FRAMING A SHIFTING PARADIGM: ART AND ANATOMY IN THE EARLY MODERN ERA

by

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Abstract

My thesis examines for the first time the extraordinary relationship among the frontispieces and illustrations of three mid-sixteenth century anatomical texts: Andreas Vesalius’ famous 1543 De humani corporis fabrica, hereinafter “Fabrica;” Juan Valverde’s 1556 Historia de la composicion del cuorpo humano, hereinafter “Historia;” and Realdo Columbo’s 1559 De re Anatomica. These frontispieces enact a sequential, dialogic – and most importantly – visual exchange of contemporary, interpenetrating debates on anatomical science, art practice, and art theory. They stage a contest, paregone, between Michelangelo and Titian, art and science, image and text and different modes of producing and framing knowledge. Vesalius’ paradigm shift in anatomical science required direct observation of the human body’s interior structures and their accurate, systematized, visual representation. Anatomy’s demands for precise visual depiction collided with sixteenth century Italian ideology that perceived the body as the pinnacle of creation and portrayed it in a classical, idealizing mode. Vesalius’ and Valverde’s insistence that their anatomical illustrations serve different visual constituencies – physicians, anatomists and artists; audiences with conflicting visual demands, posed unprecedented problems of presentation. These frontispieces and illustrations expose the graphical processes underpinning a new visual paradigm forged to meet these diverse, conflicting representational requirements. Combining new visual conventions developed to illustrate machines in the emerging genre of engineering treatises, innovative drawing techniques appropriated from art practice, and fine art practice’s classicized human form, generated the animated cadavers that strut and gesture across the pages of these works creating a template for anatomical illustration that persisted for centuries. These frontispieces’ oppositional iconographic systems, encoded visual vocabularies, and emblems reveal the contemporary taste for deciphering visual puzzles, opening a portal into
the mid-sixteenth century visual imagination. Inscribing an extended, witty, historiography of the origins of a new visual paradigm plundered from fragments of Raphael’s, Michelangelo’s and Titian’s most celebrated works; works whose own pillaging from classical art they expose, these frontispieces and illustrations peel away layers of artistic artifice to reveal the means of their own representation and its limitations.
Preface

This dissertation is original, unpublished, independent work by the author, Judy Jansen.
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Dedication

To my husband Donald Dunbar for everything.
Chapter 1: Introduction

Hands encircle the cadaver in Realdo Columbo’s 1559 *De re Anatomica* frontispiece [Figure 1]. The cadaver’s elegant outstretched fingers almost touch the putto’s hand that grasps four brushes. Reaching up with his other hand the putto tugs the fingers of a handsomely attired figure whose right hand gestures acknowledgement. At his elbow an anatomist grasps a scalpel in one hand, cradling the cadaver’s wrist and hand with his other. Beside the anatomist a man brackets the cadaver’s shoulder and head between his hands; next to him a seated man holds open a large illustrated book. The book’s edge touches an artist whose hand seems poised to draw an illustration of the dissection underway. Columbo’s anatomical frontispiece is virtually an encyclopedia of the hand’s functions.

*De re Anatomica’s* frontispiece depicts the luminaries of sixteenth century anatomical science. The figure seated near the cadaver’s head holding an open text is Andreas Vesalius, former first chair of anatomy at Europe’s foremost medical university, the University of Padua, the father of the new science of anatomy. Vesalius is portrayed reading his own foundational anatomical text, opened to its most famous illustration, one of the mycological or “muscle man” figures. At the frontispiece’s center, conducting an anatomy lesson is Vesalius’ former colleague and friend at the University of Padua, later a rival, the anatomist and *De re Anatomica’s* author, Realdo Columbo.¹

My thesis examines the frontispieces of three anatomical texts, Andreas Vesalius’ famous 1543 *De humani corporis fabrica*, hereinafter “*Fabrica,*” Juan Valverde’s 1556

Historia de la composicion del cuerpo humano, hereinafter “Historia” and Realdo Columbo’s 1559 De re Anatomica. As we shall see early modern frontispieces operate as advertisement, map, guide, entrance and frame for their texts. These three frontispieces encode rivalries, settle old scores, offer critiques of the leading mid-sixteenth century anatomists and artists, and argue for visual representation’s vital role in anatomical science. In what follows I will touch upon sixteenth century advances in paper and print technologies; new drawing techniques developed in scientific illustration and in art practice, and adapted to anatomical illustration, the wide dissemination of printed texts throughout Europe; and the anatomical texts’ use of visual representation that contributed to and accelerated the accumulation of anatomical knowledge.

These frontispieces reflect a paradigm shift in the nascent science of anatomy. In the mid-sixteenth century Vesalius insisted that physicians conduct dissections with their own hands, on human rather than animal cadavers, using direct observation to produce new anatomical knowledge and to visually represent the body’s interior structures. Vesalius’ mid-sixteenth century text challenged the medical establishment’s reliance on the theories of Claudius Galen [A.D. 129 – c. 200] whose anatomical treatise utilized animal dissection to describe human anatomy. Vesalius’ insistence on dissecting human cadavers and their accurate visual representation opened up the human body’s interior structures to unprecedented scrutiny. Visual representation’s crucial role in anatomical science required the development of a new visual paradigm: for the first time in art or science the body’s interior structures – its layers of veins, muscles, tendons, organs, viscera, and bones – had to be accurately and systematically represented. Although Leonardo Da’ Vinci had developed his own repertory of innovative drawing techniques to accurately articulate human anatomical structures early in the century his
anatomical drawings were never published and the extent of their circulation among other artists is unknown.²

The Fabrica and Historia were addressed to a visually literate audience composed of physicians, anatomists, and artists.³ Their frontispieces operate like a rebus offering up puzzles, encoding visual clues for decipherment, intended to reward a close, prolonged reading.⁴ In keeping with the visual taste of the day these three frontispieces deliberately combine a variety of visual conventions and iconographic systems to confound readability and produce aporia by creating unexpected juxtapositions and correspondences.⁵

Although the Fabrica’s frontispiece, illustrations, author, artists, and contribution to anatomical illustration and anatomical science have been the subject of an extensive scholarship no one has examined its extraordinary relationship with the frontispieces of Valverde’s Historia and Columbo’s De re Anatomica. My contribution to the existing scholarship on the relationship between anatomy and visual representation in the sixteenth century is to examine for the first

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time the sequential, dialogic – and most importantly – visual exchange of contemporary, interpenetrating debates on anatomical science, art practice and art theory articulated in these frontispieces. Focusing on the structure and operation of Historia’s and De re Anatomica’s little studied frontispieces I examine their responses to the visual provocations embedded in Fabrica’s frontispiece, its author portrait, and its unparalleled illustrations. Humanistic striving for notoriety, or “fama,” fueled an intense rivalry to claim priority for anatomical discoveries and generated artistic feuds in the visual dialogic exchanges of the frontispieces considered in my thesis.

