to the Accademia, with the promise that they would continue their writing following their acceptance.[10] This would explain why so many artists seem to have given up on their treatises circa mid-1560, as it lines up with the time of their acceptance into the Accademia. In this respect, Alessandro Allori's treatise remains unique, as he continued producing manuscripts for it through 1580.[11]

Allori's treatise, *Ragionamenti delle regole disegno d'Alessandro Allori con M. Agnolo Bronzino*, acts to teach the reader about the role and importance of anatomical knowledge in a lesson on drawing the human figure.[12] Aimed at the elite classes of society, as seen in Allori's earlier manuscripts in which he directly teaches five noblemen, such manuals on various arts were popular by the time of his writing.[13] Allori already prepared a large portion of a first draft of this treatise upon his acceptance into the Accademia, and attempted to finish it long after that acceptance. His commitment demonstrates a longstanding interest in accurately observing and describing the human body, and underscores the deep influence of both Leonardo and Michelangelo, with the latter of whom he was intimately familiar.[14] The dual nature of his manual also speaks of the more immediate revolution in anatomical description and illustration

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[10] Nino Nanobashvili, "The Rise and Fall of Anatomy: Alessandro Allori's Unfinished Drawing Manual and his Iterative Struggles with It," in *Failure: Understanding Art as Process, 1150 – 1750*, lecture (Florence: Kunsthistorisches Institut in Florenz, Max-Planck-Institut, 2020).

[11] Ibid.

[12] Alessandro Allori, "Il primo libro de' Ragionamenti delle regole del disegno d'Alessandro Allor con M. Agnolo Bronzino," in *Scritti d'arte del Cinquecento,* ed., Paola Barocchi (Torino: Einaudi, 1979), pp. 1941 – 1981.

[13] Nanobashvili, "Allori's Manual," lecture.

[14] Pilliod, *Genealogy*, 149 – 151.

by Andreas Vesalius and Juan Valverde de Amusco, both of whom he directly references in his treatise.[15]

As Nanobashvili points out, the first two drafts of Allori's manuscripts were completed much earlier than the fifth manuscript related by Paola Barocchi.[16] These early drafts contain a much more in-depth explication of the anatomy of the human head than is present in the later drafts, with direct reference to specific passages of the *Fabrica*.[17] Contrary to Barzman's theory on Allori's main choice of anatomical reference,[18] a 1543 edition of the *Fabrica* recently found in the library of Trieste signed "D' Alles: Allori" contains annotations in both Latin and Italian on page 17 where Vesalius discusses the skull [Figs. 3, 4].[19] Nanobashvili suggests that these are Allori's annotations.[20] The presence of Allori's signature and annotations suggests that Allori was able to read Latin, and was directly engaging with it through his anatomical treatise. I will show that Allori's engagement with Vesalius further extends to his artistic work.

III. Parallel Developments of Humanism in Art and Medicine

To understand how Allori's sketches extended the convergence of art and medicine seen in Vesalius' *Fabrica*, we must first observe how Renaissance Humanism took shape in both medicine and art at the turn of the 16th century.

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[15] Allori, "Ragionameneti," 1947.
[16] Nanobashvili, "Allori's Manual," lecture.
[17] Nanobashvili, "Allori's Manual," lecture.
[18] Barzman, *Florentine Academy*, 167 – 168.
[19] Dániel Margócsy, Mark Somos, and Stephen N. Joffe, *The* Fabrica *of Andreas Vesalius: A Worldwide Descriptive Census, Ownership, and Annotations of the 1543 and 1555 Editions* (Leiden: Brill, 2018), 193 – 194. The legible part of the annotation reads, "seu caluariae instar oblongae sphaerae cioè in guisa d'uno […]onato extuberans gonfiore."
[20] Nanobashvili, "Allori's Manual," lecture.

Humanist themes in the visual arts evolved largely independent of Humanist ideas, beginning with Giotto's (d. 1337) naturalistic depictions of the Christian themes of medieval art [Fig. 5]. By abandoning the symbolic, unearthly nature of the then-dominant Italo-Byzantine style, Giotto began the trend of looking towards nature to inspire realistic, if perhaps idealistic, portrayals of nature in Tuscan art that continued through Masaccio in the 15th century.

Masaccio (1401 – 1428) elevated Giotto's ideals of naturalism towards greater realism and attention to details, particularly in his realistic depictions of the human body and use of single-point linear perspective, as seen in his *Expulsion from the Garden of Eden* [Fig. 6]. Masaccio's monumental and realistic depictions of the human body and nature as seen through the human eye culminates in his 1427 *Holy Trinity* [Fig. 7]. Here he incorporates the humanist notions on the mathematical idealism of nature into the arrangement and depiction of human and divine figures. He also for the first time attempts a naturalistic depiction of the human skeleton. While perhaps not exactly anatomically accurate in its depiction, this *memento mori* skeleton appears over a century before the human skeleton's first accurate portrayal in print in the Vesalius' *Tabulae Anatomica Sex* in 1538.

Drawing on the compositional elements of Masaccio, Leon Battista Alberti (1404 – 1472) wrote in his 1536 *De Pictura* that the artist achieves mastery by naturalistically representing what they could see with their own eyes in the plane of the painting surface. In this sense, he relates the perfection of painting to its ability to visually describe the mathematical perfection of nature. Alberti's treatise is the first to put to words Filippo Brunelleschi's (1377 – 1446) invention of linear perspective in relation to the painter's ability to fully and realistically

represent naturalistic three-dimensional space using lighting and spatial awareness.[21] By defining painting as an illustration of the natural and philosophical laws of nature, Alberti injects into the visual arts the quality of the humanities, beginning the process of raising artistic creation from artisan manual labor to the noble and intellectual creation of fine art in the eyes of the intellectual elite. Above all, Alberti attempts to equate painting to the noblest of arts, both antique and contemporary, as products of the same virtue by which nature is organized:[22] "the art of painting is indeed worthy of free minds and noble intellects."[23]

By discussing the painter's necessity to conform to nature in their representation of the human body, Alberti provides the basis for our further discussion on the art of Allori and his contemporaries. In discussing proportions, Alberti writes, "it will help, when painting living creatures, first to sketch the bones, for, as they bend very little indeed, they always occupy a certain determined position. Then add the sinews and muscles, and finally clothe the bones and muscles with flesh and skin."[24] In describing how a painter should create proper proportions, Alberti creates the genre of the écorché, providing the basis for later artists' studies of anatomy. While he perhaps does not expect artists to perform their own dissections in pursuit of creating the discussed proportionality, we see later artists expanding upon his advice.

Taking Alberti's instruction literally, artists of the late quattrocento began dissecting bodies to better encapsulate the nude form, first seen in Antonio Pollaiuolo's (1433 – 1498) engraving, *Battle of the Nude Men* [Fig. 8]. Vasari writes that Pollaiuolo "dissected many bodies

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[21] Leon Battista Alberti, *De Pictura,* in *Leon Battista Alberti: On Painting and On Sculpture: The Latin Texts of* De Pictura *and* De Statua, ed., Cecil Grayson (London: Phaidon, 1972), 47 – 53.
[22] Alberti, *De Pictura*, 67.
[23] Ibid.
[24] Alberti, *De Pictura*, 75.

in order to study their anatomy. He was the first to demonstrate the method of searching out the muscles, in order that they might have their due form and place in the figures."[25] As Vasari writes, Pollaiuolo first uses dissection in pursuit of a more perfect depiction of the human body, setting a precedent for the use of anatomical dissection in support of artistic practice that would be expanded upon by later artists. While Laurenza points out that his work is more likely a synthesis of his observation of living bodies and his studies of antique statuary, rather than truly dissecting any bodies, this work nonetheless seems to have catalyzed future artists' studies of human anatomy.[26]

Pallaiuolo's depiction of the human body through understanding seems to have inspired Leonardo's revolutionary work as artist and scientist. As seen in his sketches, he extends Alberti's conceptual understanding of nature and science as being directly and inseparable tied up with artistic creation [Figs. 9, 10]. Had his ideas on anatomy, art, and science been published or released to the public eye at any point during his lifetime or the 16th century, they would have preceded and perhaps far exceeded the work of Vesalius, revolutionizing the fields of anatomical study and artistic practice.[27] As we will return to momentarily, Leonardo found the basis of his medical understanding in the concepts of Galenic medical practice, working with a Paduan professor of anatomy to illustrate an unpublished anatomical treatise.[28] While perhaps not entirely correct in his depictions of the human body, Leonardo's anatomical work would have

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[25] Vasari, *Lives*, 664 – 665

[26] Domenico Laurenza, *Art and Anatomy in Renaissance Italy: Images from a Scientific Revolution* (New Haven: Yale University Press, 2012), 8 – 9.

[27] Vivian Nutton, "Historical Introduction", in *An Annotated Translation of the 1543 and 1555 Editions of "De Humani Corporis Fabrica Libri Septum"*, trans., eds., Daniel H. Garrison and Malcolm H. Hast (Basel: Karger, 2014), XCIV.

[28] Ibid.

revolutionized medicine far ahead of Vesalius' work. Unfortunately, the professor with whom he was working passed before the treatise's completion.[29] Equally as devastating, Leonardo's notebooks remained entirely unknown to the public, hidden in library archives for several centuries after their creation.[30]

Despite the then-inaccessibility of his notebooks, all who came across Leonardo's artistic masterpieces studied and revered them. Vasari writes that "the fame of his name so increased, that not only in his lifetime was he held in esteem, but his reputation became even greater among posterity after his death."[31] To Vasari and so many others, Leonardo's ability to depict the beauty of nature betrayed a god-like talent, representing an early peak of what unifying the various Humanist ideals could achieve. Leonardo da Vinci set the precedent for the sixteenth century's investigation of nature and the human form through direct observation of both the natural world and antique models.

Of those anatomical investigations that remained visible to the public eye, Vasari remarks briefly on Leonardo's being the first to begin "to illustrate the problems of medicine with the doctrine of Galen, and to throw true light on anatomy, which up to that time had been wrapped in the thick and gross darkness of ignorance."[32] While indeed the few of Leonardo's studies available to the public caused quite a stir in artistic and likely also medical circles, as Vasari relates to us, they seem to unfortunately not have had the impact of the work of Vesalius, given the inaccessibility of the remainder of his drawings or publication with an accompanying text.

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[29] Ibid.
[30] Nutton, "Historical Introduction," XCIV.
[31] Vasari, *Lives*, 778.
[32] Vasari, *Lives*, 786.

Yet in Vasari's brief exposition of Leonardo's work with anatomy, we see the foundational aspects of the other dominant giant of the 16th century, Michelangelo.

Michelangelo became the peak of the humanist ideal in the visual arts. Much like Leonardo, Michelangelo's "divine"[33] presence overshadows perhaps the entire remainder of visual art production. As with Leonardo, Vasari relates that Michelangelo performed many dissections on the human body in his youth, much to his profit in his ability to depict the human form.[34] The effect of Michelangelo's early study is seen perhaps best in *David* [Fig. 11], one of his earliest works. While he adds muscles in certain places to emphasize the strength and presence of the figure, such as the hand [Fig. 12], he successfully portrays a figure in marble the likes of which had not been seen since antiquity. In this sense, many saw him not simply as depicting nature, but rather using his inventiveness to surpass the ancient masters.

To Vasari, Michelangelo was a gift from "the most benign ruler of Heaven," master of all the visual arts and the fullest realization of all the Renaissance ideals.[35] Michelangelo's impact on art was so great that for several centuries after, those artists endeavoring to follow his examples and emulate his forms were viewed with a certain prejudice in their corrupt reproductions of Michelangelo's perfection, such that the label "Mannerist" was coined as a derogatory term.[36]

Michelangelo's perfection of the visual arts left a lasting impression on all those who followed, artist and also non-artist, to the extent that his influence is felt in illustrations of the

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[33] Vasari, *Lives*, 1832.
[34] Vasari, *Lives*, 1838.
[35] Vasari, *Lives*, 1832.
[36] Francis Ames-Lewis and Paul Joannides, *Reactions to the Master: Michelangelo's Effect on Art and Artists in the Sixteenth Century* (Aldershot: Ashgate, 2003), 3.

Fabrica. Through dissections of human corpses in the Church of Santo Spirito, Michelangelo grasped a deep understanding of the human form that he would use to continue to improve his own compositions.[37] In Michelangelo, we thus see again an artist embarking upon the study of anatomy long before physicians, though unlike Leonardo, Michelangelo engaged in dissection purely to effect a more perfect depiction of the human body, rather than to aid a general understanding of anatomy.

Most notably in Michelangelo's *Last Judgement* [Fig. 13], there exists a successful capturing and surpassing of the monumental forms of antique statuary. Michelangelo's sketches present diligent studies of the works of the ancient Greek and Roman masters who so powerfully captured the human form. Through these studies of antiquity and past masters, Michelangelo captured and at times surpassed the beautiful figures of antiquity through his own monumental forms. Proof of this surpassing of the ancient masters in his *Last Judgement* lie in figures emulate the twisting forms of the recently-resurfaced Belvedere Torso [Figs. 14, 15] and the "Laocoön" (Figs. 16, 17), which became models for the beauty of the human form. Other of Michelangelo's figures seem to extrapolate from these ancient examples to depict the human body engaged in still-greater degrees of dynamic motion [Fig. 18].

In this brief overview of the development of art through to the 16th century, we see how artists had become themselves the proprietors of the foremost knowledge of human anatomy. With Leonardo and Michelangelo, and those left unmentioned for the sake of brevity (but of course more than deserve their place in this brief history), we may first begin to observe how artists engaged in the sciences through their artistic processes and understandings. Alongside

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[37] Vasari, *Lives*, 1839.

their studies of naturalistic human form in aid of their depictions of the human body, these artists were simultaneously deeply engaged in the study and emulation of greatly esteemed works of classical antiquity. In these artists' study of naturalistic human forms, both through studies of antique classical art and direct observation of the human body, a visual language of humanism embodied by artistic practice and creation developed.

In much the same way that humanist ideals rooted in the direct study of classical antiquity led to the naturalism seen in the Renaissance art of Italy, humanist ideals also led medical professionals to directly study antique models of medicine. The arrival in Europe of the Greek manuscripts of Galen in 1525 and Hippocrates in 1526 allowed for direct study of these medical masters and an initial disruption in the obsolete practices of medieval medicine.[38]

Most of the anatomical studies in Europe through the early 16th century were centered around incomplete and improperly-translated versions of the teachings of Greco-Roman anatomist and physician, Galen of Pergamum. These Latin texts were derived from their Arabic translations in the 13th century through trade across the Mediterranean.[39] The Arabic texts had in turn been translated into Arabic from Syriac, which had been translated from the original Greek manuscripts.[40] Throughout this long chain of translation across multiple cultures, the original text became corrupted through mistranslations and excisions of entire passages.

The corruption of the text was to the extent that the eventual Latin studied by medieval and early Renaissance physicians texts had long since lost Galen's original thematic urging of

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[38] Nutton, "Historical," LXXVI.
[39] Saunders and O'Malley, *Illustrations*, 13.
[40] Ibid.

empirical self-observation.[41] Oblivious to this fact, physicians revered these thrice-translated Latin texts as fully accurate from the 13th to the early 16th centuries. These texts thus informed a medical tradition dominated by faith in textual authority, rather than in the authority of direct, empirical observation.[42] This tradition was codified by Mondino de'Liuzzi in the 14th century, whose text teaches an anatomy perhaps fully unfamiliar to any modern reader.[43]

The Latin Galenic medical tradition was such that demonstrative illustrated anatomical texts were virtually nonexistent. Those illustrated medical texts that did exist used images as memory aids or symbolic representations of the moral or theological ideas represented by the practice of anatomy upon which professors would explicate, such as the "Five-Figure Series" representing the Zodiacs based on the Greek system of the Humors [Fig. 19], or representing the practice of anatomical dissection itself [Fig. 20].[44] Both of these images come from the 1494 so-called modern edition of Johannes de Ketham's *Fasiculo de Medicina*, a second edition of the first-ever anatomical text to contain images, (these images are updated versions of those in the first text).[45] These illustrations existed nearly independent of the Galenic text, rather than as direct accompaniments to it, and so were unusable as references to the reader.

Given the text-based tradition, anatomical demonstrations were indeed extremely different from what the contemporary reader may imagine, as seen in Figure 20. Prior to the latter half of the 1530s, the medical professor, known as *lector*, would sit on a chair behind and

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[41] Nutton, "Historical," LXXXVIII

[42] Cassirer, "Place in Renaissance," in *Celebration of the Four Hundredth Anniversary of the De Humani Corporis Fabrica of Andreas Vesalius: The Historical Library, Yale University School of Medicine, 30 October, 1943* (New Haven: Yale Journal of Biology and Medicine, 1943), 9 – 13.

[43] Nutton, "Historical," LXXXVIII.

[44] Laurenza, *Art and Anatomy in Renaissance Italy*, 6 – 7.

[45] Saunders and O'Malley, *Illustrations*, 23.

above the site of the dissection. He would dictate to a barber-surgeon below, called *sector*, the proper incisions to make, and explicate upon the moral and theological principles of the structures that were made visible, or in most cases mutilated, by the untrained *sector*.[46]

Under this tradition, through which Vesalius gained his medical education beginning at Paris, anatomical demonstrations of this sort were a very recent and exceptionally rare innovation. The barber-surgeon was treated as a lowly commoner, given that Physicians were averse to dirtying their hands by touching the corpse.[47] Instead, the professor would expound upon the words of Mondino, setting his instruction of human anatomy in a Galenic and theological light rather than one grounded in the actual anatomy demonstrated by dissection.[48] The structures presented to the students became mere representations of a heavenly, more perfect body. As such, it didn't matter to what extent the cadavers were mutilated, as they were intended as symbolic rather than authoritative representations of the teachings of Galen.

With the previously mentioned arrival in Europe of Byzantine exiles carrying copies of the original Greek manuscripts in the mid-1520s, physicians paid new attention to the tradition on which their medical practice had been based since the 12th century.[49] These sources were seen as purer sources of medicine, allowing physicians to examine with greater scrutiny their medical texts. Comparing the canonical text of Mondino to the Greek originals, certain progressive professors argued that the medieval texts were filled with errors and misunderstandings or miscopyings of the original Greek sources.

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[46] Ibid.

[47] In fact, upon graduating from the medical school of Paris, students were forced to swear to never touch a human corpse, lest they defile the purity of the physician's role.

[48] Nutton, "Historical," LXXXVII.

[49] Nutton, "Historical," LXXXIX.

Paris became the face of this new medical humanist movement, proving extremely attractive to the young Andreas Vesalius who began his medical studies there in 1533.[50] An enthusiastic student of philology, promoted by his humanist university education in Louvaine, Vesalius became himself an ardent supporter of these "true" Galenic texts, working closely with the "New Galenist" professors to create new Latin translations of the Greek manuscripts. One such professor, Johann Guinther von Andernach (1487-1574), vigorously attacked his colleagues for misunderstanding the true meaning of Galen.[51] A second professor with whom Vesalius worked closely, Jacobus Sylvius (1478-1555), also a staunch New Galenist, worked to use the newly translated Galenic texts to clarify and systematize the existing anatomical knowledge, defining terminology still in use today.[52] Under this new Medical Humanism, now based on the purer Galenic texts, academics believed that they had captured the true essence of the classical medical authorities that would allow them to enter into a new Golden Age of medical practice.[53]

In spite of their rediscovery of these ancient texts, or perhaps because of it, medical practitioners like Guinther and Sylvius remained enslaved to the belief that mastery of medicine was to be found in deep study of the authority of the ancients. The literal word of the ancients continued to reign supreme, such that the New Galenists attributed any new discoveries to the new translations of the works of Galen and Hippocrates. These medical humanists were acutely aware by this point that Galen had based his study of anatomy on animal models rather than human, but assumed that Galen knew enough human anatomy from his brief and sparse interactions with patients that he had distinguished between the two in his writings, and were

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[50] Saunders, O'Malley, *Illustrations of Vesalius*, 12.
[51] Nutton, "Historical," LXXVII.
[52] Saunders, O'Malley, *Illustrations of Vesalius*, 13.
[53] Ibid.

proponents of his anatomical methods regardless.[54] In any event, they themselves had never touched a human corpse, preferring instead to continue expositing the new Galenic anatomical methods under the same idealistic framework.[55] Into this landscape of New Medical Humanism entered Andreas Vesalius.

IV. Revolution in Anatomical Study

As a student of medicine in Paris beginning in 1533 following his Humanist college education, Vesalius fully embraced the new Galenic anatomy.[56] His medical education primarily involved studying the theoretical medical principles contained in the classical Latin medical texts by Arab scholars Rhazes and Avicenna, alongside those newly translated works of Hippocrates and Galen.[57] Rarely did his formal studies include practical instruction. Instead, he performed independent anatomical investigations both on animals and corpses he obtained from local cemeteries.[58] As was the tradition, his anatomical education derived primarily from Mondino de' Liuzzi's 14th-century *Introduction to Anatomy,* which codified the teachings of Galen corrupted by multiple cycles of mistranslation and excision into a definitive program of anatomical study.[59]

Able to view the bodily structures up close and unmutilated during his own dissections, given his noted proficiency with the scalpel,[60] Vesalius began taking note of inconsistencies between Mondino's descriptions and the layout and structures actually present in the bodies he was dissecting. While several such errors had been previously observed by the New Galenist

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[54] Nutton, "Historical," LXXVII.
[55] Ibid.
[56] Nutton, "Historical," LXXVI.
[57] Ibid.
[58] Saunders, O'Malley, *Illustrations*, 14.
[59] Nutton, "Historical," LXXVI.
[60] Nutton, "Historical," LXXVII.

proponents, they were explained away by statements like Sylvius': any differences were the product of post-Roman "decadence and degeneration in mankind" from the noble Roman specimens studied originally by Galen.[61]

Much as the artist was seen as second-rate to the poet due to working with his hands rather than his mind,[62] to the physician, the dissector was an uneducated manual laborer. As such, during those infrequent dissections at Paris, the professors of medicine would allow students to volunteer to perform the dissections as they expounded upon Mondino or Galen from their chair high above. Vesalius himself looked down on both, writing in his preface to the *Fabrica*:

> *While the latter [the lectors] in their egregious conceit squawk like jackdaws from their lofty professorial chairs things they have never done but only memorize from the books of others or see written down, the former [the sectors] are so ignorant of languages that they are unable to explain dissections to an audience and they butcher the things they are meant to demonstrate, following the instructions of a physician who in a haughty manner navigates out of a manual alone matters he has never subjected to dissection by hand.* [63]

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[61] Saunders, O'Malley, *Illustrations*, 13.

[62] Pilliod, *Genealogy*, 197, tells of an anecdote involving Raffaelo Borghini (1537 – 1588), noted poet and appointed head of the *Accademia del'Arte delle Disegno*, reacting to essays written by noted artists on the importance of sculpture versus painting: "In a letter to Vasari, Borghini claimed to have had as much fun reading their foolishness as he would have had at a comedy during Carnival." To Borghini, the role of artists was to imitate and create pleasing appearances; the job of the poet was to think. Clearly, he was antagonistic to the notion Vasari attempted to promote, of the artist being as much of an intellectual as the poet or equivalent humanities academic.

[63] Andreas Vesalius, "Andreas Vesalius' Preface to his books on the Fabric of the Human Body," in *An Annotated Translation of the 1543 and 1555 Editions of "De Humani Corporis Fabrica Libri Septum"*, trans., eds., Daniel H. Garrison and Malcolm H. Hast (Basel: Karger, 2014), 5.