The visual dialogic exchanges among these three anatomical texts reveal how their artists contrived a visual paradigm for an emerging science. Depicting the human body’s exterior, the dissection process and precise, accurate depictions of the body’s interior structures posed unprecedented challenges of presentation. The prevailing mid-sixteenth century Italian ideology of the human body as the pinnacle of creation shaped the way the exterior body was seen and visually represented. The Vesalian paradigm of direct observation and systematic, precise, and accurate visual representation conflicted with a visual culture that depicted the human body in a classical, idealizing mode. Vesalius’ insistence that his anatomical illustrations serve different visual constituencies – physicians, anatomists and artists; audiences with different and conflicting visual demands – added further complexities to the representational challenges. To solve these multiple problems of presentation early modern artists adapted technical drawing techniques from the new genre of engineering treatises, innovative techniques from fine art practice, sequential drawing techniques, and techniques to visually represent processes. Sixteenth century visual culture privileged a fine art practice of dismemberment and reassembly. The leading artists of the day, including Raphael, Michelangelo and Titian, pillaged from antique
sculptures and fifteenth century works; and stole figures, compositions and techniques to create
distinctive visual styles. Interwoven in these frontispieces and illustrations are the fine art
sources and art practices devised to solve the challenges of visually representing the Vesalian
paradigm.

My thesis shows that these frontispieces and illustrations inscribe an extended, witty
historiography of the figures, gestures, poses, compositions, drawing techniques, and themes
stolen from the works of Raphael, Michelangelo, and Titian. I argue that the century’s most
celebrated paintings, sculptures, frescoes and architecture were dismembered and recombined to
illustrate anatomical science. Mid-sixteenth century visual taste’s enthusiasm for visual puzzles,
emblems, oppositional iconographic systems, and encoded visual vocabularies add another layer
of visual complexity to these frontispieces and illustrations. My thesis examines the visual and
dialogic exchanges on contemporary debates on anatomical science, art practice and art theory;
their staging of the Michelangelo-Titian paregone; the contest between art and science, image
and text; and different modes of producing and framing knowledge. These frontispieces make a
compelling argument for visual representation’s power to communicate complex theoretical
discourses.

In 1540 the anatomical relationships underlying these visual dialogic exchanges began
when Realdo Columbo, a skilled surgeon and physician, became Vesalius’ assistant, or ostensor,
at the University of Padua. Columbo was referred to in the Fabrica as Vesalius’ “good friend”
and “a most diligent student of anatomy.” While Vesalius was absent from Padua, Columbo took
the opportunity to advise the audience attending his public anatomy that Vesalius’ description of
the eye’s anatomical features was based on the dissection of a cow rather than a human eye.\(^6\)

Since Vesalius’ overriding criticism of Galen’s anatomical texts was his extrapolation of animal anatomy to describe human anatomy, Columbo’s remark undermined Vesalius’ credibility. In response, Vesalius’ 1546 medical paper denounced Columbo as a poorly educated scoundrel.\(^7\)

By the time *Fabrica*’s second edition was published in 1555 all references to Columbo had been removed.\(^8\)

Vesalius’ and Columbo’s relationship with Juan Valverde also began at the University of Padua. Valverde, *Historia*’s author, and a Spanish physician, moved from Spain to Italy in the 1540s to gain first-hand experience in anatomy at the University of Padua where he was taught by both Vesalius and Columbo. After his dispute with Vesalius, Columbo accepted the post of Chair of Anatomy at the University of Pisa and Valverde accompanied him to assist in his anatomical practice.\(^9\) Later Columbo was appointed Chair of Anatomy at the papal university *La


\(^7\)Bylebyl, [n. 6], p. 2.


Sapienza, moving to Rome in 1547. Valverde followed Columbo to Rome, again assisting him in his anatomical practice and later taking a medical position at the Hospital of Santo Spirito in Sassia. During his residence in Rome Valverde became the private physician of Spanish Archbishop Juan Alvarez da Toledo connecting him to an exclusive circle of expatriate Spanish intellectuals and artists.

While in Rome Valverde and Columbo collaborated on anatomical research to explicate pulmonary circulation. Valverde was first to publish the results of their research in his anatomical text Historia, in Spanish in Rome in 1556; a “discovery” considered to be a major breakthrough in anatomical science that contradicted Vesalius’ views in the Fabrica. Columbo had the distinction of being the first to publish their joint findings on pulmonary circulation in Latin in his anatomical text published posthumously in 1559.

Vesalius’ revolution in anatomical practice is brought into focus by comparing the 1491 frontispiece of the first illustrated medical text, Fasciculo di medicina’s [Figure 2], 1491 with the

10 Schultz, Bernard. [n. 1], p. 100; Dillon, [n. 9], p. 205.
11 Dillon, [n. 9], p. 205.
13 Schulz, [n. 1], p. 107.
14 But see Dillon’s excellent historiography on pulmonary circulation that suggests its attribution to Valverde and Columbo uncertain, Dillon, [n. 9], pp. 241 – 249.
15 De re Anatomica, although completed in 1557, was not published until 1559. Laurenza, Domenico. “Art and Anatomy in Renaissance Italy, Images from a Scientific Revolution.” Metropolitan Museum of Art Bulletin, 2012, p. 28. The date De re Anatomica was completed is significant in identifying its frontispiece’s artist.
Fabrica’s. In the Fasciculo a physician sitting at his desk is framed by his extensive medical library, which includes legibly titled texts identifying the leading Greek, Roman, and Arab scholars that are quoted in the treatises contained in the text. Absorbed, pen in hand, the physician’s work transcribing a learned antique text is intellectual – the art of physica. The physician’s desk cupboard swings open revealing a jumble of books at his mid-section and he, with pen rather than scalpel, performs a conceptual self-dissection. Engaged in theory, the physician is positioned high above his patients who wait far below. In the late fifteenth century the book, not the body, was the site of medical knowledge and authority.

Fabrica’s frontispiece, published in 1543, marked a fundamental shift in the site of medical knowledge [Figure 3]. The physician, his hand, the table, and the book are all repositioned. The physician now stands amongst an animated crowd, one hand retracting the open abdominal cavity of a female cadaver to expose new knowledge of the body’s structures; the other hand gesturing, emphasizing a point in the anatomy lesson. The physician’s hand has primacy and the body is the new site of knowledge. Vesalius’ intervention in the medieval anatomical practice that formerly separated the physician’s intellectual role from the manual


17 These individuals at the bottom of the frontispiece are identified as either patients or the messengers of patients due to the cloth covered baskets thought to contain the patients’ urine samples for analysis, urine analysis was a key diagnostic tool in the late 15th century. DiMaio, Salvatore, M.D. et al. “Il Fasciculo di Medicina of 1493: Medical Culture Through the Eyes of the Artist.” Neurosurgery, Vol. 58, No. 1, January 2006, pp. 188 – 189.

practice of dissection was a paradigm shift in anatomical science. The objective of anatomy lessons before Vesalius was to confirm, not to test or advance, the knowledge described in antique texts.

In *De re Anatomica*, published in Venice 16 years after the *Fabrica*, Columbo sought to correct the leading antique scholars and challenge his former teacher and contemporary Vesalius. In *De re Anatomica*’s frontispiece Vesalius, positioned at the edge of the pictorial space, his head bowed over his text, holds a book rather than a scalpel. Columbo is at the frontispiece’s centre conducting his anatomy lesson, correcting Galen and Vesalius, adding to anatomical knowledge.

Vesalius, relegated to the role he sought to revolutionize – reading from his text rather than actively participating in the dissection– is engaged with theory and divorced from the hand’s *apprehensio*; its ability to both grasp and understand.

Even so, *De re Anatomica*’s frontispiece validates Vesalius’ intervention that changed the perception and practice of anatomical dissection from a theoretical to an empirical approach. This innovation spread to include other medical disciplines in the latter half of the sixteenth century.¹⁹ Vesalius’ fundamental contributions to the science of anatomy are inscribed in *De re Anatomica*’s frontispiece – the physician conducting the anatomy with his own hands, the dissection performed on human rather than animal cadavers, the use of direct observation to produce anatomical knowledge, and the practice of utilizing accurate visual representations of anatomical science.

It is well known that the visual representation of anatomy was dependent upon technological advances in printing enabling the wide dissemination of “exactly repeatable pictorial statements.”\textsuperscript{20} Technological advances in paper manufacturing driven by printers’ demands for reliable paper supplies made paper less expensive and more available after 1490.\textsuperscript{21} The availability of inexpensive paper had profound consequences for artists.\textsuperscript{22} Unlike the previous media of wood, wax or slate tablets, paper did not have to be erased and re-used.\textsuperscript{23} Paper made possible a less formal, approach to drawing that allowed artists to experiment with innovative drawing techniques and to record evolving designs or concepts and maintain an archive of their own designs and those of others.\textsuperscript{24} Leonardo recognized the value of assembling a record of one’s drawings and sketches, advising young artists to always carry their sketchbook and to preserve their drawings with great care to assist their memories and be their “aids and teachers.”\textsuperscript{25}

\begin{thebibliography}{9}
\bibitem{Brothers1} Brothers, [n. 22], pp. 11 - 13.
\end{thebibliography}
human body and its movement, and a determination to find solutions to artistic problems through
drawing generated new drawing techniques to capture sequential movement as recorded in the
extant drawings of Leonardo and Michelangelo. The technique of rotating a single figure
through a series of positions to generate new poses and different viewing angles first seen in 15th
century drawings and expanded and systematized in the drawings of Leonardo and Michelangelo
produced multiple drawings of the body on a two-dimensional plane that, viewed sequentially,
provided a panoramic view of the body.

The availability of paper also allowed for the visual recording of processes. Accurate,
detailed, sequential drawings made over a period of time had multiple applications for scientific
illustration. For example, the layers of various muscle groups could be visually recorded as they
were newly exposed by the removal of tissue in the dissection process. These drawing techniques
developed in sixteenth century art practice together with advances in scientific illustration that I
refer to later in my thesis, were appropriated by the Titian workshop to create the Fabrica’s
mycological and osteological series of illustrations. Although the first artist to fully exploit the
possibilities of these new drawing techniques and apply them to anatomical drawings was
Leonardo his important artistic interventions were not made public. It is possible that Leonardo’s
drawing techniques were assimilated into Michelangelo’s art practice when they were both
engaged in commissions in Florence’s Palazzo Vecchio in approximately 1503. I argue that the
frontispieces of Fabrica, Historia and De re Anatomica acknowledge their debt to the artist who

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27 Brothers, [n.22 ], p. 13.
first publically displayed the representational possibilities of applying the panoramic drawing technique to the human figure.
Chapter 2: Paregone and Paradigm

Scholars generally agree that the author of the Fabrica’s celebrated frontispiece and many of its illustrations was Flemish artist Johannes Calcar, a member of Titian’s workshop adept at imitating Titian’s style.\textsuperscript{28} In the mid-sixteenth century’s atelier culture a Master painter or sculptor had responsibility for the design and oversight of commissions that were then largely executed by assistants in the visual idiom of the workshop. Commissions produced in this manner would be understood to be the invenzione, or overall conception, of the master. Contemporaries understood the overall design of the Fabrica’s illustrations to be Titian’s, and responsibility for executing the illustrations, possibly with contributions from other members of the Titian workshop, to be Calcar’s.\textsuperscript{29} Vesalius’ correspondence and the detailed anatomical knowledge displayed in the Fabrica’s illustrations make it evident that Vesalius was intimately involved in every aspect of the production of the illustrations.\textsuperscript{30}

Valverde’s anatomical text Historia published in 1556, between the Fabrica and De Re Anatomica, was illustrated by Gaspar Becerra, a Spanish painter, sculptor and architect.\textsuperscript{31} Becerra assisted Vasari – Michelangelo’s friend, biographer and ardent admirer – to paint


\textsuperscript{30} Kemp, Martin. “A Drawing for the Fabrica; And Some Thoughts Upon the Vesalius Muscle-Men.” \textit{Medical History}, Vol. 45, No. 1, (1971), pp. 280 – 281; Park, [n. 4], p. 211.

frescoes in the Palazzo de Cancelleria. He also assisted Michelangelo’s former assistant and collaborator Daniele da Volterra; an artist, as Morten Steen Hansen has observed, whose goal was to be considered Michelangelo’s artistic heir. Becerra’s extant drawings include studies of figures from Michelangelo’s Last Judgment in the Sistine Chapel. Becerra also visited Florence to study works in Michelangelo’s Medici Chapel as evidenced by his allusions to Michelangelo’s sculptures in architectural drawings and frescoes executed after his return to Spain.