As Vesalius describes, the professors sat upon what amounted to a throne atop temporarily-constructed scaffolding set up specifically for the once-per-year public dissections taking place outside.[64] Given the emphasis on the appeal to authority for anatomical knowledge by professors who had never touched a body, as Vesalius mentions in his preface, these dissections were seen as unimportant enough to be skipped several years; true knowledge was to be found in the writings of Mondino, and, by the time Vesalius was learning medicine, in the newly translated Galen. As such, much of Vesalius' experience with dissection came from his independent investigations of corpses raided from cemeteries or on dead animals. Due to the extent of his independent dissections, Vesalius had already become relatively known within the Paris school of medicine for his technical skill with the knife, such that upon being called up for the third public dissection he attended, he was seen as much more skilled than the sloppy butcher-work of the barber-surgeons.[65]

As mentioned, it was also primarily during his independent investigations that Vesalius began to see many errors in the work of Mondino, Rhazes, and Galen, compared to his direct observations of the human body. Upon his return to Louvaine due to the war between his native Holy Roman Empire and France, he attempted to write his Baccalaureate thesis on these errors; however, given the staunchly conservative medical attitude of Louvaine, he was forced into compromise: his 1537 baccalaureate thesis, *Paraphrase on the Ninth Book of Rhazes*, was a compromise between his own New Medical Humanist attitude and the conservative medieval

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[64] Nutton, "Historical," LXXVII.
[65] Ibid.

attitude of his professors. Vesalius both paraphrased and pointed out errors in the staple medieval medical handbook.[66]

Vesalius completed his MD in Padua, which had a much more progressive view on the place of dissection and anatomy than both Louvaine and Paris. Immediately upon graduating, he was offered the chair of surgery. He began lecturing immediately, and in many of his lectures he used dissection to demonstrate anatomy.[67]

Breaking with the traditional hierarchy of roles, Vesalius became dissector, demonstrator, and lecturer all at once. He urged his students to follow the anatomy texts of Galen and Guinther, who had published a commentary on the new translations, rather than Mondino, fully embracing his New Medical Humanist education.[68]

In a second and equally important innovation, Vesalius began using large-scale detailed illustrations to accompany and support his exposition of human anatomy, knowing full well the difficulty of viewing the actual dissection from high up on the scaffolding. These initial sheets were created with the employ of a student of Titian (d. 1576), Jan Stephan Van Calcar (c. 1499-1546)[69] in combination with his own sketches. Urged on by his medical students, Vesalius printed these sheets in 1538 with the Basel printer Johannes Operinus (1507-1568) as the *Tabulae Anatomica Sex* [Figure 21]. While perhaps more crude compared with his later works,

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[66] Saunders, O'Malley, *Illustrations*, 15.
[67] Saunders, O'Malley, *Illustrations*, 15 – 16.
[68] Saunders, O'Malley, *Illustrations*, 16.
[69] Saunders, O'Malley, *Illustrations*, 16 – 17.

these six large illustrations were met with immediate international success, as proven by the extensive plagiarisms of these illustrations across Europe.[70]

Vesalius continued to publish corrections to previous publications using his observations gained from dissection, and seeing the success of the *Tabulae Sex,* he decided to publish a more in-depth guide on human anatomy. This time, he intended to completely overturn the still-standard authority of ancient medical texts. While the proponents like Guinther and Sylvius took notice of errors in their authoritative texts by Galen, Rhazes, and Mondino, and published occasional corrections, such as in their reprinting of the entire corpus of Galen in a new translation of the original Greek into Latin, they remained beholden to these texts. Those errors that they pointed out were explained away as occasional mistranslations or mistakes in the notetaking of the Byzantine exiles who had carried them to Europe; in their eyes, Galen could not have been mistaken in his overall observations of the human form, and he thus continued to reign supreme as the objective authority among the New Medical Humanists, who continued in their demonstrative dissections to merely expound upon his text from high up in their chairs. [71]

In response to the continued authoritative position of textual exposition in the study of anatomy, Vesalius produced his 1543 Magnum Opus, *De Humani Corporis Fabrica*, which succeeded in overturning the stale medical tradition. Above all, the work urged both students and professors to rely on first-hand, experiential observation of the human body to gain their knowledge of anatomy, rather than only textual authority. Working within the realm of the New

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[70] Harry Clark, "Foiling the Pirates: The Preparation and Publication of Andreas Vesalius's De HUMANI CORPORIS FABRICA" in *The Library Quarterly: Information, Community, Policy*, Vol. 51, No. 3 (Chicago: The University of Chicago Press, 1981), 303.

[71] Nutton, "Historical," LXXVI.

Medical Humanism, Vesalius used textual explanations to describe the human body, but innovated on all previous attempts at illustrated anatomical texts by using richly detailed illustrations.

Unlike the previous texts, the illustrations in the *Fabrica* were not intended as simply supplemental to the text, but rather to fully complement it: Vesalius continuously urges the reader to return to the diagrams *as they read* to see the labelled images he was describing in the text, as seen in his introduction to Book Two:

> *You would therefore do well to examine these muscle figures both ways to see what each sequence best illustrates with the characters belonging to them, placed as close to the muscles as the lettering allows. To these you may return from the chapters whenever it seems necessary…and inspect a drawing as desired of the muscles being mentioned.*[72]

While this is perhaps now standard practice, Vesalius' system of interconnecting the text itself with the illustrations created a visual guide that allowed the reader to emulate the act of dissection and firsthand observation within the pages of the text itself.

That the illustrations could serve in some sense as a replacement for firsthand dissection was critical to the widespread success and distribution of the text, as Vesalius was targeting all facets of aristocratic society.[73] The text served to elevate the art of anatomy through the exceptional quality of its prints, high-quality and large illustrations, and large folio size, that made the text equivalent in some ways to the expensive illuminated manuscripts of previous

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[72] Vesalius, *Annotated Translation*, 334.
[73] Nutton, "Historical," XCII – XCIII.

centuries. This meant that the work, simply from its price point and quality alone, allowed Vesalius to target those upper levels of European international society with the means to purchase it. Compared to other works of equivalent nature, such as printed versions of the classical texts, the *Fabrica* often cost two or three times as much.[74] In targeting the upper echelons of society, Vesalius forced into acceptance the idea of dissection as not simply a manual exercise, but one of an intellectual nature for the contemplation of the works of god, worthy of kings.[75]

The intellectual raising of anatomical practice was enhanced by the high quality of both the language and the illustrations. Unlike the *Tabulae,* definitive evidence on the identity of the artists employed for the *Fabrica* does not exist, aside from the contributions of Vesalius himself. As such, the definite identities of the illustrators have been widely speculated across the centuries since the *Fabrica*'s 1543 publication. Nutton summarizes the modern consensus first proposed by Saunders and O'Malley, such that this later work was produced using both sketches prepared by Vesalius himself combined with illustrators from the workshop of Titian, including Jan van Calcar and Domenico Campagnola.[76]

While it is unlikely that Titian himself was directly involved in the production of the prints, it seems highly likely that he provided models on which the variegated group of artists based their illustrations. In particular, attention has been raised to the conspicuous evidence of Campagnola's creation of the background for the plates of the "Muscle Men" in Book II.[77] The

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[74] Nutton, "Historical," LXXXV.
[75] Nutton, "Historical," CIII.
[76] Saunders, O'Malley, *Illustrations*, 25 – 29; Nutton, "Historical," XCIII – XCIV.
[77] Saunders, O'Malley, *Illustrations*, 29.

only reference to any of the artists possibly employed exists in a 1538 letter by Vesalius, in which he writes, "If the opportunity of bodies offers, and Jan Stefan, outstanding artist of our age, does not refuse his services, I shall by no means evade that labor."[78] This is by no means definitive proof of Van Calcar's involvement in the *Fabrica* or its *Epitome,* but it is at least circumstantial evidence of Vesalius' intention to continue working with him on some undefined future endeavor.

Regardless of the true identity of the artists from within Titian's shop, the high quality of the illustrations lent the *Fabrica* appeal to those wealthy enough to truly enjoy and patronize fine art, as is complemented by the quality of the language. Vesalius, himself a philologist extensively trained with the works of Cicero and other classical authors, wrote in the highly sophisticated Ciceronian Humanist Latin of Petrarch and Poliziano.[79] This meant that only those highly educated intellectuals at the forefront of the humanist movement were able to access the text of the work, forcing its appeal into those upper echelons of European society that had looked down on the manual labor of dissection, both wealthy nobles, physicians, and those intellectual elites with the wealth to afford it.[80] While a German translation was the only vernacular translation produced of the 1543 edition with Vesalius' permission,[81] extensive piracy of the work caused vernacular translations to appear within a span of only two years following its publication.[82]

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[78] Saunders, O'Malley, *Illustrations*, 20.

[79] Daniel Garrison, "Translator's Introduction," in *An Annotated Translation of the 1543 and 1555 Editions of "De Humani Corporis Fabrica Libri Septum",* trans., eds., Daniel H. Garrison and Malcolm H. Hast (Basel: Karger, 2014), LXIX.

[80] Nutton, "Historical," XCVIII – CII.

[81] Nutton, "Historical," LXXX.

[82] Clark, "Pirates," 209.

Vesalius' 1543 work saw immediate success throughout the entire European world due to the appeal of its content and, perhaps equally as importantly, Vesalius' shrewd business practice in his strategic choice of publication in Basel, rather than Venice. Along with highly competent artists to produce the work's woodblocks,[83] Venice also had a booming and highly reputable printing industry. That Vesalius chose not to publish in Venice, though, is critical to understanding the immediate success of the 1543 publication.

One of the specialties of Titian's workshop as a specific form of low relief sculpture,[84] the wood block illustrations produced for Vesalius' work were of extremely high quality compared with many contemporary woodcuts. Yet the very nature of woodcuts made copying them especially easy, either directly by tracing the page (thereby destroying the original) or copying it with the naked eye.[85] One could imagine any mediocre wood carver hoping to make a quick net profit easily tracing the illustrations into a new block of wood, cutting it, and reprinting it for a high profit. This was a not uncommon occurrence, given the lack of intellectual property laws in existence at the time outside of loosely enforced *privileges*, which were only available in certain locations like Venice and did not guarantee international protections. [86] The *Tabulae* were in fact published separately in five cities throughout France and the Holy Roman Empire.[87] Having seen this plagiarism with the publication of his previous works, Vesalius was largely familiar with the

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[83] Despite the lack of historical record, it is quite clear that Vesalius worked with an extremely talented artist to produce the woodcuts. As he was located in Padua, which is quite close geographically to the city of Venice, and already had contacts inside the workshop of Titian, he almost certainly contracted more artists from that circle.

[84] Wendy Thompson, "The Printed Image in the West: Woodcut: Essay: The Metropolitan Museum of Art: Heilbrunn Timeline of Art History," in *The Met's Heilbrunn Timeline of Art History* (New York: The Metropolitan Museum of Art, 2003), https://www.metmuseum.org/toah/hd/wdct/hd_wdct.htm.

[85] Garrison, "Translator's Introduction," LXXI.

[86] Adrian Johns, *Piracy: The Intellectual Property Wars from Gutenberg to Gates* (Chicago: University of Chicago Press, 2010), 20.

[87] Clark, "Pirates," 303.

quality and speed of copyists, and was determined to prevent them from ruining his reputation with this work through their poor-quality copies or lack of attributions. [88]

In all cases, as Vesalius himself would have observed, copies of the *Tabulae* indeed were of consistently lower quality. Competitors used cheaper and often smaller materials, in contrast to the large, folio-size, high quality paper on which Vesalius had published the *Tabulae* for his students.[89] The lower quality of the prints and the poorer craftsmanship reduced the reputation of his original work, and in many cases outsold Vesalius' own draft of the *Tabulae*.[90] Vesalius' fear of piracy is evident in his preface to the *Fabrica*:

> *I gladly tolerate, indeed, greatly admire the divine and most felicitous talents of the Italians, in contradistinction* [sic] *to my judgement of German physicians, because the latter seek the services of certain sordid printers who, for the sake of any mean profit which can be squeezed out, dare to issue any type of writing which the physicians abridge, alter or simply copy and publish as apparently new and in their own name, while the decrees of Princes remain silent*.[91]

Vesalius thus devised a wholly different route of publishing for the *Fabrica*, one that would allow him to beat the imitators to all markets by taking advantage of his printer's speed of printing and geographical ability to swiftly distribute it to as many locations as possible. Despite its repute as a printing hub, Venice failed in both cases, being both too slow due to its increase in regulation, and being too available to allowing imitation with its long chain of bureaucracy one

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[88] Ibid
[89] Clark, "Pirates," 303.
[90] Ibid.
[91] Saunders, O'Malley, *Illustrations*, 46-48.

needed to cross in order to publish anything.[92] Publishing in Venice also meant that in order to enter markets in greater Europe, the printed copies would have to cross the Alps, slowing down their arrival to those market and increasing the ease with which would-be plagiarists could copy it and send their copies to market first.[93]

In contrast to Venice, publishing in Basel with Oporinus would eliminate much of Vesalius' fears with regard to the potential for plagiarism. Padua's centralized location would allow Vesalius to quickly distribute his publication to markets in Italy, France, and Germany.[94] Swift access to all three of these markets and beyond would allow Vesalius to deliver a high quality product to a large audience in a much-diminished time period far ahead of the inevitable pirated copies. Vesalius' name and attachment to the product and illustrations and information therein would be well-known by the time copies would begin to circulate. Cornering the German market was especially important to Vesalius, given his only copy in the Vernacular was a German translation of the 1543 edition. Germany was at the time already known to be one of the largest consumers of printed books in Europe.[95]

Vesalius' strategy allowed him to push his publication to the widest possible audience in the shortest amount of time, bringing his work immediate success. Much evidence shows that shortly after its publication in 1543, it already occupied the European *zeitgeist*. A January 1544 letter between medical practitioners in Germany attests to its immediate success among the medical community.[96] The book found success outside of the medical community as well, since,

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[92] Nutton, "Historical," LXXX, XCV – XCVIII; Clark, "Pirates," 304 – 305.
[93] Clark, "Pirates," 304.
[94] Clark, "Pirates," 305 – 306.
[95] Nutton, "Historical," LXXX.
[96] Clark, "Pirates," 309.

as Kornell points out, there was a shared market for anatomical illustrations between the medical and artistic communities.[97]

Given the success *en masse* of the original publication, the *Fabrica* and its author were well-known throughout Europe by the time pirated copies had begun being printed. Given the reputation of the original, any influence the copyists work may have had can be attributed to the work of the original, such as the Latin plagiarism published by Thomas Geminus in London in 1545, and his later English translations of the 1543 and 1555 editions of the original published in 1553 and 1559.[98] He took advantage of the ease of plagiarism afforded by woodblock printing to trace Vesalius' illustrations, then reprint the illustration as his own. Furthermore, many pirated copies, like Geminus', failed to include the backgrounds present in the original plates [Fig. 22].

One notable partial exception to absolute plagiarism was produced by Spanish surgeon Juan Valverde de Amusco (1525 – 1587), in which he included both copies of Vesalius' illustrations alongside several original illustrations. While the illustrations are overall poorer in quality [Fig. 23] compared to the masterfully produced illustrations of the *Fabrica*, Valverde's 1556 *Historia de la composición del cuerpo humano* incorporated both several points of new or corrected information compared to Vesalius' publication.[99] However, the illustrations are either directly lifted or otherwise copied from the *Fabrica*, and less consistently dispersed throughout the text, to have the same impression on the reader as they do in the *Fabrica*, in which nearly every page contains an illustrations of some kind. Valverde's text, written in vernacular and on

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[97] Kornell, *Flesh and Bones*, 30 – 32.
[98] Clark, "Pirates," 309.
[99] Luis-Alfonso Arráez-Aybar, Concepción Reblet, and José Luis Bueno-López, Juan Valverde de Amusco: Pioneering the Transfer of Post-Vesalian Anatomy, from *Anatomia*, Vol. 2, No. 4, pp. 450-471 (Basel: MDPI, 2023).

lower quality, smaller paper than the *Fabrica*, appealed in different ways to the less-educated and less-wealthy crowd than were targeted by Vesalius. Regardless of plagiarism, or perhaps because of it, Valverde's text in effect helped spread the message and lesson Vesalius was attempting to get across through his own text, effectively widening the audience affected by Vesalius' work.[100]

V. Addressing Alessandro Allori's Sketches

Having established the influence of the *Fabrica* on all facets of European society, we will return to our discussion of Alessandro Allori's unplaced sketches. Allori's interest in anatomy is known through Vasari, who wrote in his *Lives* that "this young man has demonstrated how much he desires to master the anatomy of the human body, and how he has studied it and given it his attention."[101] Raffaello Borghini also comments on Allori's proficiency in using anatomy support his portrayal of the human body, writing that he "demonstrates the art of drawing figures," portraying "every nerve, every vein, every bone, and every muscles" allowing him to create "many nude figures of complete beauty"[102] such that his nudes are "the most beautiful bod[ies] that it is possible to see."[103] Allori's contemporaries clearly were impressed by his creation of the nude human body, which they attributed to the extent of his anatomical knowledge.[104] That they pay such compliments specifically to Allori, often in relation to his fixation on the study human anatomy, shows that Allori's knowledge of the internals of the human body greatly enhanced his abilities to naturalistically portray it to the utmost extent, beyond even his contemporary

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[100] Kornell, *Flesh and Bones*, 7, points out that Valverde "stated that the Vesalian woodcuts were so well done that it would seem 'envious or mialignant' not to use them."

[101] Vasari, *Lives*, 2080.

[102] Raffaello Borghini, *Il Riposo*, trans., ed., Lloyd H. Ellis, Jr., (Toronto: University of Toronto Press, 2007), 309.

[103] Borghini, *Riposo*, 89.

[104] Lazzarini, Elena, *The Nude in Central Italian Painting and Sculpture (1500-1600): Definition, Perception and Representation*, PhD Thesis, University of Leicester, 2005, Thesis. https://hdl.handle.net/2381/30490, 92-99.

Florentine Academicians. As was previously explained, Allori's ownership of Vesalius' text afforded him direct knowledge of the human body, both through its images and its in-depth explanations on dissection, for which he was likely aided by Alessandro Menchi, appointed doctor to the Accademia del Disegno.[105]

Allori planned a treatise on anatomy and drawing entitled *Le regole del disegno di Alessandro Allori e la nascita del dilettantismo pittorico*, which remained unfinished and unpublished after five iterations, all now held in the *Biblioteca Nazionale di Firenze*.[106] In the first treatise, Allori appears to be explicating upon the anatomy of the human body during his dialogue while flipping through the *Fabrica* as a reference.[107] There is thus clear evidence, both primary and secondary, of Allori's ownership of a 1543 edition of Vesalius' text. Furthermore, Allori makes reference to the works both of Vesalius and Valverde in the fifth version of his planned treatise, writing that for a greater and fuller explication of the anatomy than what will follow, the audience should reference Vesalius and Valverde:

> *talché volendone più piena e maggiore intelligenza di quello che io sia per dirne, ci sono autori nobilissimi che hanno scritto, tanto antichi quanto moderni, sì come ne' tempi nostri ha fatto il dottissimo e diligentissimo messer Andrea Vessallio in quella sua bell'opera, né mai a bastanza lodata,* De humani corporis fabrica*, scritta nella latina lingua et insieme inserendo, quanto facci a proposito, le voci tanto nella lingua greca quanto nell'ebrea; e più pur modernamente ha scritto nella nostra lingua Giovanni Valverde*

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[105] G. Gentilini, "Medici e anatomisti," in *La Corte il mare i mercanti, La rinascita della Scienza, Editoria e Società, Astrologia, magia e alchemia: Firenze e la Toscana dei Medici nell'Europa del Cinquecento* (Florence: Electa, 1980), 172.

[106] Barocchi, *Scritti d'arte del Cinquecento,* Vol. 8 (Torino: Einaudi, 1979), XVII

[107] Nanobashvili, "Allori's Manual," lecture.

> *spagnuolo. Saranno questi autori a lor signorie di molto contento a quella ora che per meglio chiarirsi ne farà loro di bisogno. (so, wanting a fuller and greater understanding of it than I am capable of describing, there are very noble authors who have written, both ancient and modern, just as the most learned and diligent Messer Andrea Vesalius has done in our times in his beautiful work, not ever sufficiently praised,* De Humani Corporis Fabrica*, written in the Latin language and at the same time inserting, as far as is appropriate, entries both in the Greek and in the Hebrew language; and more modernly, the Spanish Juan Valverde wrote in our own language. Your Lordships will be very pleased with these authors when you need better clarification.)*[108]

Many of Allori's anatomical sketches have previously been historically contextualized as being in relation to his planned treatise. As previously mentioned, Amerson identifies eight of Allori's sketches [Figs. 24 – 31] as examples of *écorché* figures that, in the eyes of Allori, artists needed to know how to make in order to produce drawings of the human body.[109] He additionally discusses how Figure 31 confirms that Allori was, indeed, directly looking at Vesalius' *Fabrica*, seen in comparison to the Second Plate of the Muscles [Fig. 32]. Amerson describes Allori's sketch in Figure 31 as proof of "the lingering importance of Vesalius' illustrations."[110] Amerson's contextualization of these *écorchés* appears to be properly placed, given that they reiterate Alberti's concept of the need for artists to first draw the skeleton, then the muscles, then to clothe it in skin.

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[108] Allori, "Ragionamenti", 1949.
[109] Amerson, *Problem of the Écorché*, 25 – 26, 28.
[110] Amerson, *Problem of the Écorché*, 28.

Curiously, though, among others, Amerson seems to have left out two of Allori's *écorchés* [Figs. 1, 2] in his in-depth analysis of what appears to be every *écorché* and anatomical sketch created by every artist he could find. These two sketches, among others, lack historical attribution; for the purposes of this study, I will focus on these two alone. The present extent of historical attribution is from the Uffizi's catalogue of the 1984 exhibition, *Immagini anatomiche e naturalistiche nei disegno degli Uffizi*, in which the curators, Roberto Paolo Ciardi and Lucia Tongiorgi Tomasi, have compiled all of the anatomical and *écorché* sketches and models in the Gabinetto dei Disegni:

> *Il foglio è tradizionalmente attribuito ad Alessandro Allori (Lecchini Giovannoni, scheda ministeriale 1970). Si tratta di uno studio analogo agli scheletri animati esposti all mostra, ai due scorticati nn. 10245 F degli Uffizi e D 1635 del Museo di Edimburgo già citati, e ai nn. 10 e 14 del Louvre. (The sheet is traditionally attributed to Alessandro Allori (Lecchini Giovannoni, ministerial file 1970). It is a similar study to the animated skeletons found in this exhibition, the two ecorches nos. 10245 F of the Uffizi and D 1635 of the Edinburgh Museum already mentioned, and to nn. 10 and 14 of the Louvre.)*[111]

The animated skeletons and *écorchés* mentioned here are those previously discussed in Amerson's dissertation, as is the *écorché* in Edinburgh. Inventory Number 10 from the Louvre is also discussed by Amerson in his paper (Figure 31).

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[111] Roberto Paolo Ciardi and Lucia Tongiorgi Tomasi, *Immagini anatomiche e naturalistiche nei disegni degli Uffizi, Secc. XVI e XVII* (Florence: Olschki, 1984), 87.

Inventory Number 14 of the Louvre [Fig. 2], meanwhile, seems to me to be more in direct relation to the figure originally lumped in with the rest of Allori's anatomical figures in the Uffizi's catalogue entry [Fig. 1]. While Amerson's passing prevents me from understanding his reasoning for not addressing these two *écorchés* that so clearly fit the theme of his *catalogue raisonné*, I will myself endeavor to rectify both the Uffizi's and Louvre's lacking historical attribution to these works.[112] In so doing, I hope to demonstrate more clearly my claim on the convergence of art and medicine.