In his preface to the Historia, Valverde acknowledged his debt to the Fabrica, admitting that hundreds of the Historia’s engraved copperplate illustrations were copied from the Fabrica’s woodblock plates. Valverde offered pedagogical expediency as a rationale – the reader would be spared confusion by being able to examine the Fabrica’s illustrations to distinguish where Valverde agreed and disagreed with Vesalius. As a result Vesalius condemned Valverde as a plagiarist lacking in anatomical experience, “ignorant of medicine” and interested only in

32 Cachon, [n. 12], p. 388.
36 Carlino, [n. 18], p. 54.
“shameful profit.” Nonetheless, Valverde’s use of the *Fabrica*’s illustrations highlights how the role of visual representation had accelerated the accumulation of anatomical knowledge. The *Fabrica* illustrations’ provision of detailed, accurate descriptions of anatomical features made it possible for subsequent anatomists to test, challenge, and add to or correct anatomical knowledge.\(^{38}\)

Valverde’s reuse of the *Fabrica*’s illustrations involved Becerra in copying, correcting, and in some cases improving the *Fabrica*’s illustrations.\(^{39}\) In addition Becerra produced a number of original illustrations in those instances where Valverde’s anatomical knowledge surpassed Vesalius.’ Becerra’s collaboration with Valverde immersed him in the Titian workshop’s visual style and provided him with intimate knowledge of Valverde’s, Columbo’s and Vesalius’ entangled, acrimonious relationship. As assistant to Vasari and Daniele, and through his own study of Michelangelo’s works in Rome and Florence, Becerra was also well versed in Michelangelo’s visual idiom, gaining insight into the latter’s technique and art theoretical concerns.


\(^{38}\) The *Fabrica*’s illustrations were more accurate than those in any previous anatomical text however, as Valverde and Columbo demonstrated there were many inaccuracies in both the text and illustrations of the *Fabrica* and Vesalius occasionally substituted animal anatomy for human and male anatomy for female. Ford, Brian J. *Images of Science A History of Scientific Illustration*. London: The British Library, 1992, p. 2; Roberts and Tomlinson, [n. 38], p. 218; Laqueur, Thomas. *Making Sex: Body and Gender from the Greeks to Freud*. Cambridge, Mass.: Harvard University Press, 1990, pp. 219 – 220; Park, [n. 4], p. 220.

Writing from Rome in 1548 Columbo sought leave from his patron, Cosimo I, to remain in the city rather than return to the University of Pisa, explaining he wished to work on an anatomical text assisted by the “leading painter in the world.” Columbo, determined to surpass his rival Vesalius’s anatomical text, boasted he would correct both Galen’s and Vesalius’s errors. Scholars have inferred from Columbo’s letter to his patron that he had enlisted his famous friend and patient Michelangelo to collaborate with him on this anatomical project, a collaboration that would enable Columbo to eclipse Fabrica’s anatomical knowledge and its spectacular illustrations. The extent of Michelangelo’s intended assistance with Columbo’s anatomical treatise is unknown. However, it is evident from the biographies of Vasari and Condivi and Michelangelo’s correspondence that Columbo and Michelangelo shared an intense interest in the study of anatomy and the practice of dissection, a physician/patient relationship, and a devoted friendship.

40 Letter from Columbo to Cosimo I, Duke of Florence, 1548 quoted in Coppolo, [n. 6], p. 55.

41 Ibid.


43 Coppola, [n. 6], p. 50.

Accordingly, in *De re Anatomica*’s frontispiece, [Figure 1] I argue that the hand the putto in the center foreground reaches up to grasp is that of Michelangelo an artist who performed numerous dissections; conducted anatomical studies; was celebrated during his lifetime for his accurate rendering of muscles and tendons in his sculptures, paintings and frescoes; and according to his biographers had long intended to author an anatomical treatise for artists. Becerra’s Michelangelo bears a striking resemblance to Daniele da Volterra’s contemporaneous portrait of Michelangelo [Figure 4]. In his mid-seventies when Columbo moved to Rome and with numerous major projects underway, Michelangelo’s anatomical illustrations for *De re Anatomica*, if ever promised, failed to materialize. Columbo died before *De re Anatomica* was published and its only illustration remains the frontispiece. *De re Anatomica*’s burden and legacy was to visually explicate the themes of an entire text in its frontispiece.

Until recently scholars identified Paolo Veronese as *De re Anatomica*’s artist without providing any explanation or evidence. In 2012 Anne Dillon’s *Michelangelo and the English Martyrs* suggested Gaspar Becerra was *De re Anatomica*’s artist based on an analysis of stylistic similarities between a 1555 broadsheet, Becerra’s anatomical figures in Valverde’s *Historia*, and *De re Anatomica*’s frontispiece. As I intend to show, *De re Anatomica*

45 Schultz, [n. 1], p. 103; Carlino, [n. 18], p. 64; Vasari, [n. 44], p. 83; Condivi, [n. 44], pp. 97 – 99.


47 Dillon, [n. 9], p. 231.
frontispiece’s evocation of the anatomical and artistic rivalries among Vesalius, Columbo, Valverde, Calcar, Titian and Michelangelo – drawn with consummate economy and wit – required an artist conversant in Michelangelo’s and Titian’s visual languages; a mastery of anatomical illustration; and a familiarity with the nuances of Vesalius’, Valverde’s, and Columbo’s intertwined histories, and the artistic rivalry between Michelangelo and Titian. My analysis of these frontispieces’ artistic exchanges and their historical context supports Dillon’s identification of Gaspar Becerra as *De re Anatomica*’s artist.

The *Fabrica’s* and *De re Anatomica’s* frontispieces are thus inscribed with portraits of Venice’s and Florence’s leading artists. The two figures leaning out of the windows in the *Fabrica*’s top register are Calcar on the left and Titian on the right\(^48\) [Figure 5]. The initials “IO” on the wall near Calcar’s likeness stand for the first two letters in his name, Iohannes.\(^49\) Inscribing one’s self-portrait in one’s work makes a conscious declaration of the artisanal hand’s power to construct and represent knowledge.\(^50\)

The long public history of artistic rivalry, unattributed artistic theft and one-up-man-ship between Michelangelo – best known for his treatment of the male form – and Titian – best known for his sensuous handling of the female nude – also plays out in the exchanges between the *Fabrica’s, Historia’s* and *De re Anatomica’s* frontispieces. For example, the sly insertion of

\(^{48}\) Herrlinger, [n. 31], p. 103, footnote 3.


a muscular, grimacing Michelangelesque ignudo clinging to a Corinthian column framing the Fabrica’s frontispiece’s left edge, a figure referred to only as a “puzzling naked figure” in the previous Vesalius literature, activates a dialogue on the figure and the frame, and, it may seem strange to say, constitutes an ironic acknowledgement of the Fabrica’s debt to Michelangelo.