Placing these two sketches within their proper historical context requires side-by-side visual analysis in relation to several of Vesalius' plates from Book II of the *Fabrica*, the so-called "muscle men." First, though, I believe addressing the orientation of Allori's is particularly important, especially when regarding the other sketch from the Louvre referenced by the Uffizi catalogue entry.[113] Whereas Ciardi and Tongiorgi choose to contextualize these three sketches together, placing them next to each other as I have done [Fig. 33] shows an immediate difference. This outlier is clearly a direct study of Vesalius' second "muscle man" [Fig. 32], whereas the other two are not as obvious in their presentation. As Amerson already discusses the former work, I will refrain from addressing it further, and instead focus on the works not yet addressed in any of the literature on Allori.

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[112] Several additional of Allori's anatomical sketches also remain unidentified within a historical context, such as that referenced in the Louvre's commentary on the Allori sketch discussed below, inventory number 8 at the École de Beaux Artes. However, this works are stylistically distinct from the two presently discussed. The most striking difference is the extent to which the work in the École de Beaux Artes is completed, compared with the lack of the head in both of the works discussed in depth in this paper. The medium itself appears different, as well, leading me to suspect it was created at a different time than the two sketches discussed here. As such, I will leave it for future discussion.

[113] Ciardi, Tongiorgi, *Immagini anatomiche*, 87.

The two remaining sketches [Fig. 34] are extremely similar to each other. Their mediums appear identical, and they appear to be on the same size of paper. Owing in addition to the stylistic similarities, Allori seems to have created them at around the same time. By these standards, they appear quite similar to two of the sketches discussed by Amerson [Figs. 25, 27], all four being *écorché* figures lacking a head. The main difference between the two discussed by Amerson and those two described in the present work is in the posture of the figures. The two discussed by Amerson, despite being of similar line work and medium, appear in much more dynamic motion, compared to the stiffness of the back and limbs of the figures in Figure 34. Due to the dynamic and original poses in Figures 25 and 27, which line up well with the articulated skeletons in Figures 24 and 26, they seem more to have been made as complete studies of the motion of the muscles and the body, rather than studies of the muscles themselves. Meanwhile, the figures in Figure 34, due to the stiffness of their poses, appear to have been made as preparatory studies of the human body itself, rather than studies of the body in motion. As Figures 25 and 27 were also previously addressed by Amerson, and due to the seemingly more definite purpose of these figures as studies of dynamic motion, I will omit them from the present consideration.

Returning to Figure 34, these two sketches have a certain roughness and stiffness that may suggest a more rushed creation. Especially when compared to his other sketches, like the écorchés of the foot [Fig. 28] and leg [Fig. 29], which are masterfully shaded and deeply intentional in their line work, these two sketches seem less definite in their execution. Their stiffness seems to additionally suggest their being rough preparatory sketches, as this quality is absent in the majority of his oeuvre. Yet the anatomical accuracy and attention to detail present seem to suggest careful time and effort expended in their productions.

This seeming contradiction between these sketches' rushed nature yet careful attention to detail suggests that Allori could have created them over the course of his own dissections, alongside reference to Vesalius. As mentioned by Gentilini, Allori worked directly with the doctor of the Accademia del Disegno, Alessandro Menchi, to perform his own dissections independent of the program of the academy.[114] As Barzman points out, anatomical study held a central role in the academy's curriculum, noting the Academy's statute of "Anathomia" as part of the regular winter curriculum, and how artists, specifically Allori, would often take the bodies for further independent study.[115]

Given Allori's noted interest in Anatomy by Vasari, known association with Menchi, personal ownership of a 1543 *Fabrica*, and noted independent study of anatomy, it seems quite likely that he would have made sketches of human anatomy during these studies. If the two sketches in Figure 34 are two such sketches, as I speculate, it would make sense that they appear rushed and stiff relative to Allori's other sketches, yet with extreme detail: putrefaction of cadavers occurred quite rapidly. Even under the coldest conditions, which would serve to best preserve the corpses (hence the slating of "Anathomia" for the winter curriculum), the corpses would still decay quickly enough to make their study quite difficult and rushed. This could thus explain the rushed line work combined with the extreme detail.

In endeavoring to concurrently dissect and sketch a human corpse, Allori's personal copy of Vesalius' work would have come in quite handy, given its extremely detailed instructions on dissection. If the annotations discovered by Margócsy et al. are indeed Allori's, as they

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[114] Gentilini, "Medici e anatomisti," 172.
[115] Ibid; Barzman, *Florentine Academy*, 167 – 168.

propose,[116] it would mean that Allori could read Latin well enough to follow Vesalius' detailed instructions and figures depicting the proper cuts to make to best study the human body. Vesalius' instructions can be seen, for example, in Book I section 39, entitled "By What Method the Bones and Cartilages of the Human Body may be Prepared for Inspection."[117]

It would thus seem that Allori took Vesalius' advice on the need to perform one's own dissections to heart, having used Vesalius' work to study the human body on his own to produce the sketches in Figure 34 on the superficial musculature. Their seemingly rushed nature would thus make sense in that he likely created them in the midst of performing dissection, as suggested by the remarkable anatomical accuracy. That he included greater detail than was present in the corresponding individual Vesalian muscle plates could be linked to the fact that Allori was producing an anatomical treatise of his own. I therefore propose that Allori was preparing these sketches as preparatory works for that treatise, which he positions in direct conversation with the *Fabrica*'s plates of the muscles.

Allori's positioning of these sketches in direct conversation with the *Fabrica* could make sense in several regards, the first of which is the nature of their being flipped relative to the Vesalian plates. If Allori were preparing these for his treatise, which he intended to publish upon its completion, the final sketches appearing therein would be flipped upon printing. Because the final products would be flipped, Allori had to prepare the preparatory illustrations for the woodblocks in reverse. Flipping these sketches as they would have appeared in the final product

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[116] Margócsy et al., *Worldwide Census,* 193 – 194.

[117] Andreas Vesalius, *The Fabric of the Human Body: An Annotated Translation of the 1543 and 1555 Editions*, eds., trans., Daniel H. Garrison and Malcolm H. Hast (Basel: Karger, 2014),304 – 314.

[Fig. 35] allows us to observe a proper comparison with the Vesalian sketches, as they now match much more closely with the Vesalian plates.

VI. Allori's Dialogue with Vesalius

Once flipped, these sketches seem to correspond to Vesalius' first and second plates of the muscles [Fig. 36]. This comparison demonstrates the first part of the simultaneously artistic and scientific dialogue Allori is positing with Vesalius' work in which both provide a similar treatment of the anterior, lateral, and part of the posterior superficial musculature through similarly frontal and profile views of the same figure.

In Vesalius' first plate of the musculature [Fig 37], the écorché is posed in *contrapposto*, allowing for maximal coverage of the musculature from a frontal view and taking full advantage of its skinned form to achieve a maximal compositional balance. The right arm is internally balanced with its relaxed open palm opposing the arm muscles that tense in their rotation of the palm towards the viewer. The left arm is similarly internally balanced, with its relatively tensed hand closed and extending its forefinger, while the muscles of the arm are otherwise relaxed and lengthened. Cocking the wrist of the left hand towards the body marvelously maintains this sense of relaxation in the arm, as it serves to primarily hide those muscles engaging in the tensing of the hand. Vesalius' illustrator continues to take full advantage of the musculature, demonstrating how the left shoulder muscles, marked by "κ," contract to cock the wrist, while those of the left shoulder remain lengthened.

The figures' legs display a similar *contrapposto*, both internally and relative to each other. As the left leg tenses while stepping forward, the left rectus femoris marked with "ʃ" contracts. The left foot is planted, and the whole leg tenses to support the body's weight. Meanwhile, the

right leg remains almost wholly relaxed as it shifts the body's weight onto the left leg. As the lower half of the body is shifted towards the right, the head provides a final balance as it tilts upwards and to the left. In so doing, the muscles of the left side of the neck tense as they contract to pull the head, while the right muscles remain relaxed and lengthened.

All of the elements of Vesalius' first muscle man come together to form a masterful *contrapposto* in which the limbs and musculature balance each other both internally and externally. The composition is completed as the rightward weight of the figure balances the landscape in the background, which takes up much of the open space to the left of the figure. Overall, this figure alone demonstrates the mastery of the illustrator, supporting the hypothesis that the work is based on the models of Titian and completed by students of his workshop.

In comparison to the artistic mastery of the composition in Vesalius' first plate of the muscles, the rough sketch by Allori [Fig 38] appears compositionally lacking. Allori seemingly compensates for this with what approaches a three-quarters frontal pose that shows off more of the musculature than Vesalius' fully-frontal figure, and seemingly features several portions of muscle in a state of semi-dissection. That Allori has cut away muscles is apparent in the meagerness of the left upper arm and left thigh. Earlier nudes demonstrate his clear knowledge of proper human proportions, as in his (presumably) earlier 1568 *Hercules Crowned by the Muses* [Fig 39], in which he demonstrates a contrastingly deep understanding of the proper thickness of the thigh and shoulder in both the male and female nudes dotted masterfully throughout the composition.

Given his early mastery of human proportions, the thinness with which Allori depicts the leg and upper arm in this sketch can only be intentional. To this end, Allori seems to have developed a system to indicate the attachment points of removed muscle in this figure, placing an

“o” twice on the clavicle, once on the head of the humerus where the deltoid of the upper right arm would have attached, and several on the knees where the rectus femoris would attach. In partially dissecting the muscles, Allori reveals to view several of the muscles one layer deep to those he has removed. For comparison as confirmation, one can view the bulkier shoulder of the right arm, clearly betraying the presence of the deltoid, and absent of circles. The right hand is also bulkier than the barely portrayed left, whereas on the left is visible another small circle, again demonstrating a point at which a tendon has been excised.

Similar to the left hand, several other body parts fade into the nothingness of the paper. While perhaps due to damage and wear over time, given the partial outline of the skull, it seems more likely that Allori has intentionally left out the head and feet of the figure, as he appears attempting primarily to portray the musculature of the torso and limbs. Absent body parts aside, the anatomical detail Allori does choose to portray is striking, allowing him to demonstrate in a single image what Vesalius chooses to do in several. Allori portrays with greater precision many of the muscles that tend to fade into the body of the Vesalian plate, which is remarkable given what initially appeared to be a rough sketch. Most illustrative of Allori’s increased attention to detail is the inclusion of the xiphoid process sticking out below the rib cage and what appear to be several intercostal muscles of the rib where he has removed part of the pectoralis major on the left side.

On the figure’s left side, Allori incorporates limited *chiaroscuro* through cross-hatching to attain a degree of three-dimensional modelling of the figure. The light source seems positioned to the left of the figure, noticeable also in the slightly heavier shading on the inner edge of the right arm. However, the seemingly rough nature of this sketch largely obscures any modelling.

Regardless, rather than appearing flat, what modelling is present provides the figure with some amount of volume, such that it still seems to fill space in three-dimensions.

In comparing the corresponding frontal illustrations of Vesalius and Allori in isolation [Fig. 40], the already-apparent effect seems to be a swapping of the roles of what contemporary readers would assume to be filled by the artist and the scientist. Allori, master Florentine painter of the Late Renaissance, assumes the role of observational scientist, whereas Vesalius appears to have taken on the role of artist. Indeed, further consideration of Vesalius' figures appears to show inconsistencies in proportion, perhaps unbefitting of the work of a master anatomist. [118] Consistent with modern assertations that the illustrations of the *Fabrica* were carried out by several artists, the lower arms and upper thighs appear rather large compared to the rest of the figure. While perhaps quite stylistically pleasing, it is another instance of the imperfection of Vesalius' pioneering work in anatomy, laying a foundation for future improvements on what was the first work in its field. By comparison, Allori's figure seems to be mostly proportionate, once the excision of certain muscles are taken into account, demonstrating his proficiency in his rather scientific observation of the human body.

The conflagration between artist and anatomist once again takes shape in the profile views Vesalius and Allori provide. As with his previous illustration, Allori's figure appears to be largely incomplete, with several small circles sprinkled throughout [Fig. 41], seeming to confirm the hypothesis that these demonstrate places where Allori has dissected parts of the musculature. They here seem to correspond to the same places in his previous sketch, seeing as the left deltoid

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[118] Many thanks to University of Chicago Professor of Organizational Biology and Anatomy Dr. Callum Ross, PhD, for pointing this out.

again appears to be absent, though from this angle the left thigh appears much bulkier than previously. This aligns with the previous figure, in which the left leg appears thinner due to the frontal view, as opposed being bulkier in the present profile view. Similar to the previous figure, Allori's figure is not fully in profile, angled here slightly towards the back such that his figure is able to show off a large portion of the posterior musculature. Due to the modification to the figure's profile view, the abdomen of the figure appears rather gaunt, a result of the slight angle at which this profile view is portrayed.

Also similar to his frontal figure, Allori uses cross-hatching here to create modelling for the figure, though to a greater extent. The light source appearing to the left of the page bathes a large swath of the figure's posterior in shadow, providing better three-dimensional modelling of the figure. The line work also appears more heavy in certain areas than his frontal figure, leading to a greater presence on the page. At the same time, the right hand, both feet, and more prominently this time, the head, all melt into the page. As in the previous figure, the left hand is more fully articulated, further supporting the thought that this figure exists in the same state of dissection as his previous figure, such that Allori might use it to show off those muscles that were invisible from the front.

As with his previous figure, the relative roughness of the sketch compared to those others Allori has created is again compensated for by the rich detail of the musculature. Like last time, muscles appear in ways not depicted in Vesalius' fourteen muscle plates, articulated to a greater degree that does not sacrifice the figure's still-artful presence on the page. That the figure remains roughly sketched in this figure, with its shading only existing in cross-hatching, further supports the idea that this figure was meant as preparative for his anatomical treatise, rather than a preparatory work for a painting or a study of *écorché*. When cutting the woodblock, shading as

one would do with chalk or pencil is impossible, as the cutter must incise the block. To create shading, as seen in Vesalius' muscle men [Fig. 42], a block cutter must different densities of cross hatching, visible up close, such that when the viewer sees the whole of the figure, different densities of cross-hatching become regions of different degrees of shading.

Since Allori chooses to use cross-hatching in the present figure, rather than the shading seen in his sketches of the skeleton [Fig. 43], it seems to be an intentional rather than incidental decision. Since he would only need to use cross-hatching if he were preparing to cut through the illustration onto a wood block for printing, which I propose was to be the intended use of this figure, if not a preparative sketch for the final illustration of the woodblock.

The difference between the preparations of his sketches for different purposes is further apparent when one compares the sketch of the skull appearing in the fifth draft of his treatise manuscript [Fig. 44][119] to one of the previous studies of motion, such as that in Figure 27. The craftmanship seen in his study of the human form [Fig. 27], from the velvety quality of the linework and subtle shading, stands in striking contrast to the illustration in his treatise. Much like the present anatomical sketch, his manuscript figure uses cross hatching for shading, with cruder line work relative to his more finished illustration [Fig. 27]. Of course, this could be the very point of the illustration: within the context of the treatise, Allori has prepared this sketch during a drawing lesson from Bronzino;[120] it is meant to appear amateurish, thereby allowing any unskilled layman to attain a composition of the same quality. If this were true, the present sketch

[119] Allori, "Ragionamenti", 1972.
[120] Allori, *Ragionamenti*, 1941 – 1981.

[Fig. 41] would likewise seem intended as preparatory for what was to be a full explication of human anatomy in his treatise.[121]

To contrast what would appear to be an only partially realized version of Allori's final product, the *Fabrica*'s second plate of the muscles [Fig. 32] maintains its overall anatomical accuracy while remaining artistically balanced in its composition. As before, Vesalius' team of artists takes after their master in composing an artistically balanced work between background and pose. The profile positioning demonstrates primarily the lateral musculature, with the posterior and anterior surfaces of the abdomen appearing as well. The arms and legs are positioned to show the lateral and medial surfaces not visible in the previous plate, once again balanced relative to each other by their positioning on the page thanks to the increased dynamism of the present figure.

Seemingly here engaged in a run, the figure positions its left leg along the midline of the of the body, firmly planting it in the ground, while engaging the right leg in pushing off the ground. The head is turned upward, providing ample compositional support to the arms extended in front of the figure. The arms' rightward positioning serves to balance the compositional weight of the legs and head of the figure. Relative to the *Fabrica*'s previous plate of the muscles, Vesalius' figure here appears much more well-proportioned, suggesting more competent communication between the artists creating this plate.

Like the previous Vesalian plate and similar to Allori's figures, the present figure's volume is articulated through cross-hatched shading, such that it is firmly established within the

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[121] Nanobashvili, *Allori's Manual*, lecture.

three-dimensional space of the image. Vesalius employs a singular light source to the right of the figure that allows him to create consistent *chiaroscuro* throughout the entirety of the figure. Intentional and consistent cross-hatching allows those surfaces facing the left of the plate to feature more dense cross-hatching than those facing the right side of the page, such that the final effect that naturalistic lighting appears throughout.

Notably, Vesalius has left the cartilage of the nose on this figure intact while removing that of the ears. Removing the ear but retaining the nose is a clear, intentional decision that helps maximize the elegance and grace of the figure in both the profile and frontal view. The slight bump and curvature of the nose gives the impression of an aquiline nose, alluding to the grace and nobility of Roman antiquity.

Vesalius seems to be placing a Roman figure in the ruins of a roman landscape, possibly an intentional jab at Sylvius' comment on any fault found in Galen's text resulting from the "later decadence and degradation" of the human form from its Roman ancestor.[122] The background of the first and second plate of the muscles features the coffered roman barrel vault of Willy Wiegand identifies as the ruins of a bath house,[123] and far in the background the more contemporary palaces and buildings of the Renaissance. The background of the first plate of the muscles features a similar landscape *all'antica*. The Roman arcading invokes a sense of continuity with the arcading in *The Second Plate of the Muscles*, yet from a different angle, distance, and point of view.

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[122] Saunders, O'Malley, *Illustrations,* 13.

[123] Willy Wiegand, "Marginal Notes by the printer of the *Icones,*" from *Three Vesalian Essays to Accompany the* Icones Anatomicae *of 1934* (New York: MacMillan, 1952), 41.

Regarding the background of these figures, E. Jackschath of Tilsit[124] in 1903 showed that the eight anterior "muscle men" and the six posterior "muscle men," when placed contiguously in sequence in reverse of their appearance in the *Fabrica*, formed a continuous panorama.[125] Henry Cushing in 1943 coined the terms "eight-series" [Fig. 44] and "six-series" [Fig. 45][126] to refer to the assemblage of these figures that showed a completed landscape. This followed Willy Wiegand's identification of the exact location of this background in 1934 as the Euganean hills, near Padua [Figs. 46, 47].[127] As Cushing writes, it is "the countryside of Petrarch, as a matter of fact. There the site of the old Roman Thermae shown in ruins…the Bacchiglione river with the bridge over it, and the rugged trachytic rocks can all be easily identified."[128]

The subtle combination of aquiline nose and placement among the combination of Paduan ruins and contemporary landscape, alongside the statuesque articulation of the figures themselves, monumental upon the large folio-size pages, invokes a combination of Renaissance elegance and Antique authority that would greatly appeal to the humanist intellectual nobility of Europe. Given his Louvaine humanist and Parisian medical education,[129] Vesalius intentionally knew to design these prints so as to recall the works and time of Galen. In combination with Vesalius' printing and distribution strategy, this appeal to contemporary interests was likely in pursuit of maximizing the popularity of *De Fabrica* not only as a piece of intellectual appeal but also as a work of contemporary art, recalling the figures and landscapes of Titian on which these

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[124] Cushing, Harvey, *A Bio-Bibliography of Andreas Vesalius* (New Haven: Yale University Historical Library, 1943), 1943, 187.

[125] Saunders, O'Malley, Introduction, 29.

[126] Efrain A. Miranda, "The Landscape Panorama of Vesalius' 'Muscle Men.'" Medical Terminology Daily. Accessed April 1, 2024. https://www.clinicalanatomy.com/mtd/665-the-landscape-panorama-of-vesalius-muscle-men.

[127] Wiegand, "Marginal Notes," 38 – 41.

[128] Cushing, *Bio-Bibliography*, 28.

[129] Saunders, O'Malley, *Illustrations*, 11 – 15.

were likely based.[130] The themes of antiquity merged with modernity also served to allow Vesalius to contextualize these "muscle men" within the context both of antiquity, giving them authority equal to Galen, but also as avant-garde, allowing them, and by extension Vesalius' work, to supplant that of Galen as the supreme anatomical authority in medicine.

Given its deeply embedded Humanist arguments, it is no surprise that the pose of the second muscle plate, alongside the rest, became the unanimous hallmark of demonstrating the divine perfection of human anatomy.[131] With one hand pointing towards the earth, reflecting the Aristotelian modes of thinking, and the other towards the heavens, a clear reflection of the Neo-Platonist ways of thinking. The figure is the summation of the Galenist ideology of the divine creation of the perfection of the human body. The muscle figures reflect several of the dominant classical motifs that were so prevalent in Renaissance humanism, such that these figures, halfway between life and death in their dynamic motion, represent both the mortality of the earthly sphere and the immortality of the heavens, again a reflection of Galen's own philosophical thinking, to which Vesalius remained deeply indebted throughout the course of his work.

Extrapolating from these Galenic motifs, the theme of *memento mori* is a pervasive presence throughout the plates of the musculature and those of the skeleton. Figures are seen engaging with their surroundings in such a way that they both accurately exhibit the anatomical features Vesalius intended to bring to light and appeal to a very Humanist and classically-trained audience, as the figures contemplate their own mortality in the midst of their own dissection. For

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[130] Saunders, O'Malley, *Illustrations*, 29
[131] Nutton, "Historical Introduction," CI – CII.

instance, Vesalius' three plates of fully articulated skeletons are posed such that they seem to be contemplating or mourning their own deaths [Figs. 48 – 50].

Allori's figures present a second concurrent dialogue with the Vesalian plates in the specific positioning of his figures. While Allori's figures may seem positioned randomly, such that they might better demonstrate multiple views of their anatomy at once, it seems more likely that Allori, in his persistent study of his 1543 edition of the *Fabrica*, may have noticed that the first two figures of the anterior and posterior musculature offer a pattern of continuous movement. Taken together, the plates of the muscles seem to capture images of a single figure engaged in a continuous gait when viewed in sequence from the tenth to the ninth, then to the first, then the second plates of the muscles [Fig. 51]. Allori seems to be engaging with this motion through his own sketches, such that his profile figure lines up almost perfectly between the tenth and ninth Vesalian figures, while his frontal figure lines up between the first and second plates.

In the tenth plate of the muscles [Fig. 52], Vesalius' partially dissected figure is positioned with its right foot partially planted, having just taken a step, while its left foot is behind the figure, on the ball of its foot, as if about to step forward. Its left hand is raised to point up and to the left, with the elbow just below the shoulder and the hand at eye-level. The left forearm is directly beneath the shoulder while the elbow has a slight bend forward and to the right of the figure, with its palm facing forward.

Placing Allori's figure in sequence after the tenth Vesalian plate [Fig. 53], we see the motion initiated in the Vesalian plate continued in Allori's sketch. The right foot has gone from being partially planted to being now firmly planted, with the leg now more fully straightened to support the figure's weight. The left leg has gone from being behind the figure and pushing off

the ground to now being frozen mid-step, with leg raised and foot hanging in the air. Meanwhile, the left arm has continued the previous image's upward trajectory, with the elbow fully swung upward above the shoulder and the hand above where the head would be. The right arm has also continued its motion, with the elbow at the same angle but now behind the figure, while the wrist of the right hand seems to have snapped backwards during the figure's motion.