Michelangelo’s band of twenty ignudi framing the pictorial program on the Sistine ceiling were the first publically displayed figures to fully exploit the anatomical potential of the panoramic drawing technique, referred to earlier, in which a single figure is rotated through a continuous series of positions [Figure 6]. Michelangelo’s muscular, anatomically exaggerated ignudi shown from multiple viewpoints anticipate the sequential presentation of the Fabrica’s mycological and osteological figures [Figure 7]. I suggest that Michelangelo’s panoramic drawing technique was adapted for anatomical illustration for the first time in the Fabrica. Illustrated anatomical texts published in Italy before the Fabrica limited their display of mycological and osteological figures to anterior and posterior views. We know from Michelangelo’s contemporaries and his biographers that the Sistine ceiling was a magnet for artists who travelled to Rome expressly to copy Michelangelo’s figures. As a result, Michelangelo’s sequential panoramic drawing technique was widely disseminated through

51 Park, [n. 4], p. 228.

52 The illustrated Italian anatomical texts published before the Fabrica are: Guido da Vigevano’s 1345 Anathomia; Mondino de Luzzi’s 1316 [published 1478] Anathomia Corporis humani; Johannes de Ketham’s 1491 and 1493 Fasciculus Medicinae; and Berengario da Carpi’s 1523 Isagogae breves.

Further, we can trace quotations from Michelangelo’s Sistine Chapel figures of Adam and Eve in Titian’s earliest artistic production; for example, in his 1511 frescoes for the Scuola del Santo in Padua the physical attitude of the figure of the wife in the Murder of the Wife reverses Michelangelo’s Eve in The Original Sin and Titian’s figure of Sacred Love in Sacred and Profane Love adopts the seated, knees akimbo pose of the Sistine Chapel’s Joel. Therefore, I suggest, it was Michelangelo who provided the initial visual paradigm adopted and adapted to represent Vesalius’ anatomical paradigm. This visual discourse, begun by Fabrica’s ignudo, will be responded to and elaborated in the Historia’s and De re Anatomica’s appropriations and references on a number of levels – the body and architecture, the figure and frame, and anatomical illustration’s relationship to sixteenth century art practice.

The frontispieces and illustrations examined in my thesis were drawn by artists trained in fine art production. The early modern Italian atelier taught drawing skills through the copying of antique sculpture and contemporary works, as well as drawing from life. Although the human figure was depicted naturalistically in mid-sixteenth century Italy its portrayal was shaped by early modern ideology and artistic conventions. The human body, privileged as “the crown and

54 Ibid.
sum of creation” was depicted in a classical, idealized mode. The Vesalian paradigm requiring a precise, accurate, systematized, visual representation of bodily structures was produced in a Venetian atelier internationally renowned for its erudite, expressive, multivalently iconographic, sensuous, painterly art production.

In the decades preceding Vesalius’ selection of the Titian workshop for his anatomical project a new genre, the engineering treatise, was emerging in Italy due to humanist and princely interest in scientific investigations into military equipment, machines, and mechanical devices. There was a surge of publications of illustrated treatises on technical engineering subjects from about 1517. The fifteenth century’s introduction of linear perspective, a fixed viewpoint, and the use of light and shadow effects of chiaroscuro to model figures had rationalized and objectified images paving the way for scientific illustration. Engineering treatises required the development of an array of drawing techniques to depict “legible visual schemes” requiring a “systematic approach, utility, function, clarity, removal of extraneous detail,” novel presentation


60 Ibid., p. 169.
techniques, and “consistency of size, scale and line.” To depict functioning machines, their interior parts, and their unassembled components innovative techniques – the cutaway, exploded, transparent and deconstructed figures together with views in elevation and plane, and geometrical schematizations – were developed. Techniques and visual conventions developed to illustrate functioning machines and their components were adapted to illustrate anatomical features in the Fabrica and the Historia.

As mentioned earlier both the Fabrica and the Historia were intended for an audience of physicians, anatomists and artists. The conflicting visual demands made by these different viewing audiences has escaped scholarly attention, thus far. The Fabrica’s multiple functions together with Vesalius’ insistence on the crucial role of visual representation created complex problems of presentation for its artists. Artists’ concerns in studying anatomical images are proportion, form, and movement – the way activated muscles shape the body’s surface contours. Artists examine the profiles of various muscle groups affecting the figure’s exterior contours; how muscles react to torsion, extension, and different kinds of movement. The relevance of the mycological, or muscle-men figures, for example, to physicians and anatomists is fundamentally

61 Galluzzi, [n. 2], pp. 51 – 55; Edgerton, [n. 59], p. 184.

62 Ibid.

63 Leonardo had utilized all of these techniques in his anatomical and engineering drawings much earlier than their adaptation by the Titian workshop but it is not known whether these drawings were circulated among other artists. Galluzi, [n. 2], p. 51 - 55.

64 Kornell, [n. 3], p. 44.

different. Physicians and anatomists are interested in understanding, *inter alia*, the site of origin and insertion of individual muscles, the sites of their attachment to tendons and bones, the muscle’s arrangement within its muscle group, and the relationship between muscle groups.\(^{66}\)

Drawings that serve artistic relevance by showing the contours of the muscles within their muscle groups conceal the individual muscle’s sites of origin and insertion. The presentational complexities of meeting these multiple and conflicting visual demands had been partially resolved in Michelangelo’s panoramic drawing techniques showing the figure in torsion from multiple viewing angles. The composite drawing techniques developed to depict functioning machines, their interiors, and component parts, met some of the visual challenges posed by anatomical relevance. Meeting these multiple demands required an animated, upright, cadaver posing in a series of physical attitudes to activate different muscle groups. Through the simultaneous processes of rotating and dissecting the animated cadaver the artists could display both the contours of the muscle groups and the site of origin and insertion of individual muscles.

I return now to *Historia’s* and *De re Anatomica’s* frontispieces to examine their critique of the *Fabrica’s* visual style, tone and intentions. The *Fabrica’s* frontispiece – carnivalesque, outrageous, abuzz with incident – was intended to shake up a millennium of anatomical tradition and caused a furor when it was published.\(^{67}\) The *Fabrica’s* secular and titillating frontispiece – its challenge to the medical establishment – is critiqued in *Historia’s* emblematic frontispiece and in the re-sacralized atmosphere of *De re Anatomica’s*. Upon an initial examination the *Historia* frontispiece’s seemingly conventional motifs appear to bear no relationship to the

\(^{66}\) Personal conversation with Dr. Mary Dunbar.

\(^{67}\) Schultz, [n. 1], p. 25.
Fabrica’s. Accordingly, its structural similarities to the Fabrica’s have escaped scholarly attention, thus far. Its escutcheon, putti, and architectural backdrop imitate, scale-up, and transform the Fabrica’s upper register [Figure 8]. Putti trailing ribbons of fabric bear aloft Vesalius’ coat of arms above a cartouche suspending a grotesque mask in the Fabrica. Becerra deploys these same motifs thirteen years later with correspondingly older putti, now youths, who hoist the blazon of Historia’s patron Arch-Bishop Juan Alvarez de Toledo above a cartouche suspending a series of grotesque masks.68 The Historia’s nude youths resemble two of Michelangelo’s soaring souls in his Last Judgment,69 [Figure 9] a work whose theme, the enfleshment of the human skeleton for resurrection, visually reverses the dissection process. The youths’ drapery, bodies in movement, torsion, contrapposto stance, anatomical features – abdominal and pectoral muscles straining to hoist the Arch-Bishop’s elaborate blazon – were all considered by early modern art theory to pose representational challenges, difficulta.70 The frontispiece thus argues for Becerra’s mastery of difficulta, contrasts his dynamic handling of the motifs of putti, blazon and architectural framework with Fabrica’s static one, while engaging the viewer in a series of concetti to decipher.

Like Fabrica’s putti, Becerra’s youths are suspended near the picture plane in front of an illusionistic architectural backdrop. The Historia responds to the Fabrica’s ignudo and columns with an extended meditation on the figure and the frame. As Hipolito Cachon observes, the Historia’s architectonic frame resembles Michelangelo’s triangular-pedimented windows in the

68 Cachon, [n. 12], p. 406.
69 Herrlinger, [n. 31], p. 123; Cachon, [n.12 ], p. 406.
70 Summers, [n.29], p. 179.
Laurentian Library. The Laurentian windows are blind, they resemble empty tabernacles, and are framed like doors but do not open [Figure 10]. In the Historia’s frontispiece the Laurentian library’s “useless” window is given multiple functions – portal to the text, tabernacle to house the sculptural youths, and window framing visual representation’s role in anatomical science.

Intriguingly Becerra has modified Juan Alvarez da Toledo’s blazon, transforming its customary oval shape [Figure 11] into the visual analogue of a sacrum bone. The sacrum, a triangular shield-shaped bone at the base of the spine between the two hip-bones forming the back of the pelvis, received its name from the medieval belief that it was the seat of the soul. During the middle ages and the early modern era the sacrum was also known as the “resurrection bone,” believed to be essential for the body’s rebirth into the Christian afterlife.

71 Cachon, [n. 12], p. 406. The Laurentian library is part of the San Lorenzo complex housing the Medici Chapel which Becerra is known to have visited.


73 The subsequent edition of the Historia published after Arch-Bishop Juan Alvarez da Toledo’s death, and also illustrated by Becerra, Carlino, [n. 18], pp.54 - 55 removes the Arch-Bishop’s blazon and displaces and includes two sacrum bones placed in the illusionistic architectural frame of the frontispiece at either end of the trabeation register.


75 Ibid., p. 2062.
In the *Fabrica* Vesalius criticized Galen’s anatomical text for describing an animal rather than a human sacrum bone and then erred in his own description of it. Historia’s prominent display of a sacrum bone visually corrects Galen and Vesalius. Symbolically, the sacrum as the resurrection bone was necessary to transport the body to the afterlife, functioning, like the frontispiece itself, as a kind of portal. Spiritually, the sacrum references the Renaissance concept of the body as the soul’s temple, the body as frame for the soul. Visually, the sacrum resembles a shield or blazon operating as a brilliant meta-emblem for an anatomical text – the body’s blazon.

Becerra’s depiction of the sacrum brings into visibility the relationship between the outward appearance of the human body as a frame for the skeletal structure it contains – the figure as frame. The *Fabrica* deployed elegant, idealized, animated figures as a frame for its anatomical illustrations conferring on a new, and still disreputable science, art’s cultural and intellectual authority. The *Fabrica’s* visual rhetoric deflected the actual, disgusting process of paring away the tissue of a decomposing, odiferous corpse over the course of several days by representing the dissection process in a series of compelling illustrations - a classical frame masking a messy, destructive process. The early modern candidate for dissection, usually an executed criminal, an unclaimed member of the poor, or a foreigner, is transformed in the *Fabrica’s* representational universe from an abject, repugnant, prostrate corpse into a classical, idealized, upright form. Becerra’s frontispiece, deploying art’s visual idiom reveals that to expose the sacrum bone to anatomical knowledge is to destroy its frame, emblematized by the

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two nude youths whose bodies, cleaving to the blazon, curve outward to form the sacrum bone’s triangular shape.\textsuperscript{77}

*De re Anatomica’s* frontispiece offers its own critique of the *Fabrica’s* representational strategies. Imitating, condensing, and transforming the *Fabrica’s* depiction of an anatomy lesson *De re Anatomica* focuses the eye on the gesturing hands encircling the cadaver. The *Fabrica’s* frontispiece, unlike any anatomical frontispiece before or since, places the female cadaver’s feet and splayed legs at a right angle to the picture plane to maximize the exposure of her genitals.\textsuperscript{78}

*De re Anatomica’s* obscures the male cadaver’s genitals with Michelangelo’s hand.\textsuperscript{79} In *Fabrica’s* frontispiece the female cadaver’s abdominal cavity opened like a huge, ragged wound, exposes her dissected uterus foregrounding the female reproductive system even though, as medical historian Katherine Park observes, Vesalius’ knowledge of female reproduction and genitalia was “vague, brief, and inaccurate.”\textsuperscript{80} Conversely, Columbo, boldly claimed in his text to have “discovered” the clitoris and its sexual function.\textsuperscript{81} Thus, in *De re Anatomica’s*

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\textsuperscript{78} Park, Katharine, [n. 4], p. 216.
\textsuperscript{79} Becerra shows us Michelangelo’s hand while performing his own sleight of hand. Michelangelo’s hand obscures the fact that Becerra’s compositional strategy required him to tamper with the cadaver’s proportions – the cadaver’s hip joins his knee, his femur is missing. Becerra has overridden all of Alberti’s rules on proportion, not to mention the direct observation and accuracy required in anatomical illustration, in favor of his own concetto, or what Michelangelo referred to “as the compass of the eyes.”
\textsuperscript{80} Park, [n. 4], p. 219.
\end{flushright}
background an en-niched, female statue [Figure 12] is depicted as either baring her breasts and pubis or decorously covering them. Becerra leaves open the possibility that the arc of the female statue’s arm imitates the self-pleasuring gesture of Giorgione’s and Titian’s *Sleeping Venus*, Titian’s *Venus of Urbino* and his *Danae*. The female statue’s downcast gaze, partially hidden breasts, and gesturing arm also ironically evoke the iconography of modesty, the *Venus pudica*. The *Venus pudica* was the antique sculptural prototype for Titian’s painted *Venuses*, Michelangelo’s *Night* and *Dawn* in the Medici Chapel and for one of the *Historia’s* strikingly original anatomical figures depicting the female reproductive anatomy [Figure 13].