The next image in the sequence would be Vesalius' ninth plate of the muscles [Fig. 54]. This figure completes the step with the left leg that Allori's figure has initiated, with the left foot now firmly planted and the knee fully straightened to support the figure's weight. In doing so, the figure has placed its right foot behind its center of gravity, heel lifted upward as the figure shifts its weight from the right to the left leg. The raised left arm has swung back down, though not completely yet, as its elbow is still bent and the hand is still projected forward. The right arm has moved forward to rest beside the figure, completing the arc begun in the tenth plate and expressed by Allori's sketch. Interestingly, the right hand does not seem to be engaged in any motion between the tenth and ninth plate in isolation. Allori *creates* the hand's motion in his sketch by lining up the motion of the figure's legs with that of the Vesalian figures. The elbow's appearance in the present plate slightly behind the figure's midline thus makes sense in the context of Allori's sketch.

The first Vesalian plate [Fig. 55] initiates an increase in the figure's gait from its position in the ninth plate. The body of the figure moves from a classically casual yet stationary *contrapposto* in the ninth plate to a more dynamic stance in the first plate that establishes an increase in its speed. The left knee bends in anticipation of transferring its weight into forward momentum, while the right heel is raised higher in anticipation of gaining more force. The right

arm is now fully extended, and the left hand begins pointing toward the ground with its forefinger while the other fingers begin to curl.

Placing Allori's frontal figure next in sequence [Fig. 56], we see the legs arranged in a similar position to the previous figure, but the gait seems to have increased. The left leg extends more fully as the figure begins initiating a step with the right foot, shifting its body on top of it as it continues to transfer its weight. The right leg remains in a similar position to that in the Vesalian plate, preparing to pushing off the ground. Both of the arms begin to lift upward, both gaining a greater bend in the elbows as they are caught in the midst of lifting skywards. The left hand is positioned at about shoulder level, with the forefinger now fully extended and the other fingers now more complexly curled. The right hand is about parallel with the figure's genital region, seeming to engaging in an almost half-*pudica* modesty, its fingers now pointing downwards as the arm begins to lift. Again, we see Allori *creating* a context in which the first and second Vesalian muscle plates can be seen in continuous sequence. In this case, he has reversed the relationship seen previously, with the hands and arms creating that continuity, rather than just the legs.

The intermediate nature of Allori's figure is fully realized in sequence with the second Vesalian plate of the muscles [Fig. 57]. Committing to the increased gait of the previous two images, the present figure places its weight fully onto its left leg. The left foot is now fully planted just as the right foot pushes off the ground behind it, perching on the tips of its toes as it begins to step forward. The right arm has completed the motion initiated by Allori in the previous image, as it lifts it parallel with its navel, fully pointing towards the ground. Meanwhile, the left hand has continued its upwards trajectory, more fully lifted above the figure's head to point towards the sky.

Fully putting this sequence together, Allori's figures both create and fully realize the potential trajectory of the dynamic Vesalian figures, demonstrating his artistic mastery over portraying figures in motion [Fig. 58]. In doing so, Allori creates a dialogue between his and Vesalius' figures that would lend value to his own anatomical treatise, were it to be published and feature these figures, by creating not mere copies, but full realizations of the full artistic potential of the *Fabrica* that was already a masterpiece in its own right. Allori's dialogues with Vesalius as such serve to elevate the artistic merit of both, through the genius Allori demonstrates in experimenting with his observations of both human anatomy and the patterns that Vesalius perhaps unknowingly set up.

Allori's arrival at the sketches of his figures through independent investigation, and likely also through study of the Vesalian plates, demonstrates his use of observational science to perfect his own artistic practice. In observational science, as Vesalius demonstrated, one uses their observations of the world to reevaluate and make changes to previous conclusions, both their own and those found in the literature. By initially copying Michelangelo,[132] then moving to his own dissections by independently reproducing the anatomical practices outlined by Vesalius, Allori affirms and augments the findings and conclusions of previous practitioners in his field. As Allori demonstrates his merit both as artist and anatomist, he engages with both the artistic and scientific practice of both Michelangelo and Vesalius. Allori then uses what he finds in his active investigations to tweak those previous conclusions through synthesis with his own findings, arriving at new conclusions on the nature and depiction of the human body, seen in both the presently discussed sketches and in his later depictions of the nude and the musculature.

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[132] Pilliod, *Genealogy*, 172.

Allori is by definition engaging in observational science, similar to that which Vesalius had done to produce his 1543 and later 1555 editions of the *Fabrica*. Vesalius, like Allori, does not limit his literature to medical practice: he actively engages with the works of Galen while simultaneously engaging with Michelangelo and Titian.

VII. Conclusion: The Cinquecento Convergence of Art and Medicine

The publishing of the *Fabrica* in 1543 and the anatomical practice of Alessandro Allori represent the brief moment in both art and medical history during which these two fields truly converged. Vesalius' anatomical atlas was a work of medicine, but also a clear work of art and dialogue with contemporary artists, seen most saliently in the plates of the muscles. Here, Vesalius and the artists under his employ sketch his findings on the human musculoskeletal system in the living, breathing, and dynamic human models and landscapes of Titian. Each individual plate is a work of art in itself, complete with masterfully balanced compositions highlighting the anatomical details of volumetric *écorchés*. These écorchés engaged with the humanist and classicist themes that were at their peak in the mid-cinquecento, allowing their forms to become synonymous with intellectual artistic-anatomical study for both artists and anatomists through to the current day. In short, as much as Vasari helped to raise the artist to the level of the intellectual through his *Vite,* Vesalius' *Fabrica* primed audiences to that reception by raising observational anatomical illustration and dissection from the role of the uneducated butcher to an intellectual practice "worthy of an educated gentlemen, a subject fit for an Emperor."[133]

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[133] Nutton, "Historical Introduction," CIII. Shortly after the *Fabrica*'s original 1543 publication, Vesalius became the personal physician to Holy Roman Emperor Charles V, then to his son Phillip II all the way until his passing.

On the same note, the *Fabrica* created an intellectual environment that literally beckoned to artists:

> *The membranous tissues seen in the face and neck of the third figure, as well as the fibers that run in the muscles, are rather disturbing to the painter, the sculptor, and the modeler of statuary (whose studies it also seems right to benefit). But it is certainly not enough for such persons to understand precisely the muscles that are situated on the surface…*[134]

Vesalius' was a work that while perhaps created for the esteemed nobleman and physician, targeted through the language of its text and monumental illustrations the artist and the sculptor. Very clearly a patron and contemplator of the intellectual arts himself, Vesalius descended from his high Physician's Chair in the dissection scaffolding to be amongst both the corpse and the artist, working with them on the same level by himself engaging in the draughtsmanship of the *Fabrica* with his own hand. While Borghini may have continued to lord over Vasari the intellectual merits of the art of poetry as high above the manual labor of painting,[135] in Vesalius the merits of manual artistic creation and corpse dissection were raised to the still higher intellectual plane of observational sciences.

The elevation and convergence of medical practice and manual artistic creation as intellectual science is illustrated by the anatomical sketch work of Alessandro Allori. His planned anatomical treatise is evidence of this prominence of Vesalius and his *Fabrica* in the daily life of the painter, and proof of the blurring of the lines between art and medicine in this period. That

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[134] Vesalius, *Annotated Translation*, 337.

[135] Pilliod, *Genealogy*, 197.

the artist was working to engage in constructive dialogue with and improve upon the work of the physician would have been unthinkable before Vesalius. Yet in the intellectual climate of Renaissance Florence, engaging in Humanist thought meant the return to the classics, yes, but doing so meant the convergence of all forms of intellect as pure knowledge.

The work of Vesalius, the physician, and his grasp on the mind of Allori, the painter, show the fruitful connections between their fields, evident in Vesalius' use of Titian's models and in Allori's increasing attention to anatomical detail that allowed him to improve his depiction of the nude. The ability of their works to be viewed both as medical and artistic reveals the common ground of observational science: through medical dissection and artistic practice, they both replicated the methods of previous works in their field, performed independent experimentation, and arrived at new conclusions that considerably furthered the understanding of the human body.

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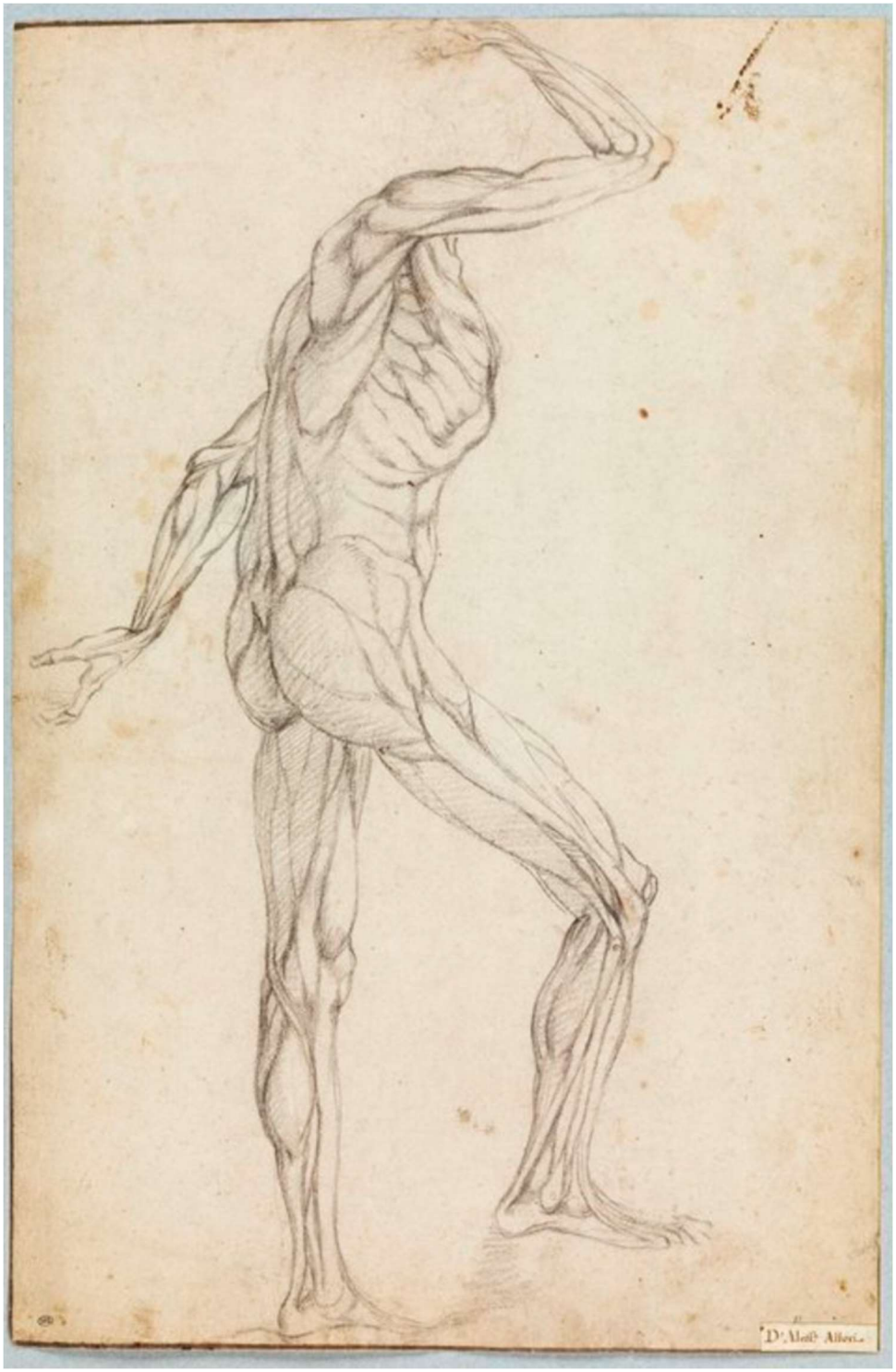

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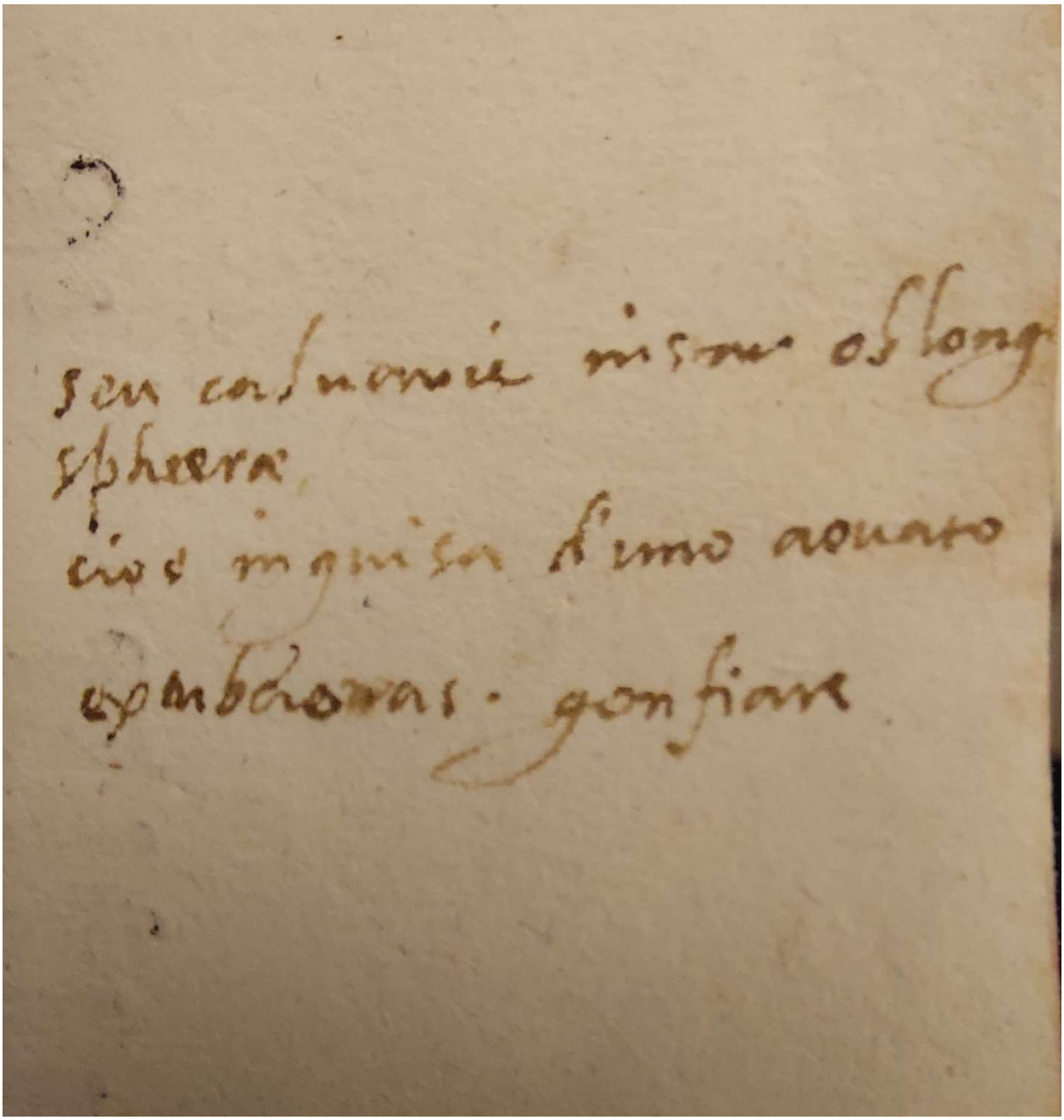

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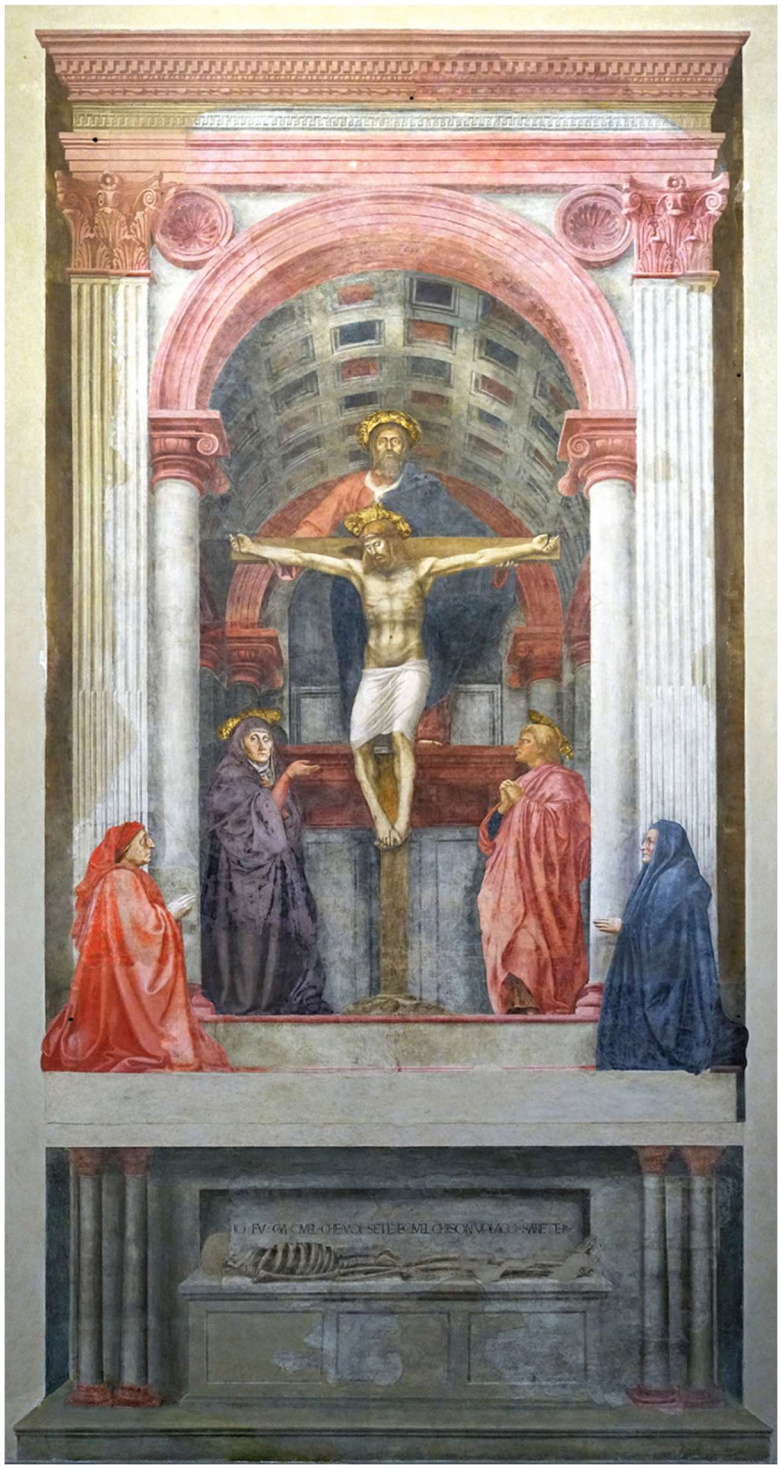

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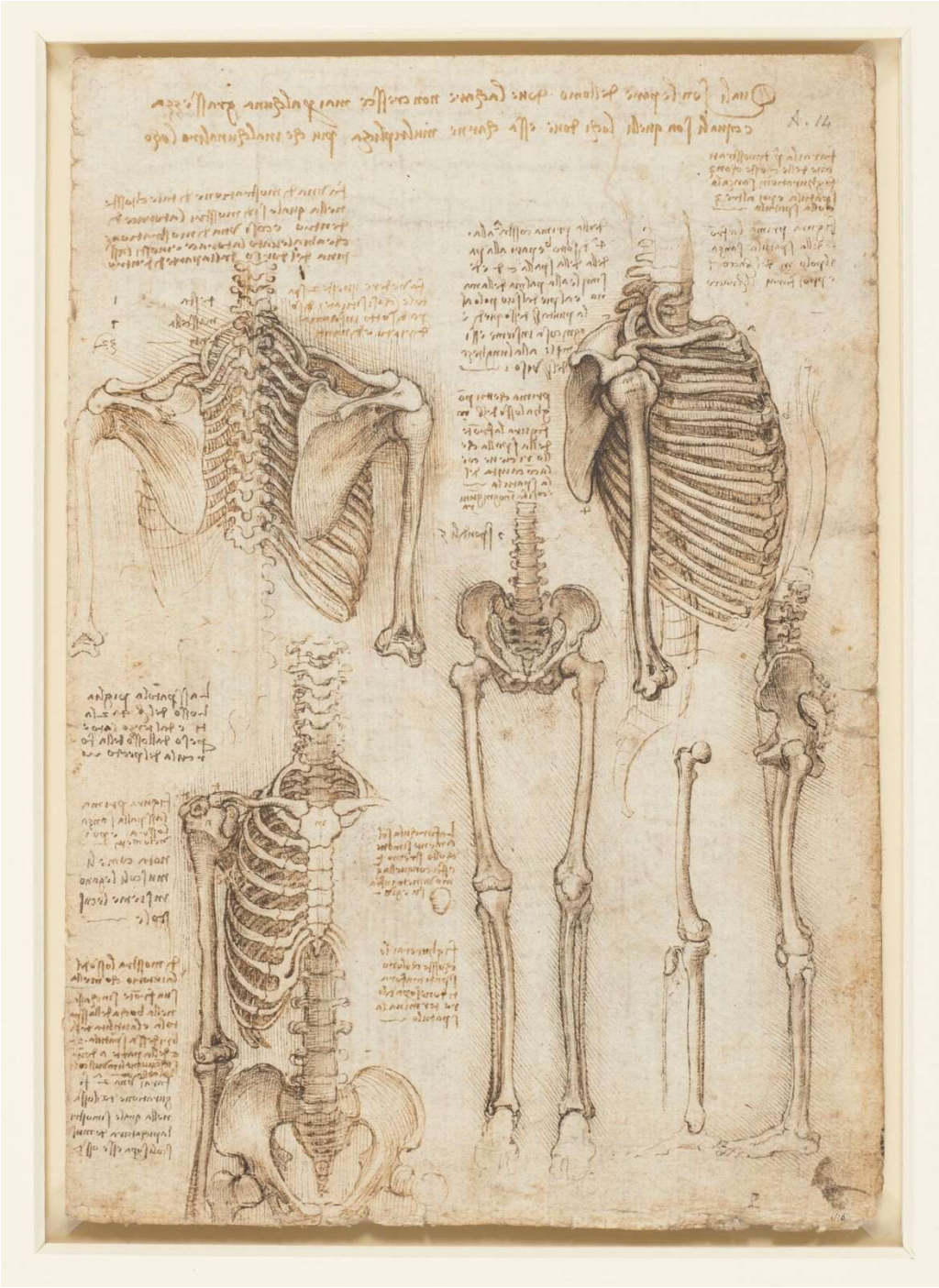