Becerra copied more than two hundred of the Titian workshop’s anatomical illustrations for the *Historia*. In those instances where Valverde’s anatomical knowledge was superior to Vesalius – as was the case with the female reproductive system – Becerra, released from the constraints of mere copying, expressed his own visual imagination. The representational strategies he mobilized to illustrate the female reproductive anatomy in the *Historia* are technically innovative, anatomically accomplished, and strikingly original; a marriage of anatomical illustration and artistic disegno. Vesalius admitted that he had never dissected a pregnant human cadaver nor a human fetus. The *Fabrica*’s illustration of female reproductive anatomy attached a human fetus to a canine placenta. Becerra not only illustrates a human

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83 Park, [n. 4], pp. 219 – 220; Roberts and Tomlinson, [n. 37], p. 218.
placenta, he depicts for the first time in anatomical illustration the placenta’s developmental phases and its relationship with the human fetus. Further, Becerra replaced the visual frame utilized by the *Fabrica*, a dismembered sculptural fragment, with a full-length drawing of a female figure whose *Venus pudica* gesture is both ironic and perfectly adapted to her anatomical burden of demonstrating the gravid uterus, liver, stomach, transverse mesocolon, peritoneal folds, bladder, the medial and the two lateral umbilical ligaments draped on her right thigh. The small drawings arrayed beside her illustrate the development phases of the placenta, its amniotic fluid, and the placenta’s relationship with the fetus. In the last drawing in this illustration the fetus liberated from the placenta and now a viable infant sits on a grassy hillock.

Thus, this solitary female figure in *De re Anatomica’s* frontispiece generates a flood of contemporary discourses on the visual representation of the female nude from both an anatomical and fine art perspective. Becerra’s handling of the female figure in both his en-niched female sculpture and in his *Venus pudica* figure illustrating the female reproductive system critiques Vesalius’ violent, exploitive imagery and his ignorance of female anatomy. Although Claire Richter Sherman interprets Becerra’s *Venus pudica* figure as evincing both submission and resignation it is useful to consider her within the context of *Fabrica’s* “imagery of gendered violence”.

The *Fabrica* utilizes a dismembered torso to display female reproductive anatomy obliterating female and maternal identity while Becerra’s grave, modest figure is granted agency.

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84 Roberts and Tomlinson, [n. 37], p. 218.

85 Sherman, Claire Richter and Lukehart, Peter M. (Eds.) *Writing on Hands Memory and Knowledge in Early Modern Europe*. Seattle: University of Washington Press, 2001, p. 97. The term “imagery of gendered violence” is from Park, [n.4], p. 249.
irony, and humanity. As a so-called self-demonstrating figure Becerra’s Venus participates in the production of the anatomical knowledge of her own body in contrast to the female cadaver in the Fabrica’s frontispiece whose opened, retracted uterus, explored by Vesalius’ invasive hand, is violated solely to enhance his status. Before and during the period when the Fabrica was published there was a thriving production of erotica that engaged the pictorial imaginations of both Michelangelo in his Leda and his presentation drawings, and Titian in his Venuses, Andromedas and Danaes. Becerra’s somber atmosphere in De re Anatomica’s frontispiece and the gravity of Becerra’s Venus pudica figure in the Historia reflect a Counter Reformation sensibility – a sensibility which caused the Council of Trent to order the “emendation” of the Last Judgment’s “indecent nudes” and its “thousand heresies.”

The en-niched female statue in De re Anatomica referencing the Historia’s illustration of female reproductive anatomy operates as a kind of metonymic illustration program. A generative figure, she activates a stream of visual associations and correspondences for a text otherwise lacking anatomical illustrations. The frontispiece’s female statue’s relationship with the en-niched male sculptural fragment directly above her is examined later in my thesis.

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86 Michelangelo’s Last Judgment figures’ genitalia were covered by modesty cloths in 1564 six years after the De re Anatomica was published and probably eight years after Becerra completed this frontispiece. Colalucci, Gianluigi. “Technique, Restoration, and Reflections.” Michelangelo The Last Judgment. Jenkens, Lawrence, Trans. New York: Harry n. Abrams, Inc., p. 194; however, the Counter-reformation’s criticisms of visual representation had entered art theoretical discourse much earlier, at least by the 1540s when the Last Judgment was first displayed to the public. Hall, Marcia B. After Raphael Painting in Central Italy in the Sixteenth Century. Cambridge: Cambridge University Press, 1999, p. 189.
The visual dialogic exchanges between these three frontispieces goes beyond artistic and anatomical rivalries to pose a paragone between art and science, image and text, different modes of producing and framing knowledge. It is Calcar’s provocateur author portrait of Vesalius in the Fabrica [Figure 14] that initiates this exchange. Vesalius’ portrait in the Fabrica pushes the conceit of the skilled hand to its limits. The Fabrica, citing Galen’s *De usu partium*, a work Vesalius translated, devotes more attention to the hand’s musculature than to any other subject.\(^{87}\) The hands Galen dissected and described were an ape’s.\(^{88}\) For Vesalius, anatomical knowledge required human dissection. In his author portrait Vesalius’ thumb and index finger interpenetrate the tendons of an upright cadaver’s fingers – the site of the hand’s apprehension; its ability to grasp and know. In this extraordinary image we witness Vesalius in the act of grasping, apprehending, knowing.

Vesalius’ disproportionately large head, surrounded by a nimbus, misshapen fingers entangled in the Christ-like figure’s tendons, and unnerving gaze are intended to produce a state of *aporia*, or bafflement, by juxtaposing figures from different iconographic systems, in this case science and religion. The Ionic column\(^ {89}\) behind the Christ-like figure referencing Christ’s

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\(^{89}\) The column in Vesalius artist’s portrait is also an artistic signature, Calcar is credited with introducing the column into portraiture in 1540 in his much admired portrait of *Melchoir von Brauweiler*, Palluchini, *Tiziano*, Florence: G.C, Sansoni, 1969, p. 215, the use of a column is a device much copied in Titian’s portraiture practice and an example of an inversion of the master and pupil relationship.
flagellation opposes the dissection table’s inscription “quickly, pleasantly, swiftly” an exhortation to the physician to heal, not hurt the patient. The care lavished on the details of the instruments, tendons, muscles, skin and fabrics – the curtain exhibiting its interior, exterior and fringe mimicking the cadaver’s flayed flesh – evoke a vision of preternatural materiality. Vesalius constructs, rather than deconstructs.

Vesalius’ author portrait is, I suggest, a transgressive transformation of Michelangelo’s Creation of Adam, [Figure 15] utilizing the typology of Christ as the new Adam and the scientist as God. In the Creation of Adam God reaches out to Adam making the creation gesture. In his author portrait Vesalius’ gaze commands the viewer to witness him unravel the body’s mysteries, tap into the divine, attributing to himself a God-like knowledge. De re Anatomica’s frontispiece responds to Vesalius’ author portrait by casting Michelangelo in the role of God and the cadaver in the role of Adam [Figure 16]. The frescoed hands in the Creation of Adam – the hand of God reaching toward the inert hand of Adam – the ultimate representation of the hand’s power – are echoed in De re Anatomica’s frontispiece by the cadaver’s outstretched arm, its extended hand and pointing finger. Michelangelo’s hand gestures mimic God’s.