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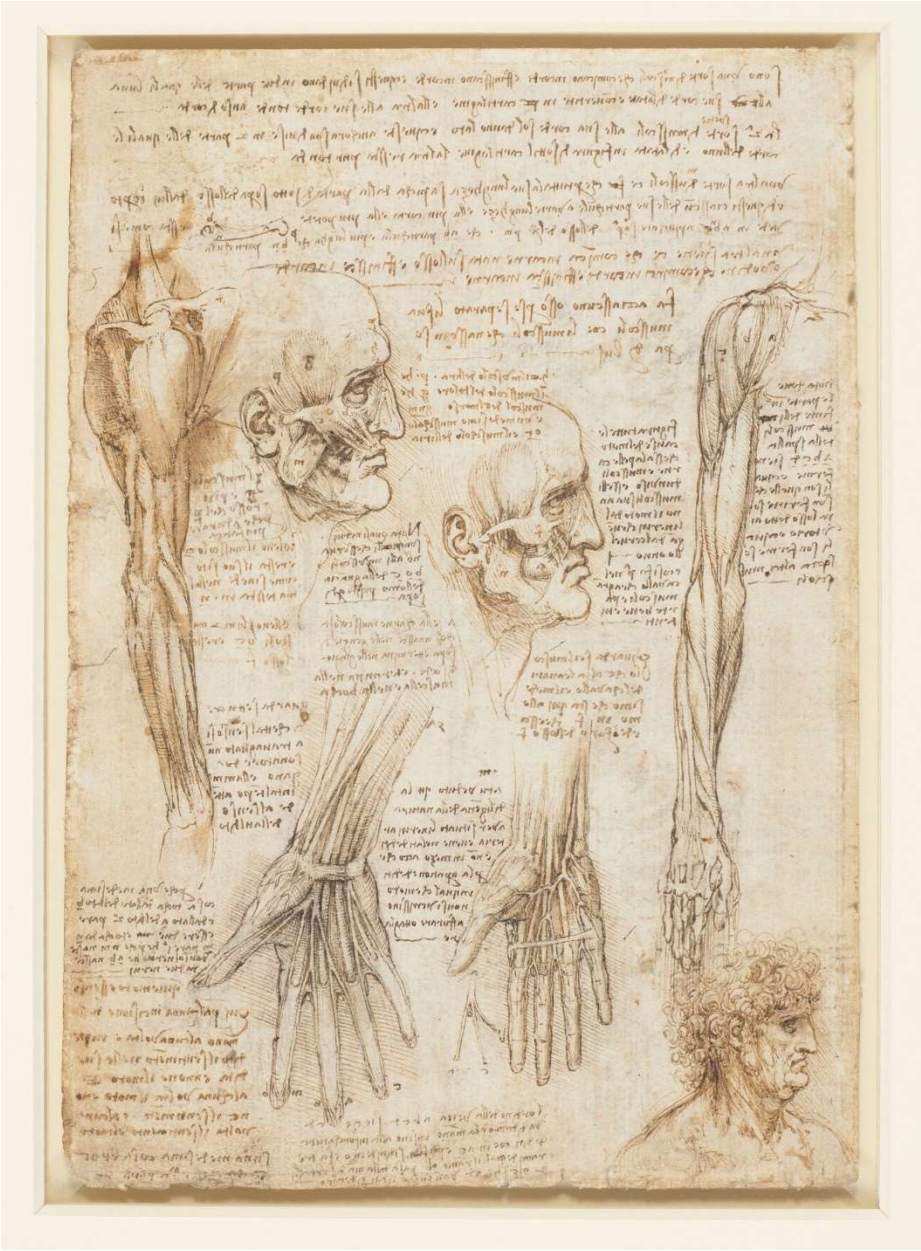

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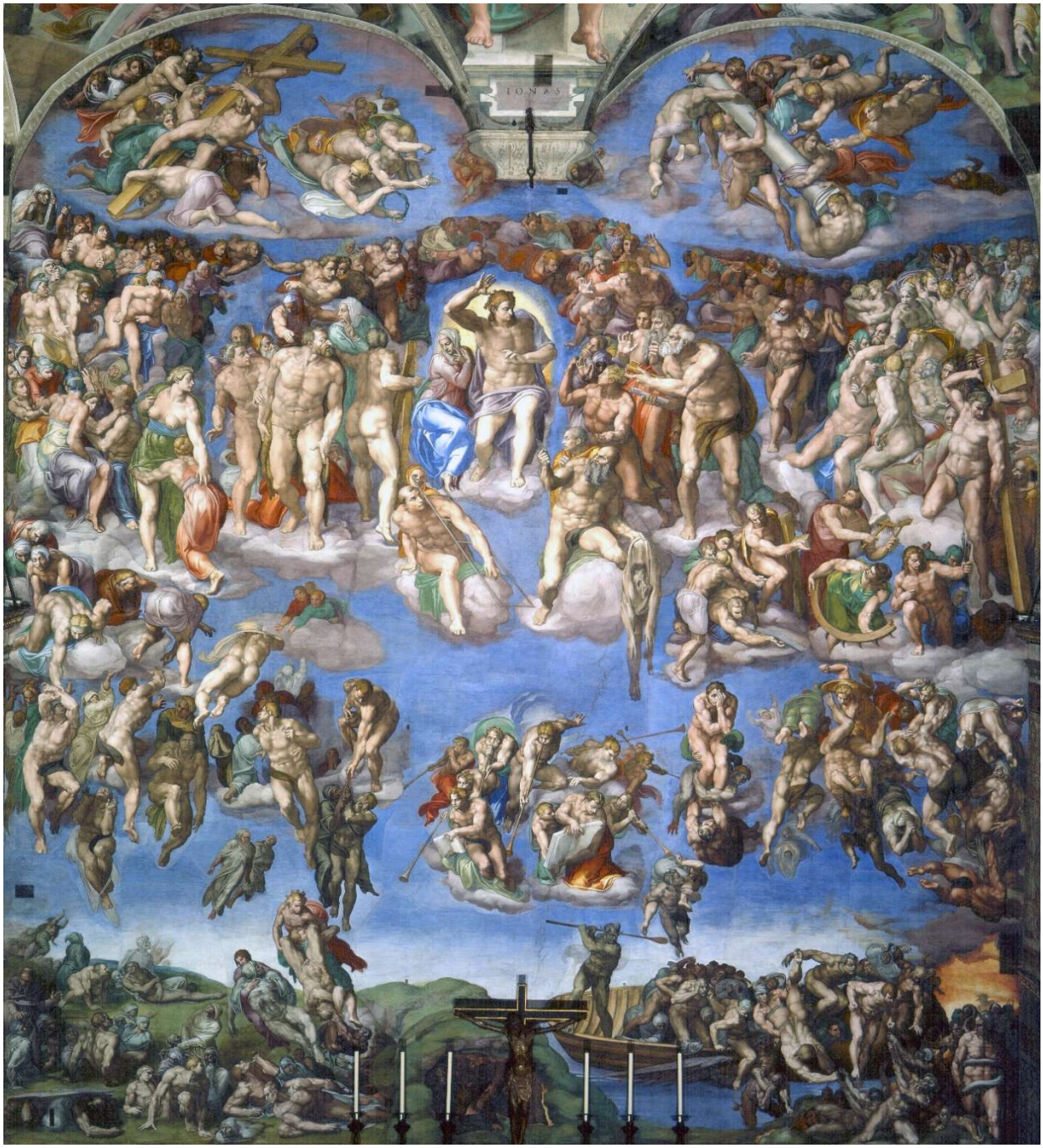

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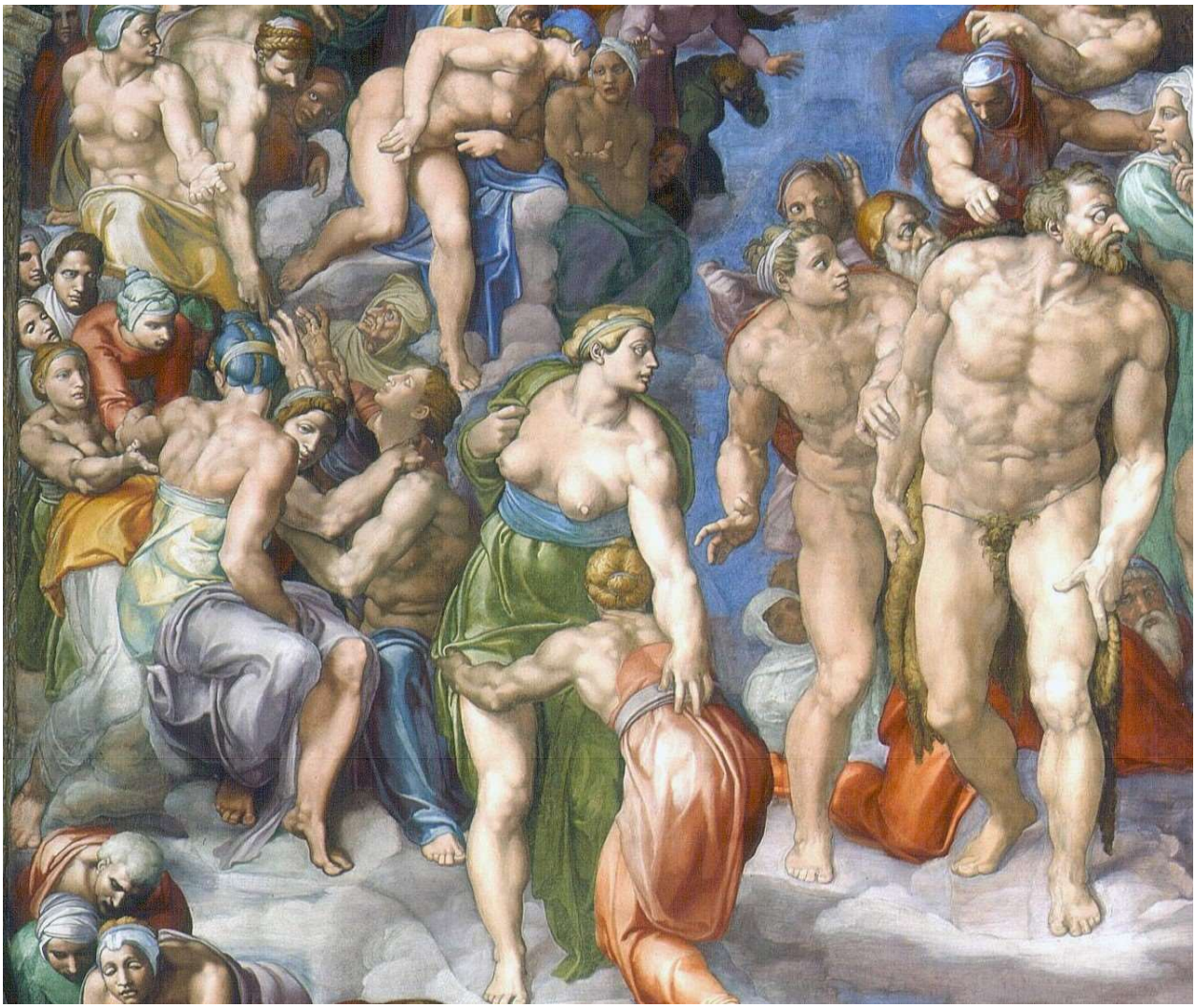

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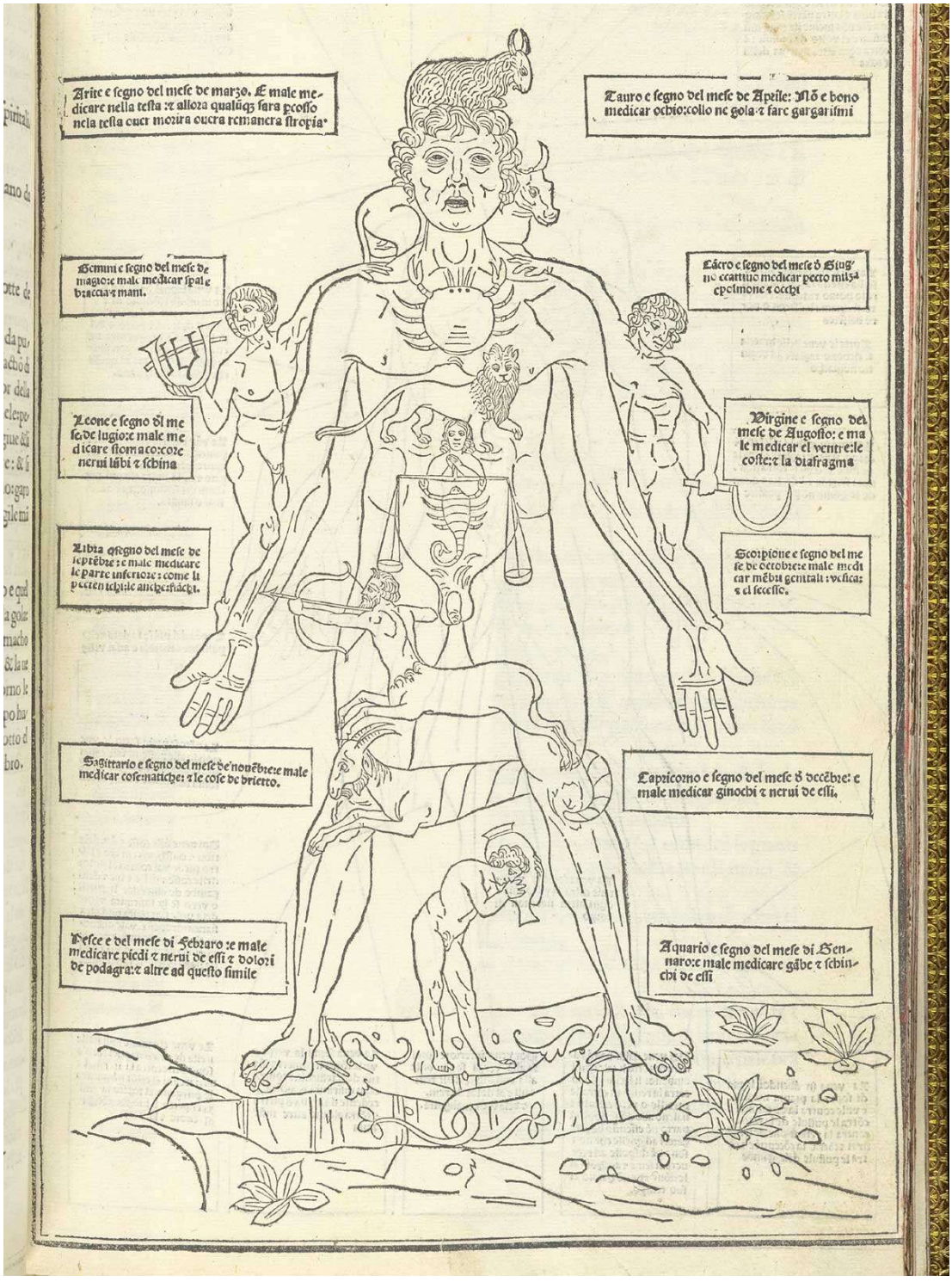

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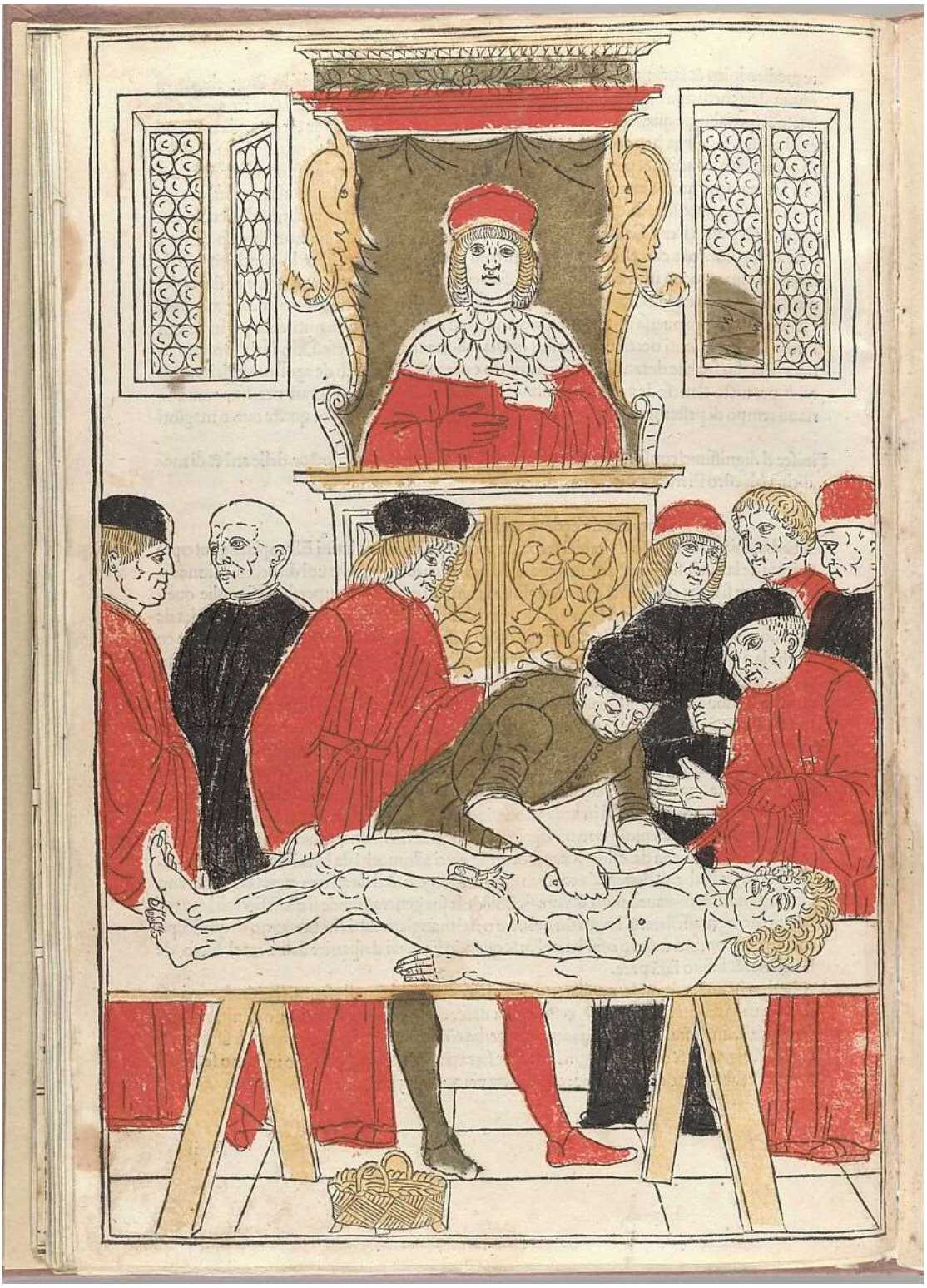

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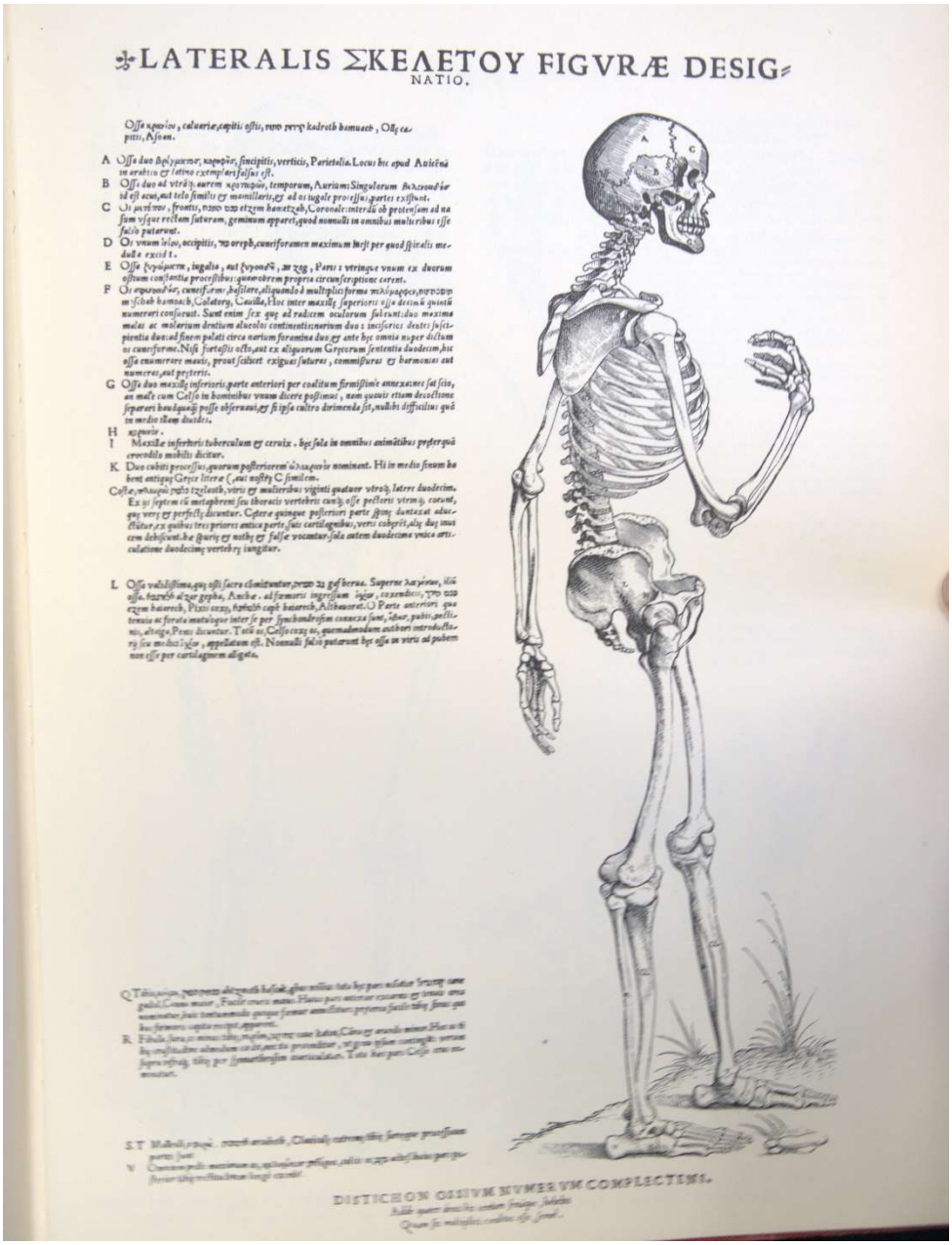

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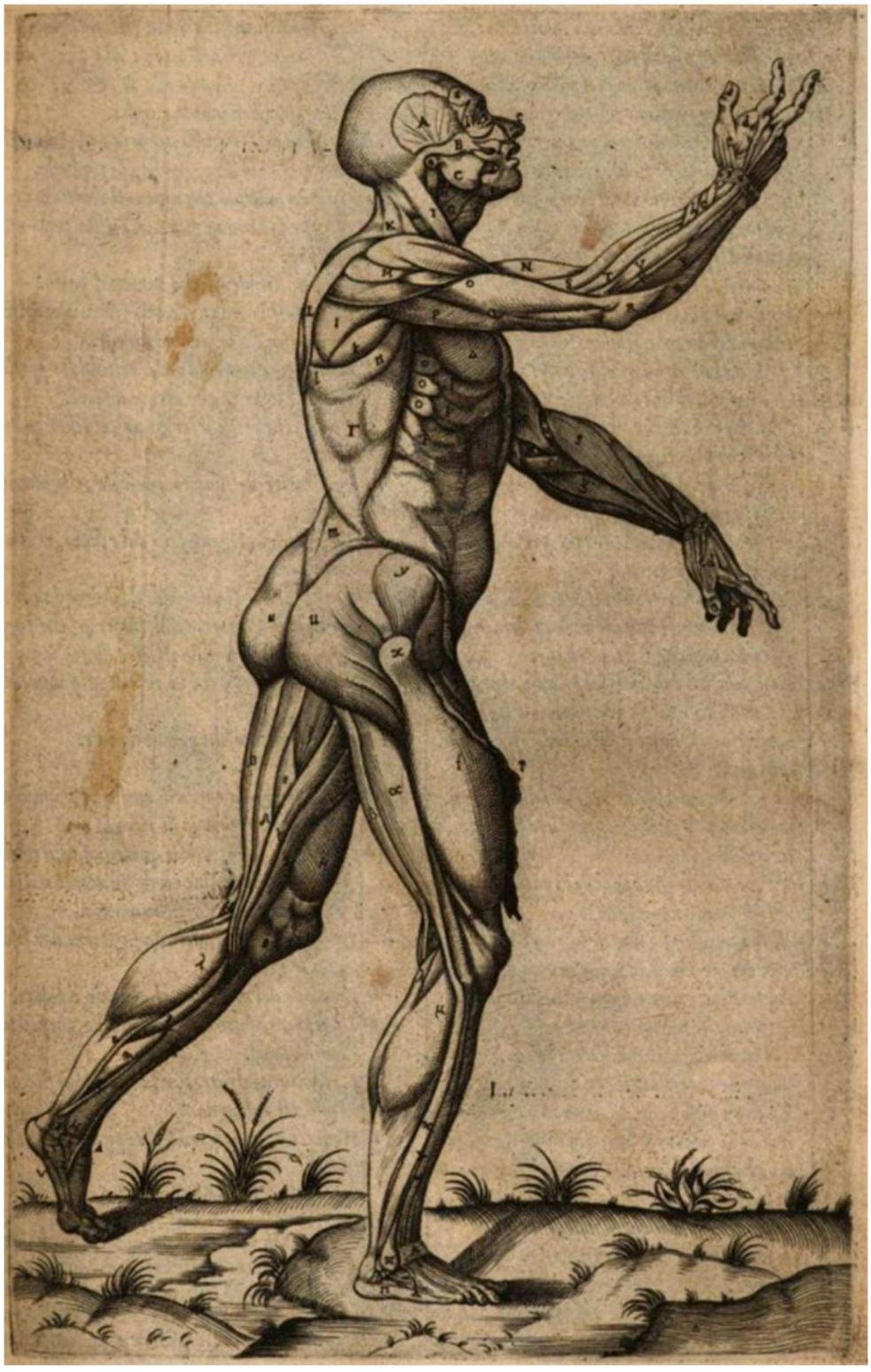

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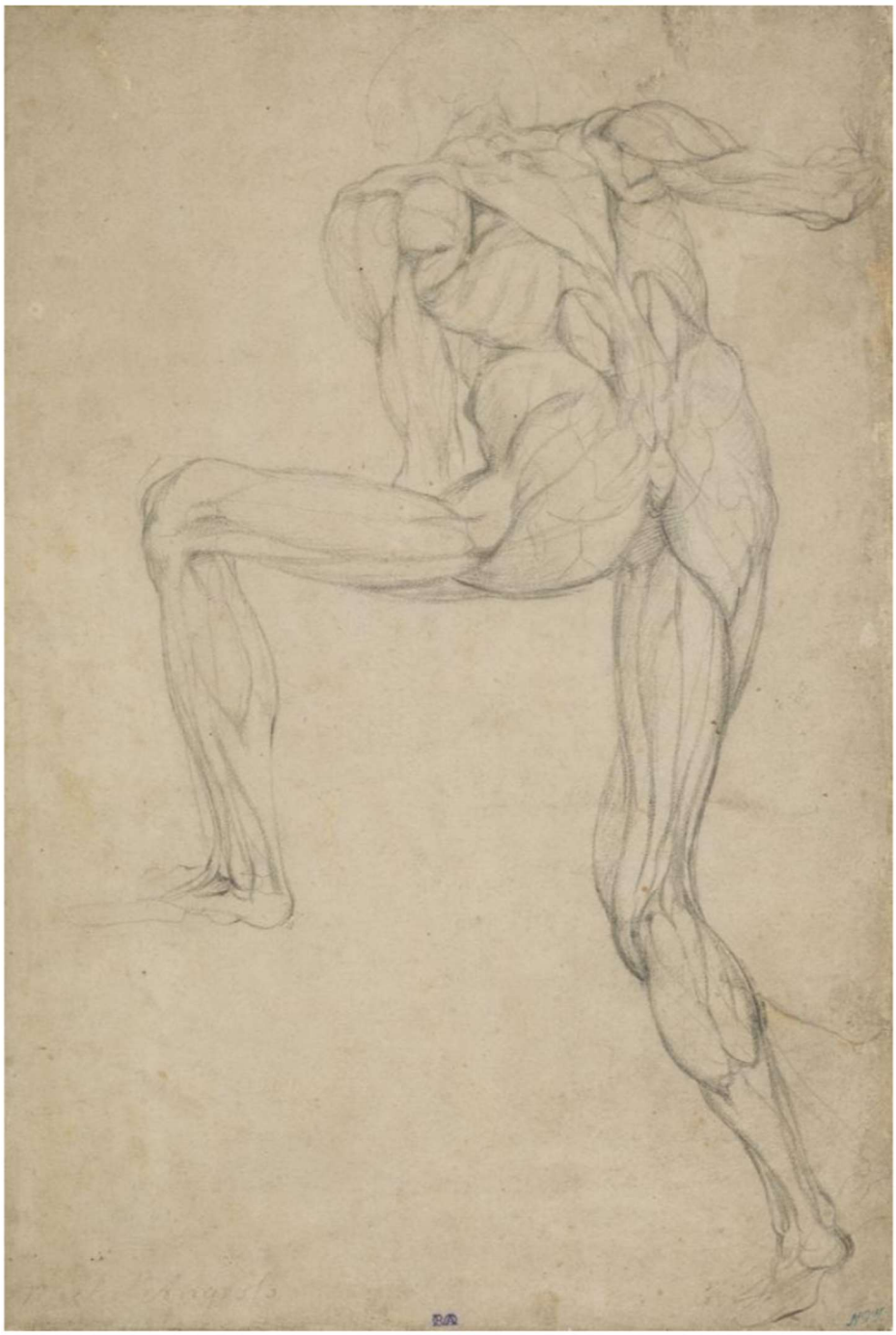

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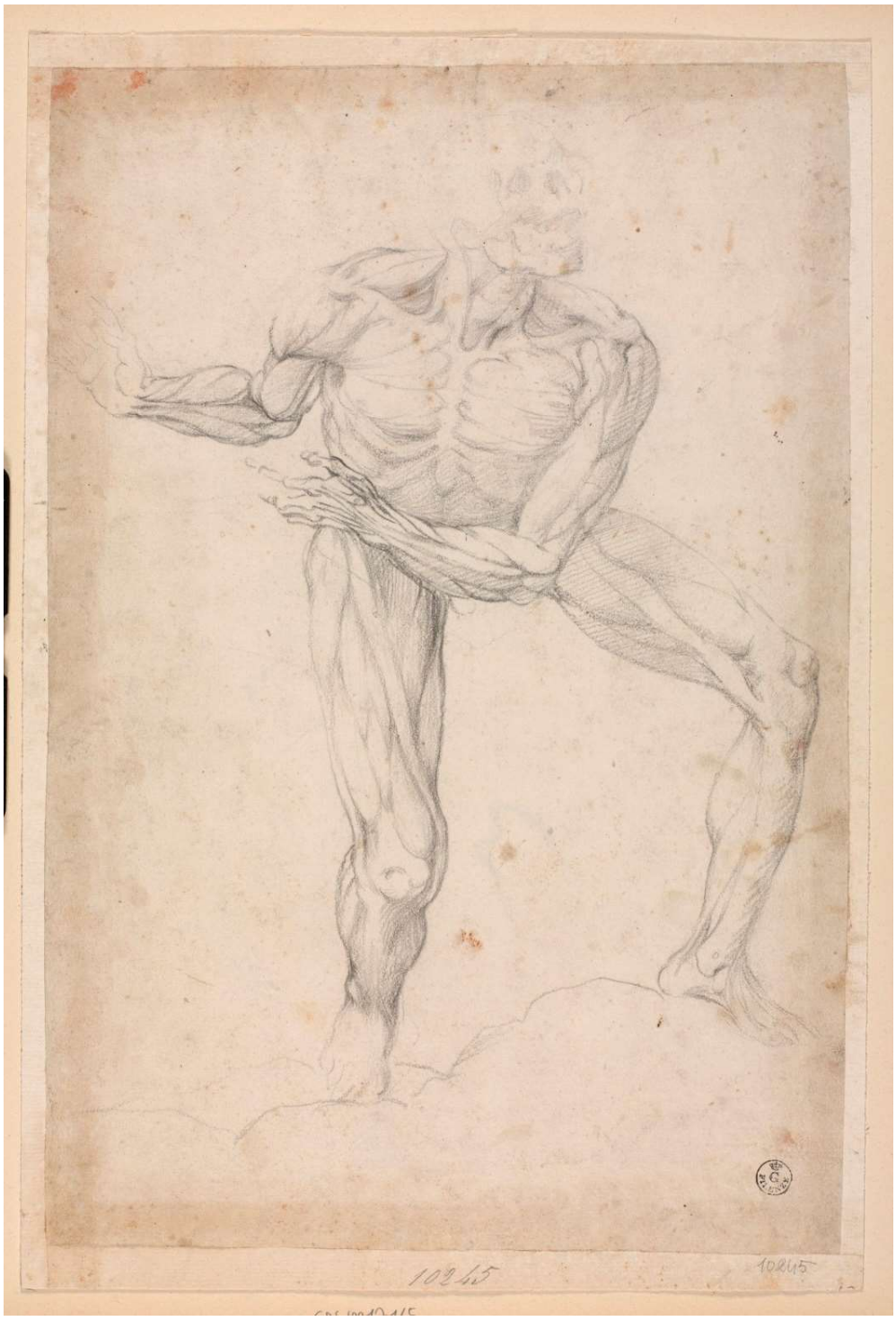

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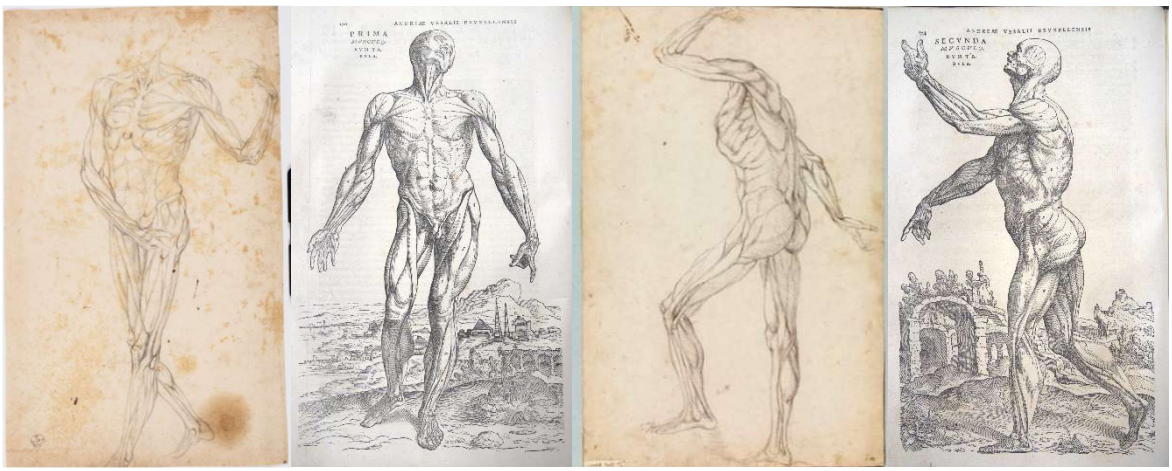

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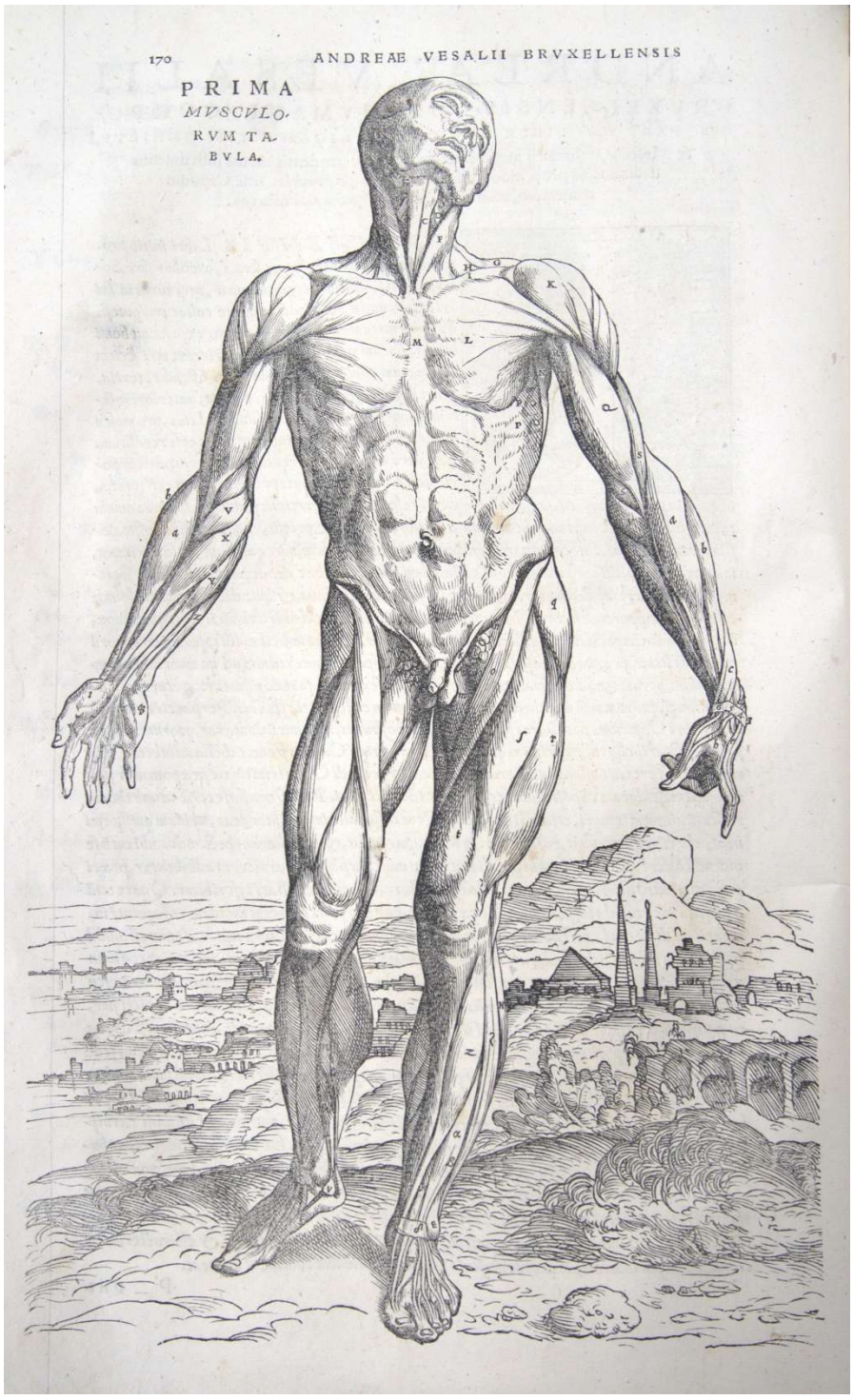

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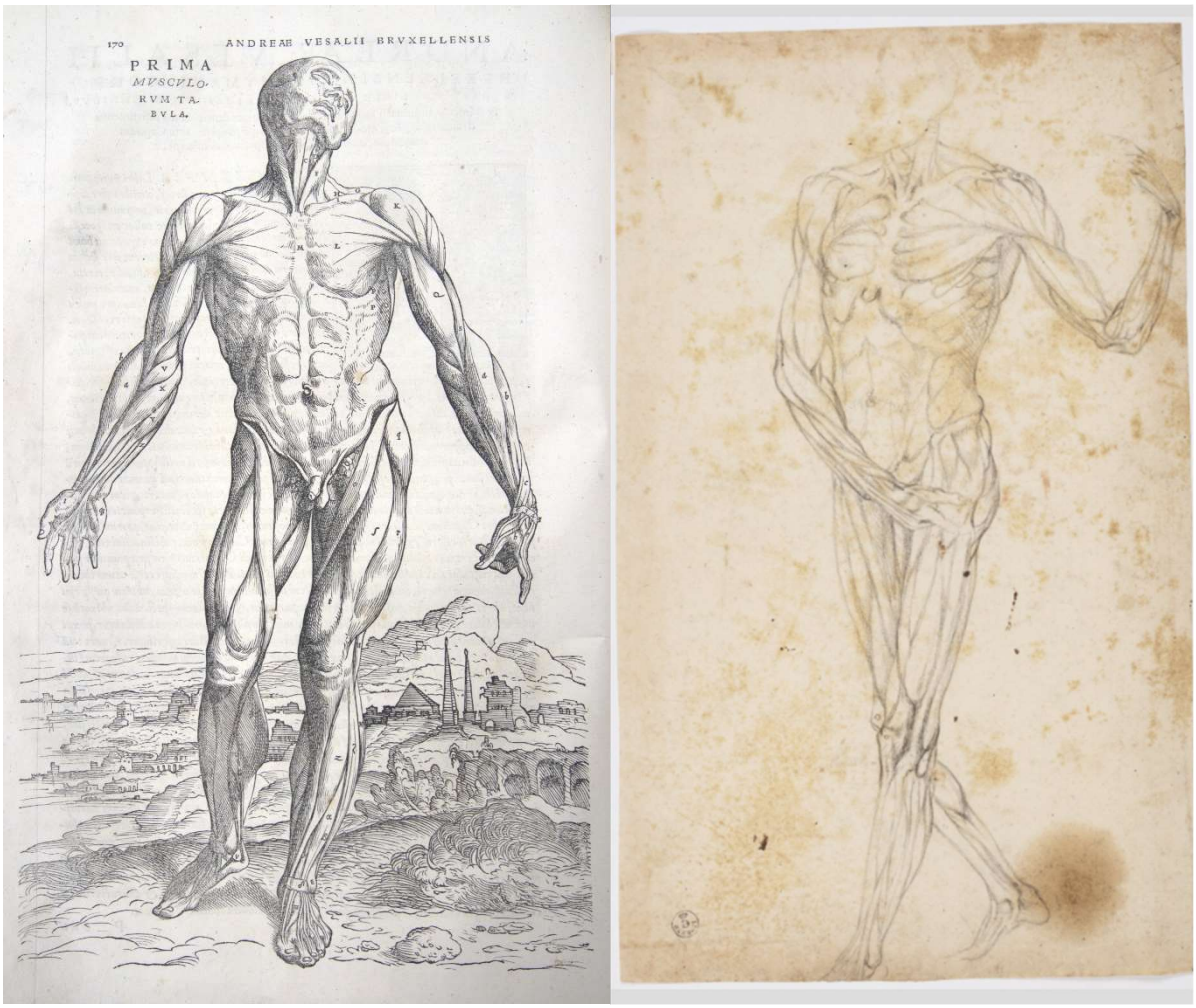

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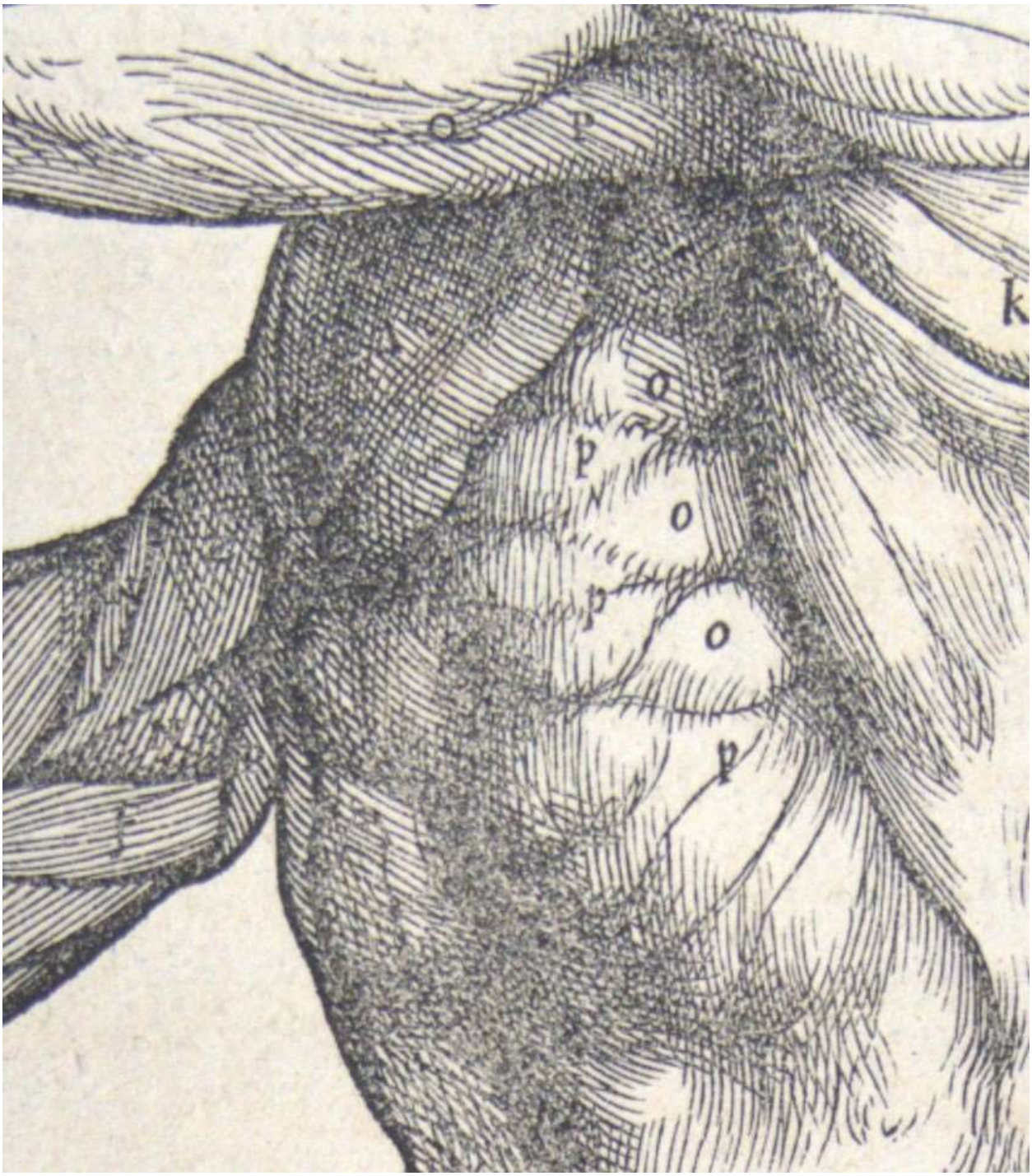

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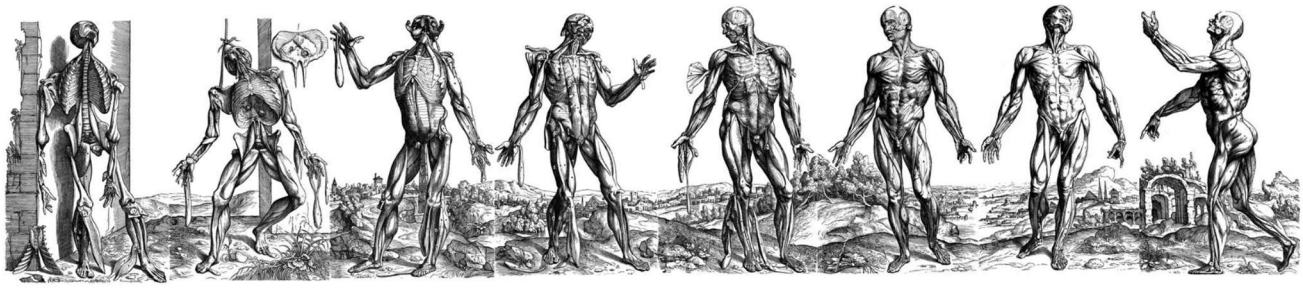

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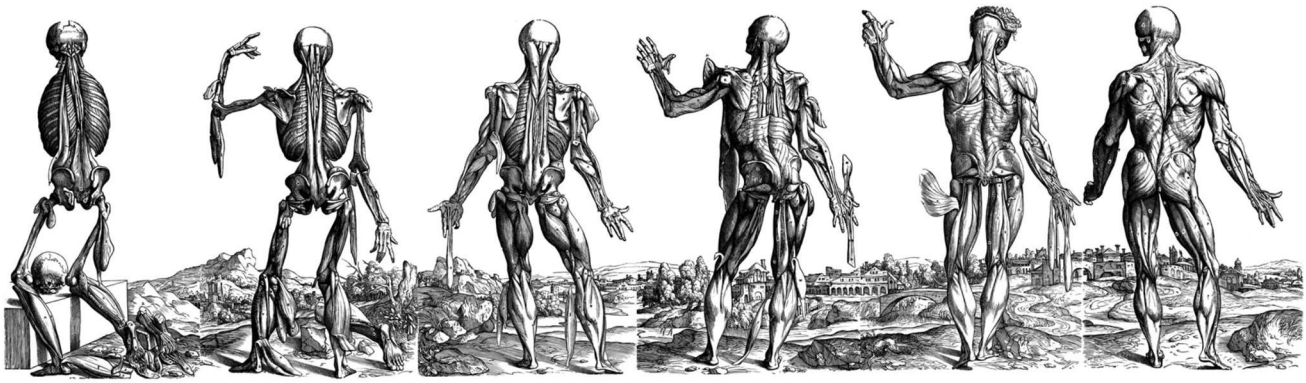

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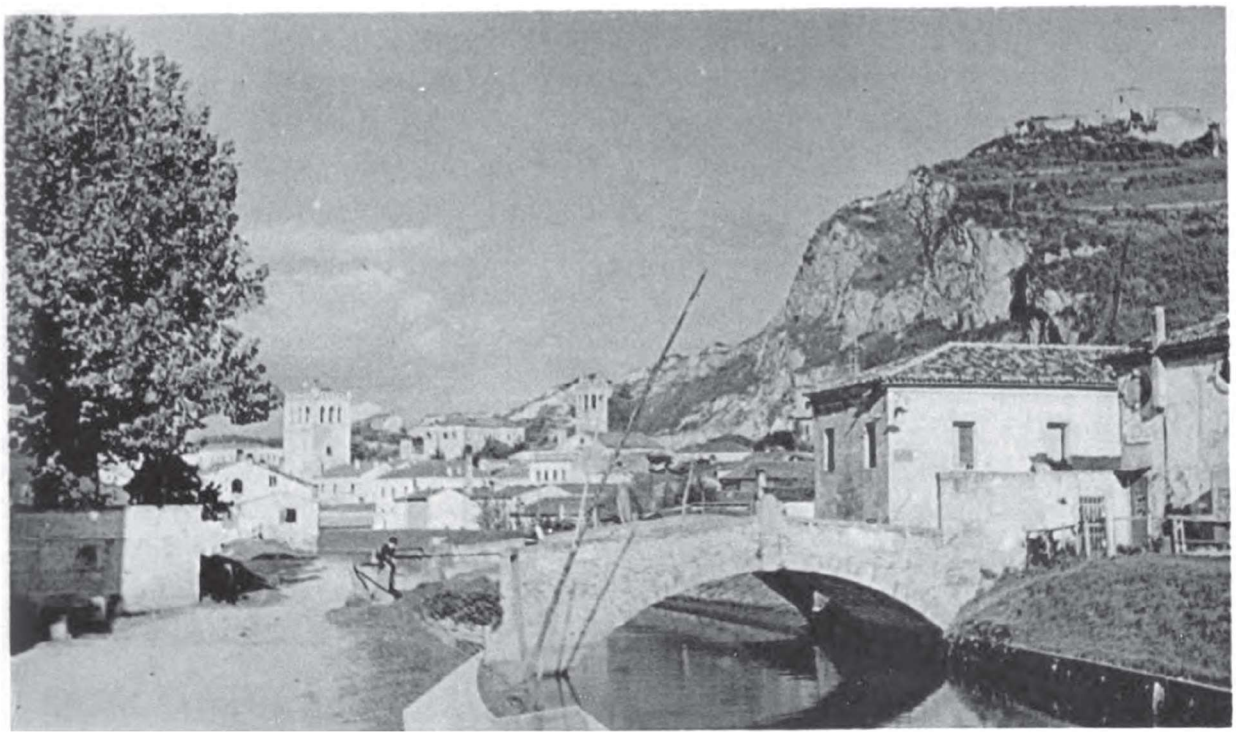

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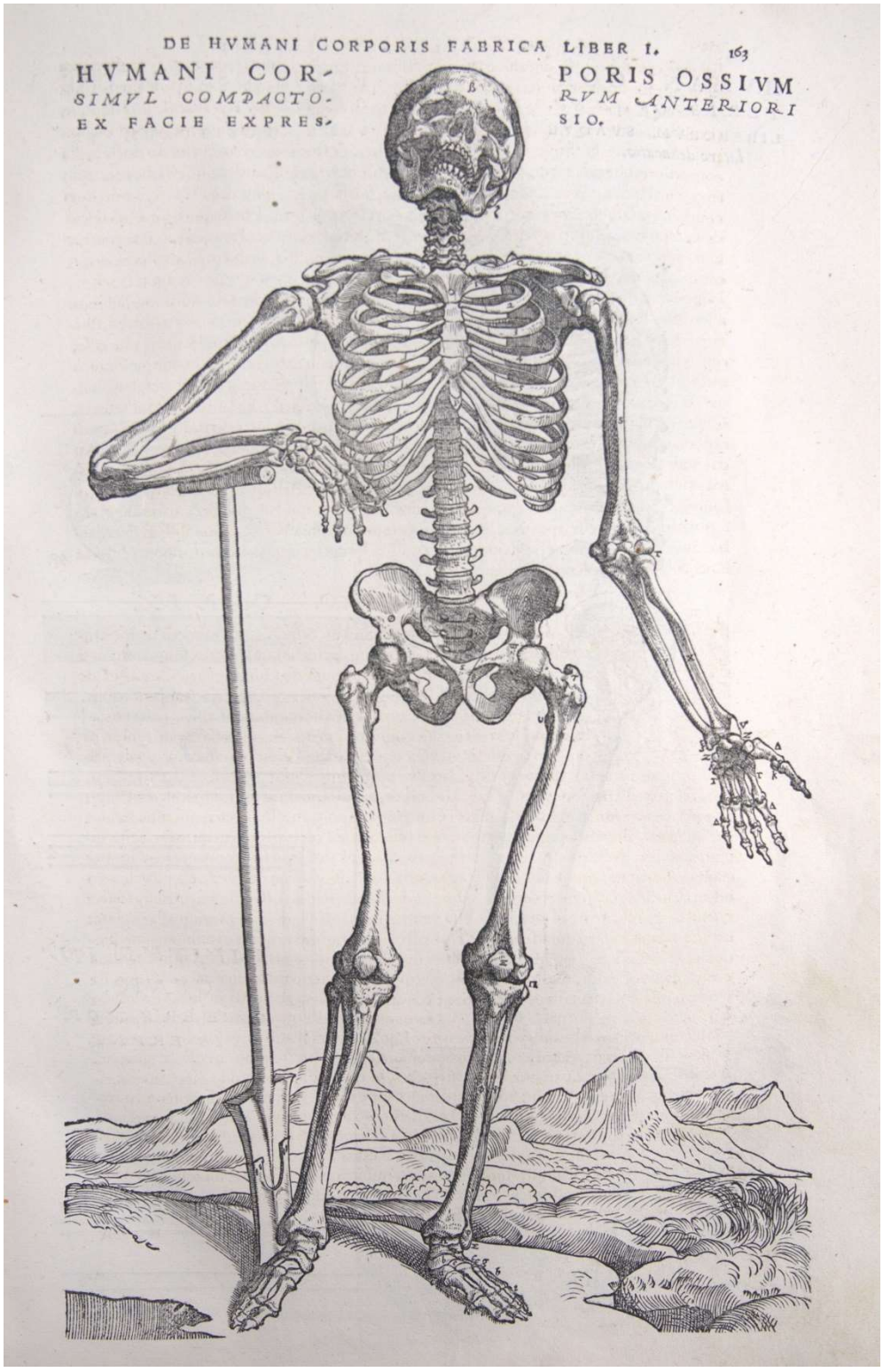

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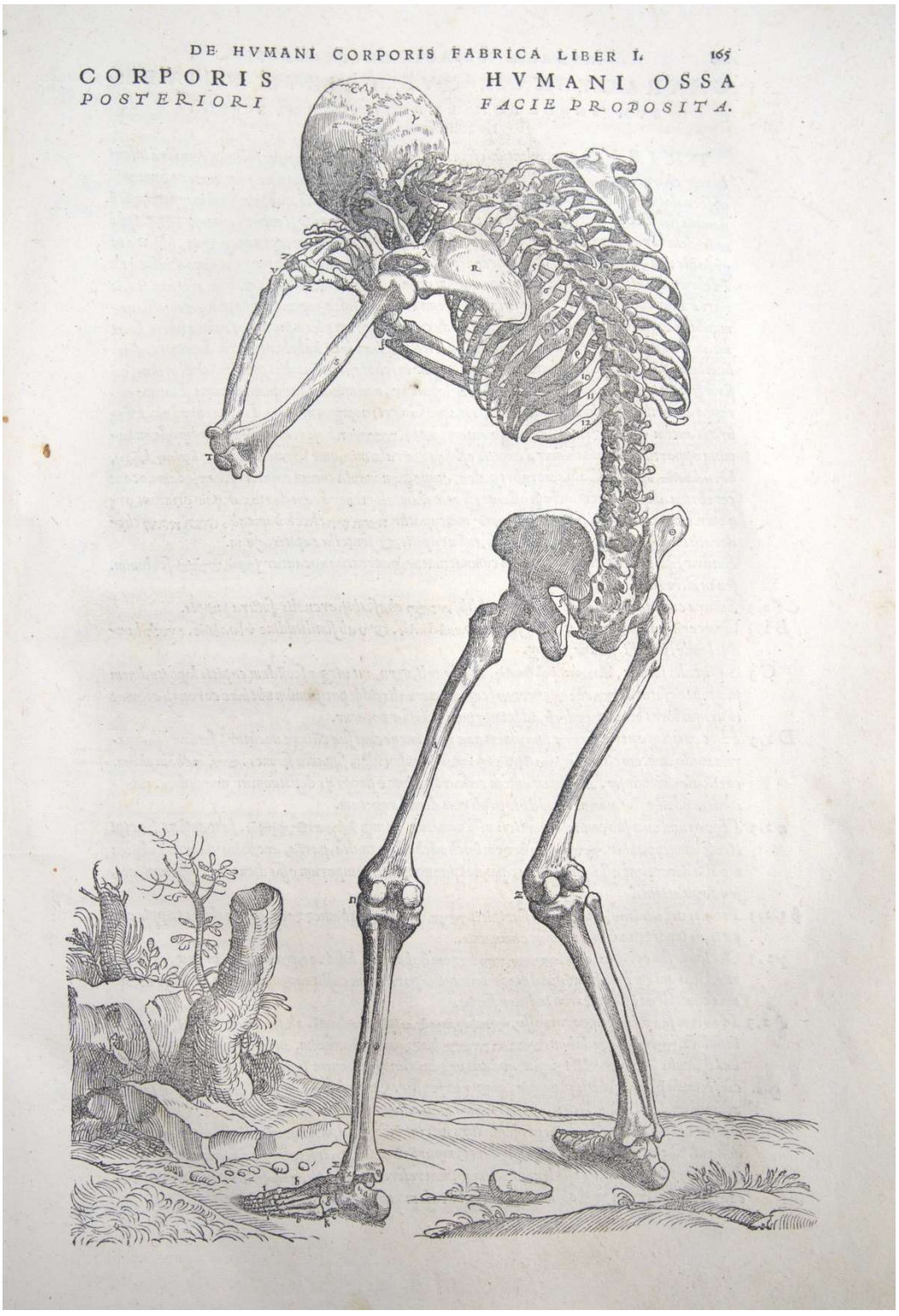

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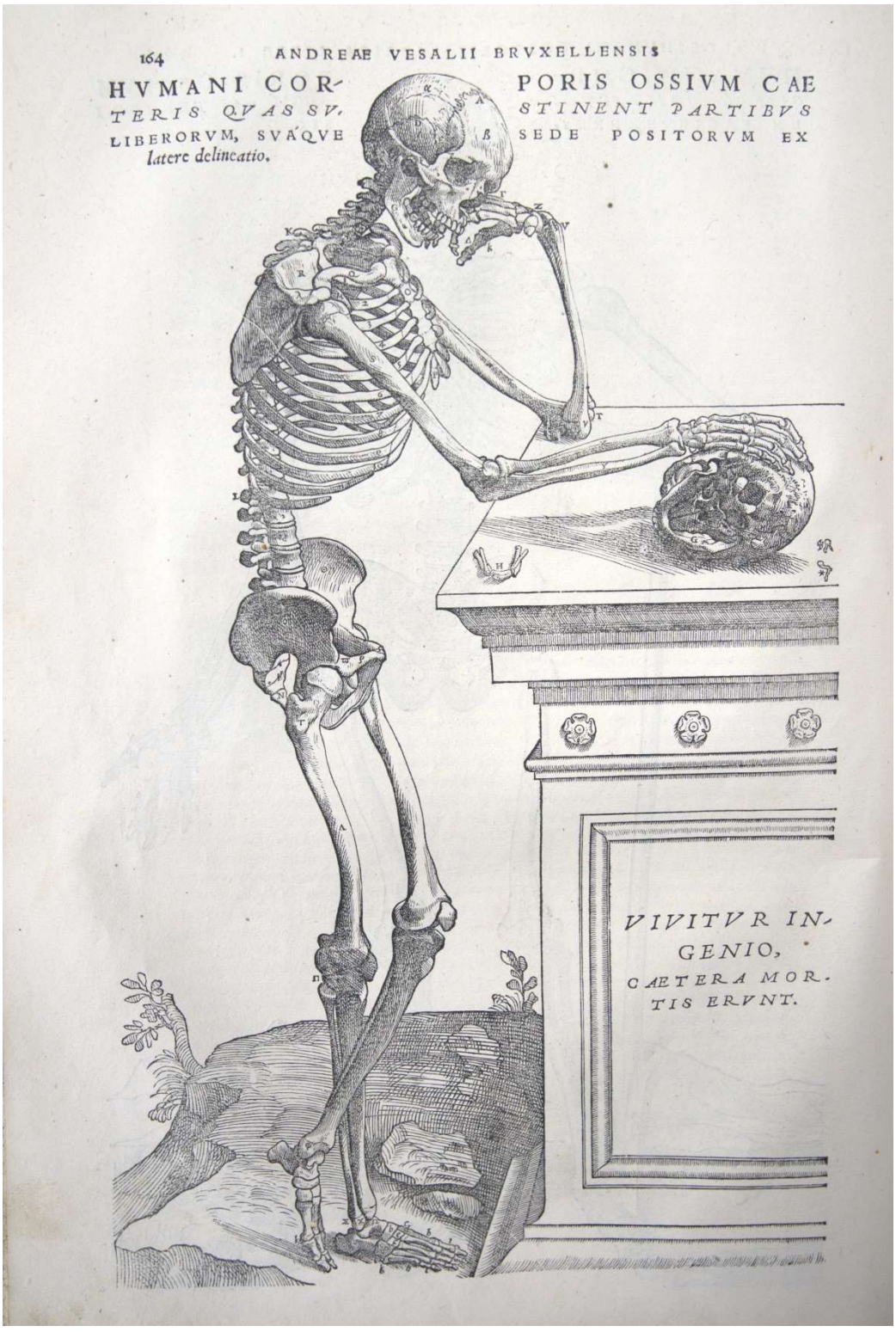

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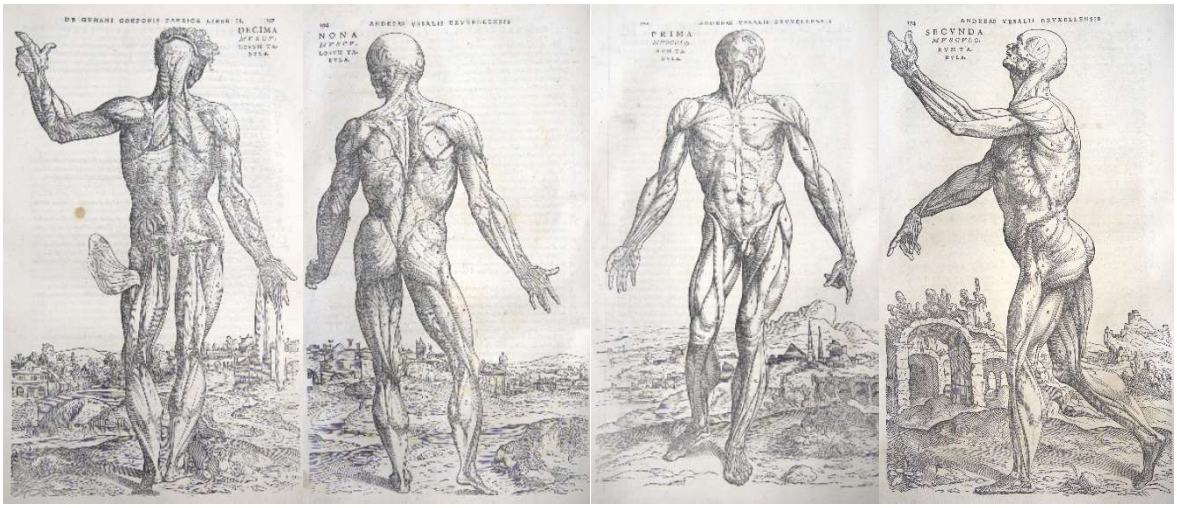

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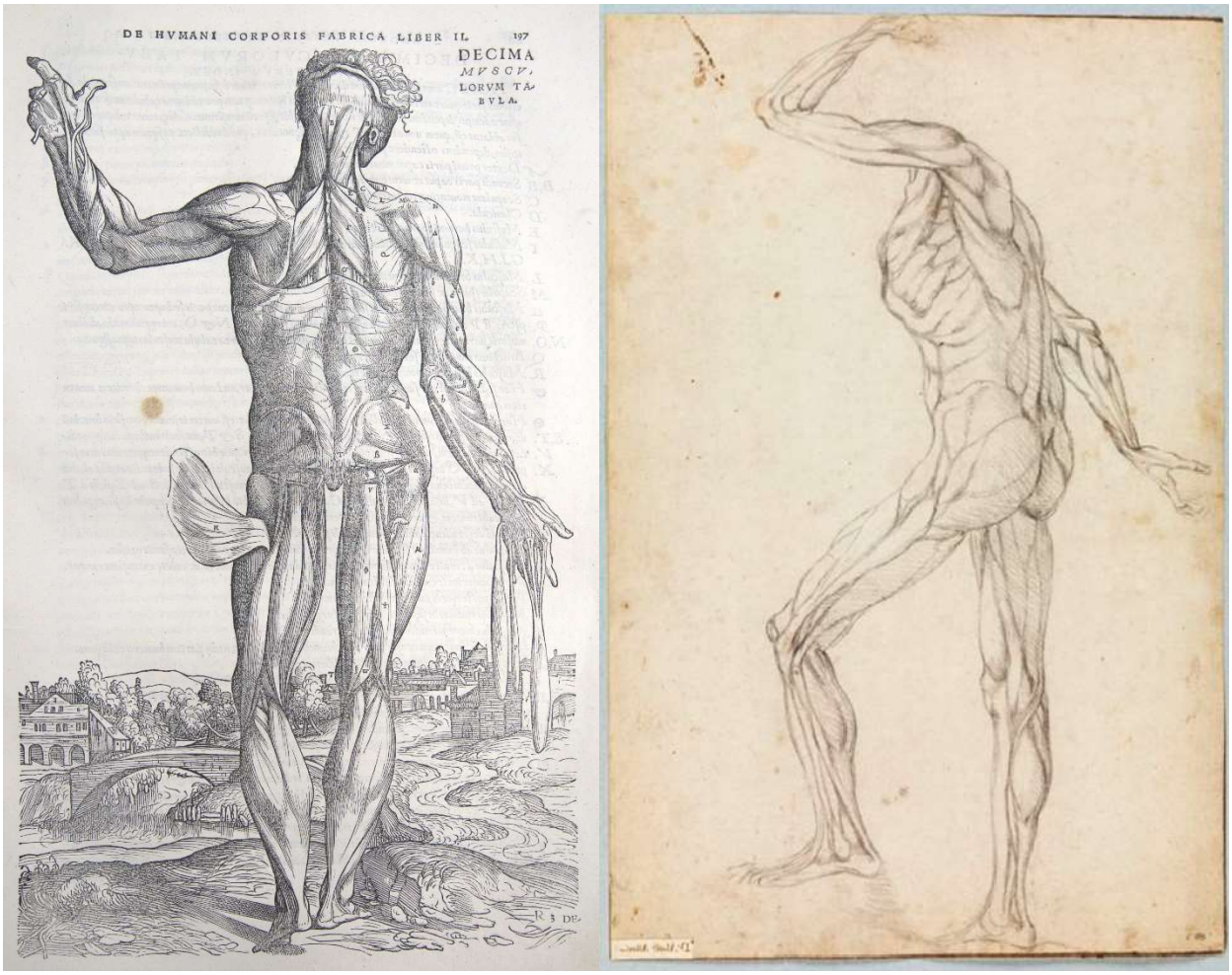

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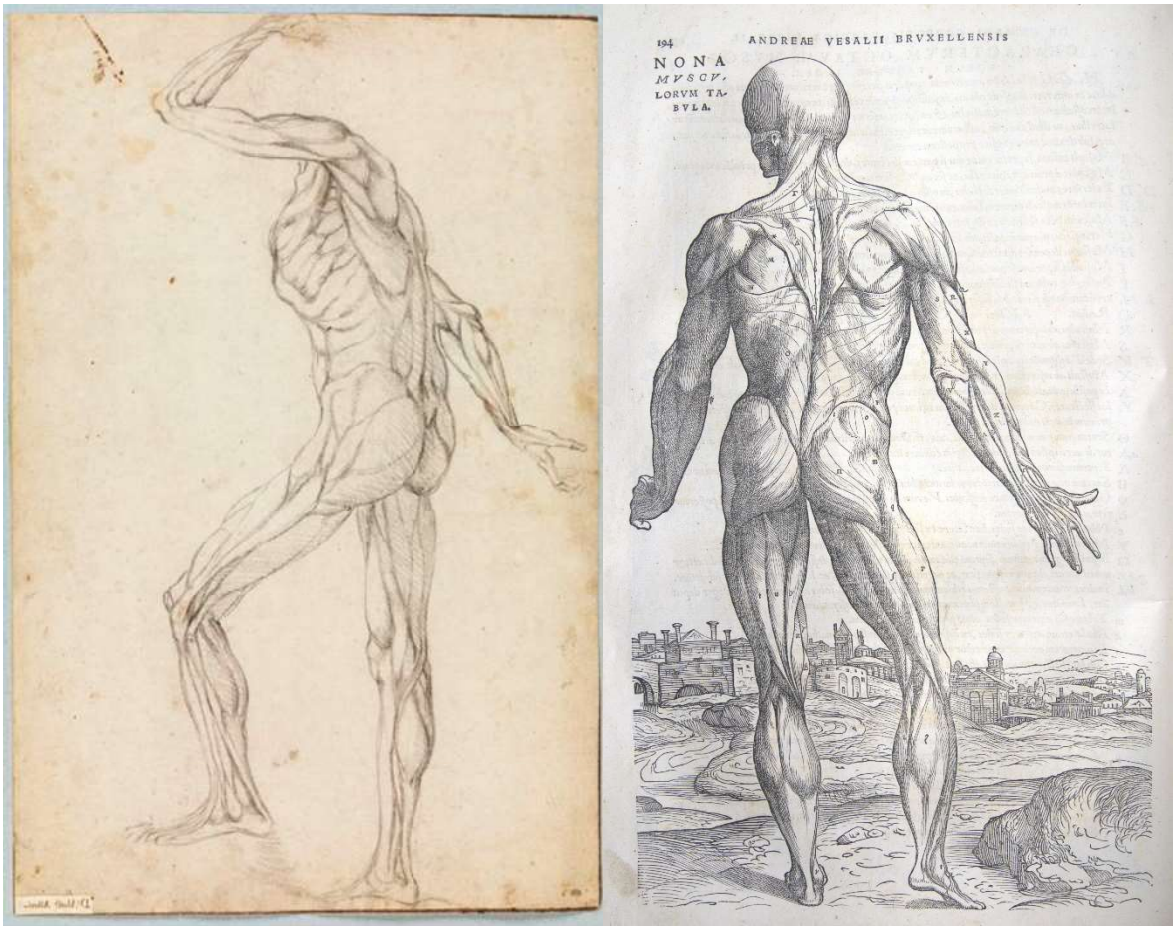

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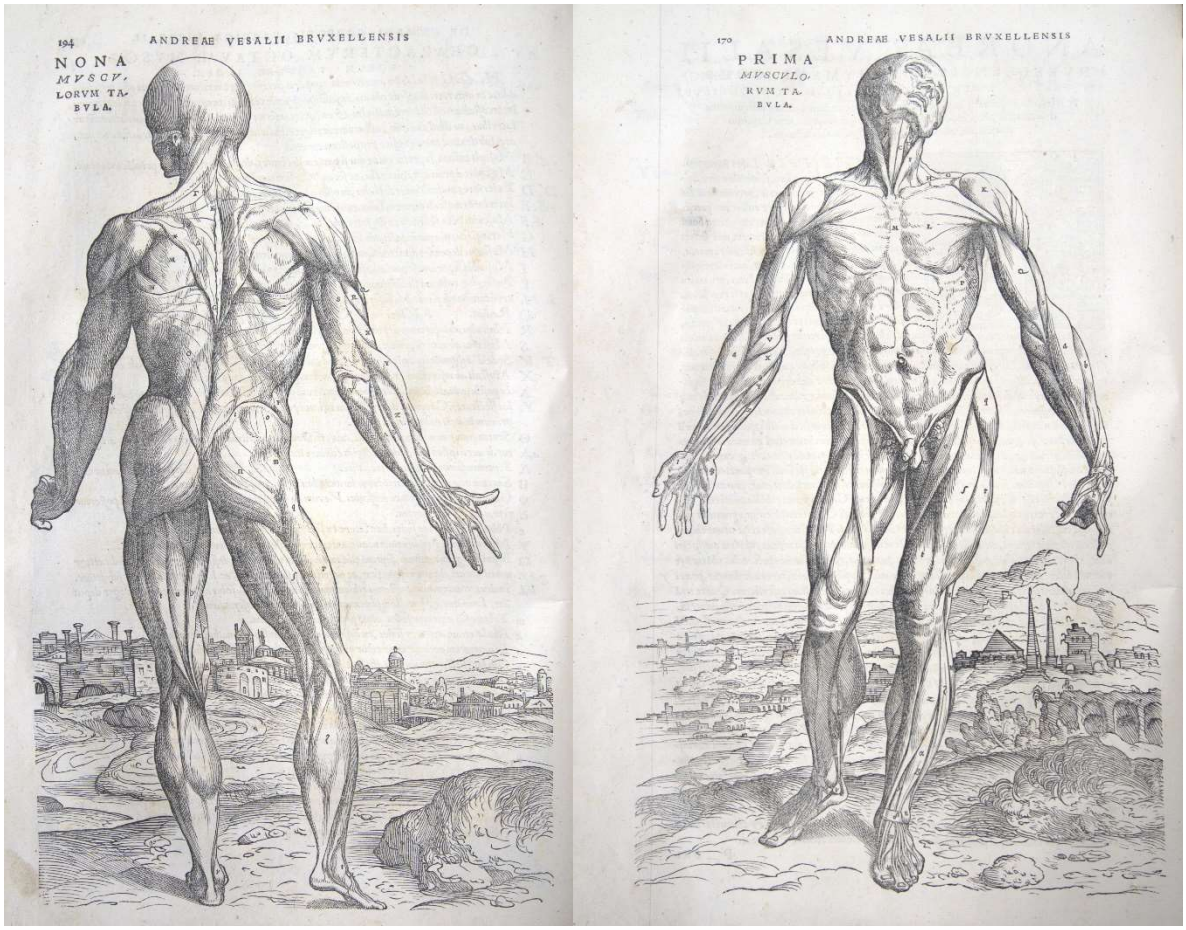

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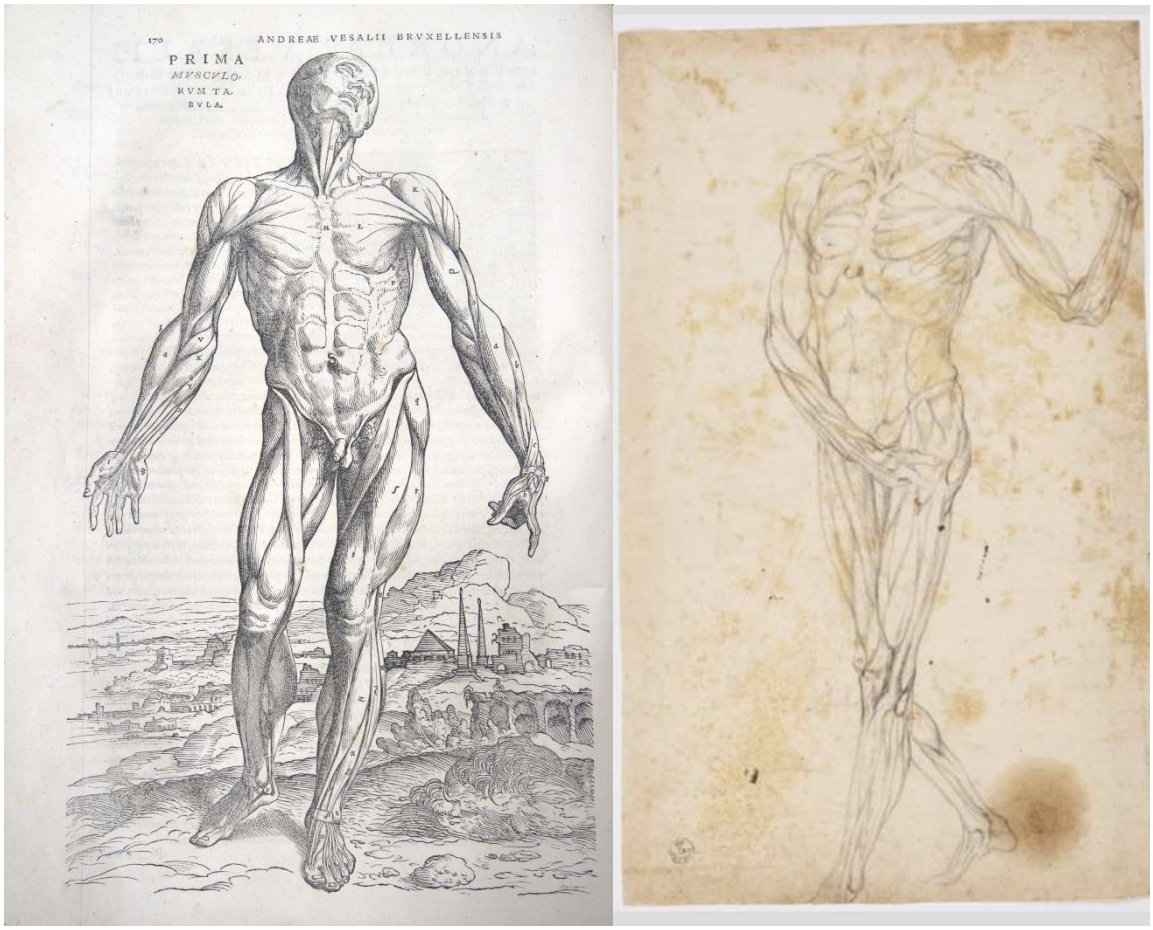

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[+]Photographs courtesy of the Biblioteca Civica Attilio Hortis – Comune di Trieste.

*Photographs courtesy of the Hanna Holborn Grey Special Collections Center at the University of Chicago.

IX. Index B: Bibliography of Primary Sources

Allori, Alessandro, *Il primo libro de' ragionamenti delle regole del disegno d'Allessandro Allori con M. Agnolo Bronzino*. Florence, c. 1580. Barocchi, Paola, *Scritti D'Arte del Cinquecento*, v. 8. Torino: Einaudi, 1979.

Bocchi, Francesco, *Le bellezze della città di Fiorenza.* Florence, 1591. Frangenberg, Thomas, and Robert Williams, eds., trans., *The Beauties of the City of Florence: A Guidebook of 1591*. Turnhout: Brepols, 2006.

Borghini, Raffaello, *Il riposo*. Florence, 1584. Ellis, Jr., Lloyd H., ed., trans., *Il Riposo*. Toronto: University of Toronto Press, 2007.

Danti, Vincenzio, *Il primo libro del trattato delle perfette proporzioni di tutte le cose che imitare e ritrarre si possano con l'arte del disegno*. Florence, 1567. Barocchi, Paula, *Trattati D'Arte del Cinquecento*, v. 1. Bari: Arti Grafiche Gius. Laterza & Figli, 1960.

Geminus, Thomas, *Compendiaso totius Anatomie delineatio.* London, 1545. Bury, M., and A. Grout. "Thomas Geminus' 'Compendiosa Totius Anatomie Delineatio', 1545." Ars anatomica. http://www.arsanatomica.lib.ed.ac.uk/geminus.html.

Valverde de Amusco, Juan, *Historia de la composición del cuerpo humano.* Rome, 1556. Special Collections Research Center, University of Chicago Library.

Vasari, Giorgio. *Le vite de' più eccellenti pittori, scultori e achitetti,* 2nd ed. Florence, 1568. Clark, Kenneth, Ed., Gaston du C. De Vere, Trans., *Lives of the most Eminent Painters, Sculptors and Architects.* 2nd ed. New York: Abrams, 1979.

Vesalius, Andreas, *De Humani Corporis Fabrica Libri Septum*, 1st ed. Basel, 1543. Special Collections Research Center, University of Chicago Library.

———, ———, ———, 2nd ed. ———, 1555. ———, ———.

———, ———, *Epitome*, 2nd ed. ———, 1555. ———, ———.

———, ———, *Tabulae Anatomica Sex*. Basel, 1538. Saunders, J. B. deC. M., and Charles D. O'Malley, *The Illustrations from the Works of Andreas Vesalius of Brussels with Annotations and Translations, A discussion of the Plates and Their Background, Authorship and Influence, and a Biographical Sketch of Vesalius*. Cleveland: The World Publishing Company, 1950.

X. Index C: Bibliography of Secondary Sources

Amerson, Jr., Lawrence Price, The Problem of the Ecorche: A Catalogue Raisonne of Models and Statuettes from the Sixteenth Century and Later Periods. Ann Arbor: Xerox University Microfilms, 1975.

Ameisenowa, Zofia, and Andrzej Ptocki, trans., *The Problem of the Écorché and the Three Anatomical Models in the Jagiellonian Library*. Poland: Zaklad Nardowy Imienia Ossolińskich Wydawnicto Polkiej Akademii Nauk, 1963.

Ames-Lewis, Francis, and Paul Joannides, eds., *Reactions to the Master: Michelangelo's Effect on Art and Artists in the Sixteenth Century.* Aldershot: Ashgate, 2003.

Arráez-Aybar, Luis-Alfonso, Concepción Reblet, and José Luis Bueno-López, "Juan Valverde de Amusco: Pioneering the Transfer of Post-Vesalian Anatomy," from *Anatomia*, Vol. 2, No. 4, pp. 450-471. Basel: MDPI, 2023.

Bambach, Carmen, "Anatomy in the Renaissance," from *Heilbrunn Timeline of Art History*. New York: Department of Drawings and Prints, The Metropolitan Museum of Art, 2002.

Barzman, Karen-edis, *The Florentine Academy and the Early Modern State: The Discipline of Disegno*. Cambridge: Cambridge University Press, 2000.

Brown, G. Baldwin, "Vasari on Technique," from *The Burlington Magazine for Connoisseurs*, Vol. 10, No. 46, pp. 252 – 255. London: Burlington Magazine, 1907.

Camesasca, Ettore, *Tutta l'opera del Cellini*. Milan: Rizzoli Editore, 1955.

Canalis, Rinaldo Fernando, Massimo Ciavolella, eds., and Monique Kornell, *Andreas Vesalius and the Fabrica in the Age of Printing: Art, Anatomy, and Printing in the Italian Renaissance.* Turnhout: Brepols, 2018.

Ciardi, Roberto Paolo, Lucia Tongiorgi Tomasi*, Immagini anatomiche e naturalistiche nei disegni degli Uffizi, Secc. XVI e XVII.* Florence: Olschki, 1984.

Clark, Harry, "Foiling the Pirates: The Preparation and Publication of Andreas Vesalius's De HUMANI CORPORIS FABRICA," from *The Library Quarterly: Information, Community Policy*, Vol. 51, No. 3, pp. 301-311. Chicago: The University of Chicago Press, 1981.

Costagna, Philippe, *Pontormo*. Milan: Electa, 1994.

Cushing, Harvey, *A bio-bibliography of Andreas Vesalius*. New Haven: Yale University Historical Library, 1943.

Dittmar, Jeremiah, "Book Prices in Early Modern Europe: An Economic Perspective," from *Buying and Selling: The Business of Books in Early Modern Europe*, Ch. 4. Leiden: Brill, 2019.

Eknoyan, Garabed, "Michelangelo: Art anatomy, and the kidney," from *Kidney International*, Vol. 57, pp. 1190 – 1201. Paris: International Society of Nephrology, 2000.

"Etude d'un Écorché, de Trois Quarts, de Dos." Paris: Musée du Louvre, 2022. https://collections.louvre.fr/en/ark:/53355/cl020000012.

Frangenberg, Thomas, and Robert Williams, eds., trans., *The Beauties of the City of Florence: A Guidebook of 1591*. Turnhout: Brepols, 2006.

Fulton, John F., Ernst A. Cassirer, Edward C. Streeter, Carl P. Rollins, and Arturo Castiglioni, *Celebration of the Four Hundredth Anniversary of the De Humani Corporis Fabrica of Andreas Vesalius: The Historical Library, Yale University School of Medicine, 30 October, 1943*. New Haven: Yale Journal of Biology and Medicine, 1943.

Garrison, Daniel H., "Translator's Introduction," from *An Annotated Translation of the 1543 and 1555 Editions of "De Humani Corporis Fabrica Libri Septum"*, pp. LXVI – LXXI. Basel: Karger, 2014.

Gentilini, G., "Medici e anatomisti," from *Firenze e la Toscana dei Medici nell'Europa del Cinquecento: La corte il mare i mercanti La rinascita della Scienza Editoria e Società Astrologia, magia e alchimia*, pp. 171 -- 183. Florence: Edizioni Medicee, 1980.

Ghosh, Sanjib Kumar, "Human cadaveric dissection: a historical account from ancient Greece to the modern era," from *Anatomy & Cell Biology*, Vol. 48, No. 3, pp. 153 – 169. Gwangju: Korean Association of Anatomists, 2015.

Giovannoni, Simona Lecchini, *Mostra di disegni di Alessandro Allori (Firenze 1535 – 1607).* Florence: Leo S. Olschki Editore, 1970.

———, *Alessandro Allori*. Florence: Umberto Allemandi & C., 1991.

Grudin, Robert, "Humanism," from *Britannica Academic*. Chicago: Encyclopaedia Britannica, 2020. academic.eb.com/levels/collegiate/article/humanism/

Hast, Malcolm H., "Anatomist's Introduction," from *An Annotated Translation of the 1543 and 1555 Editions of "De Humani Corporis Fabrica Libri Septum"*, p. LXXIV. Basel: Karger, 2014.

Hirst, Michael, *Michelangelo and his First Biographers*. London: The British Academy, 1997.

Humfrey, Peter, *Titian: The Complete Paintings*. New York: Ludion, 2007.

Johns, Adrian, *Piracy: The Intellectual Property Wars from Gutenberg to Gates.* Chicago: University of Chicago Press, 2010.

Clark, Kenneth, Ed., Gaston du C. De Vere, Trans., *Lives of the most Eminent Painters, Sculptors and Architects.* 2nd ed. New York: Abrams, 1979.

Kornell, Monique, Thisbe Gensler, Naoko Takahatake, and Erin Travers, *Flesh and Bones: The Art of Anatomy*. Los Angeles: Getty Research Intitute, 2022.

Lambert, Samuel W., Willy Wiegand, and William M. Ivins, Jr, *Three Vesalian Essays to Accompany the* Icones Anatomicae *of 1934*. New York: MacMillan, 1952.

Laurenza, Domenico, *Art and Anatomy in Renaissance Italy: Images from a Scientific Revolution*. New Haven: Yale University Press, 2012.

———, ———, *De Figura Ummana: Fisiogonimca, anatomia e arte in Leonardo.* Florence: Olschki, 2001.

Lazzarini, Elena, *The Nude in Central Italian Painting and Sculpture (1500-1600): Definition, Perception and Representation*. Ann Arbor: ProQuest, 2013.

Lind, L. R., trans., C. W. Asling, and Logan Clendening, *The* Epitome *of Andreas Vesalius*. New York: The Macmillan Company, 1949

Margócsy, Dániel, "From Vesalius through Ivins to Latour: imitation, emulation and exactly repeatable pictorial statements in the *Fabrica*," from *Word & Image*, Vol. 35, No. 3, pp. 315 – 324. Milton Park: Taylor & Francis, 2019.

Margócsy, Dániel, Mark Somos, and Stephen N. Joffe, *The* Fabrica *of Andreas Vesalius: A Worldwide Descriptive Census, Ownership, and Annotations of the 1543 and 1555 Editions*. Leiden: Brill, 2018.

Marre, P. And R. Villet, "Anatomy theaters in the history and teaching of surgery", from *Journal of Visceral Surgery*, Vol. 157, Is. 3, pp. S73 – S76. Paris: École-de-Médecine, 2020.

McCorquodale, Charles, *Bronzino*. New York: Harper & Row, 1981.

Miranda, Efrain A. "The Landscape Panorama of Vesalius' 'Muscle Men.'" Medical Terminology Daily. https://www.clinicalanatomy.com/mtd/665-the-landscape-panorama-of-vesalius-muscle-men.

Muntz, Eugene, "The Painter and the Draftsman: Late Renaissance Painting and Drawing," from *Michelangelo*, pp. 83 – 154. New York: Parkstone, 2012.

Nanobashvili, Nino, "The Rise and Fall of Anatomy: Alessandro Allori's Unfinished Drawing Manual and his Iterative Struggles with It," lecture recorded at *Failure: Understanding Art as Process, 1150 – 1750*. Florence: Kunsthistorisches Institut in Florenz, Max-Planck-Institut, 2020. https://vimeo.com/487140164.

Nuovo, Angela, *The Book Trade in the Italian Renaissance: Structure and Regulation.* 46th Annual Erasmus Lecture, University of Toronto, 2010.

Nutton, Vivian, "Historical Introduction", from *An Annotated Translation of the 1543 and 1555 Editions of "De Humani Corporis Fabrica Libri Septum"*, pp. LXXV – CIII. Basel: Karger, 2014.

Pilliod, Elizabeth, *Pontormo, Bronzino, Allori: A Genealogy of Florentine Art*. New Haven and London: Yale University Press, 2001.

Rifkin, Bejamin A., Michael J. Ackerman, and Judith Folkenberg, *Human Anatomy {From the Renaissance to the Digital Age}*. New York: Abrams, 2006.

Saunders, J. B. deC. M., and Charles D. O'Malley, *The Illustrations from the Works of Andreas Vesalius of Brussels with Annotations and Translations, A discussion of the Plates and Their Background, Authorship and Influence, and a Biographical Sketch of Vesalius*. Cleveland: The World Publishing Company, 1950.

Schuenke, Michael, Erik Schulte, Udo Schumacher, Anne M. Gilroy, ed., and Brian R. MacPherson, ed., *Atlas of Anatomy*, 3rd. ed. New York: Thieme, 2016.

Sealy, U., and T. C. Lee, "Anatomy and academies of art I: founding academies of art," from Journal of Anatomy, Vol. 236, No. 4, pp. 571-576. London: Anatomical Society, 2019.

Siraisi, Nancy G., "Introduction to Book Two," from *An Annotated Translation of the 1543 and 1555 Editions of "De Humani Corporis Fabrica Libri Septum"*, CIV – CIX. Basel: Karger, 2014.

Skaarup, Bjørn Okholm, "The Unexpected Success of a Spanish Anatomy Book: Juan Valverde de Amusco's *Historia de la composicion del cuerpo humano* (Rome, 1556), and its Many Later Editions," from *Specialist Markets in the Early Modern Book World*, Ch. 6, pp. 124 – 141. Leiden: Brill, 2015.

"Studio anatomico di figura maschile" Florence: Schede di catalogo, Gallerie degli Uffizi, 2023. https://catalogo.uffizi.it/it/29/ricerca/detailiccd/1579184/.

Summers, John David, *The Sculpture of Vincenzo Danti: A Study of the Influence of Michlelangelo and the Ideals of the Maniera.* London: Garland, 1979.

Thompson, Wendy. "The Printed Image in the West: Woodcut: Essay: The Metropolitan Museum of Art: Heilbrunn Timeline of Art History." The Met's Heilbrunn Timeline of Art History, 2003. https://www.metmuseum.org/toah/hd/wdct/hd_wdct.htm.

Tramelli, Barbara, "The Study of the Body: The Anatomical Discourse in Lomazzo's Writings and Painters' Learning of Anatomy in Milan," from *Giovanni Paolo Lomazzo's* Trattato dell'Arte della Pittura*: Color, Perspective and Anatomy*, Ch. 6, pp. 174 – 210. Leiden: Brill, 2017.

Vesalius, Andreas, Garrison, Daniel H., Malcolm H. Hast, and Vivian Nutton, *The Fabric of the Human Body: An Annotated Translation of the 1543 and 1555 Editions*. Basel: Karger, 2014.