Michelangelo’s presence in De re Anatomica’s frontispiece also makes claims for Columbo’s life-restoring powers as a physician. Unlike Vesalius, whose focus up to the publication of the Fabrica was solely on anatomical research, Columbo had a well-established

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90 I am indebted to Joseph Monteyne, Professor, Department of Art Theory, Theory and Visual Art, U.B.C. for drawing this comparison to my attention.

91 Park, [n. 4], p. 215.
practice as a physician with an enviable patient roster. Michelangelo publically credited Columbo with saving his life after surviving a serious urolithiasis episode, an intervention that added fourteen productive years to his life. Michelangelo’s presence in the frontispiece, his very existence, is a tribute to medical science, to Columbo’s regenerative hand.

_De re Anatomica’s_ putto also emblematizes Columbo’s major medical contribution to anatomical science – his collaboration with Valverde to describe pulmonary circulation. _Historia’s_ description of pulmonary circulation prompted Vesalius to revise his own description in the _Fabrica’s_ second edition. Putti, as spiritelli, or spirits, were understood to have an essential physiological function in the Greek pneumatic school of medicine transmitted by Galen. Ancient, medieval and early modern medical theory understood spirits to be breathed in from the air where they mixed with blood in the veins and arteries to carry life-sustaining nutrients. In the frontispiece’s visual rhetoric the putto, occupying the privileged center foreground, confers God-like powers of generation on both Michelangelo and Columbo. In

92 Carlino, [n. 18], p. 64.

93 Tubbs, [n. 81], p. 86.


95 But see Dillon, [n. 9], pp. 245 – 250 for an excellent historiography of Columbo and Valverde’s “discovery” of pulmonary circulation.

96 Ibid.


98 Ibid.
contrast, the Fabrica’s frontispiece granted the anatomist primacy – its two artists are relegated to its upper register. In De re Anatomica’s frontispiece Michelangelo, depicted in an elegant full-length portrait, is claiming the foreground as he moves toward the center.

The representational strategies the Fabrica deploys in its anatomical illustrations elaborate on the theme of figure and frame initiated by the Michelangelesque ignudo clinging to a column in the frontispiece. The Fabrica’s use of antique sculptural fragments as repositories for its visceral figures was much admired by contemporaries and persisted as a template for viscera figures for centuries [Figure 17].

Glenn Harcourt theorizes the sculptural fragment’s multiple functions include effacing the connection between the representation of viscera and the disgusting practice of dissection, mobilizing the authority of antique culture to validate a new science and describe a normative representation, a canon, for the comparison of the illustrated viscera with those of other bodies. Sachiko Kusukawa refers to the sculptural fragments as a “draughtsman’s conceit” agreeing with Harcourt that the convention conveys antique authority and canonicity, allowing the general rather than the particular body to be described.

I propose that in addition to anatomical or teleological reasons for using a Belvedere-like sculptural

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fragment there was a specific art theoretical aim – Calcar deployed sculptural fragments as frames for his viscera figures as an ironic *paragone* to expose the limits of sculpture. As earlier observed, the *Fabrica* adapted Michelangelo’s panoramic drawing technique utilized in the Sistine ceiling’s band of *ignudi*. The *Fabrica* both exploits Michelangelo’s sculptural drawing techniques and critiques sculpture’s limitations. Sculpture, as was often rehearsed in contemporary art theory, was inferior in its representational capabilities to painting due to its inability to depict storms, times of day or night, and landscape.¹⁰² Those arguing for sculpture’s superiority referenced its ability to represent the body’s surface contours, to engage the tactile imagination, and to show the body in three dimensions. Using sculptural fragments to represent the body’s interior structures critiques sculpture’s inability to represent the interiors of objects.

Further, I suggest here that Calcar deliberately selected this particular sculptural fragment as a frame because of the well-known and intimate association between the Belvedere torso and Michelangelo’s art practice. As David Summers observes, the Belevedere torso, although exhumed in the 1430s, only became well known when Michelangelo “made it a foundation stone for a new embellished classical style.”¹⁰³ The Belvedere torso was understood by Michelangelo’s contemporaries and by Michelangelo scholars to have operated as both inspiration and template

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¹⁰³ Summers, [n. 29], p. 248.
for the Sistine ceiling’s ignudi. Thus, the Fabrica’s viscera figures acknowledge the Titian workshop’s debt to Michelangelo while simultaneously exposing sculpture’s representational limits.

Not surprisingly, the Historia’s illustrations of viscera figures respond to and elaborate upon the Fabrica’s paragone. The Fabrica’s Belvedere torso-like sculptural fragments are “clothed” in the Historia in Roman cuirasses [Figure 18]. Historia’s cuirass-clad viscera figures have both baffled and irritated art historians as evidence of the period’s “manneristic taste.” In my view they are a penetrating riposte to Calcar’s paragone. The source for the Roman cuirass Becerra uses to clothe his sculptural fragment is, I argue, Michelangelo’s sculpture of Giuliano Medici in the Medici Chapel [Figure 19].

Typically, a cuirass is a piece of armor designed to protect the body by covering the chest and abdomen with an impenetrable shield. Michelangelo’s cuirass for Giuliano does the opposite – it dematerializes – leaving only its shoulder strapping, sleeves and pendant mask to frame Giuliano’s bared chest and abdomen. Giuliano’s chiseled chest and abdomen, carved to “excite the tactile imagination,” produces a facture only sculpture can achieve. Giuliano Medici’s marble flesh, contrary to Calcar’s paragone on sculpture’s limits, and unlike Titian’s painted flesh in his Venuses and Danaes, reveals, rather than conceals, the body’s anatomy. Becerra’s

104 Kusukawa, [n. 101], p. 216, FN 79; De Tolnay, Charles. Michelangelo, Volume 2, The Sistine Ceiling, p. 10; Brothers, [n. 22], p. 80.


“clothed” sculptural fragment extends the dialogue on the figure and the frame, revealing the layers of artifice inherent in the Fabrica’s mode of anatomical illustration.

Becerra deployed the concetto of the cuirass-clad sculptural fragment again in De re Anatomica scaling it down and placing it in an illusionistic niche in the frontispiece’s top right corner [Figure 20]. Re-contextualized, the cuirass-clad sculptural fragment in De re Anatomica’s frontispiece – a space with architectural features reminiscent of the Medici Chapel – accretes the layers of meanings and associations from its previous incarnations. The sculptural fragment links these three anatomical works by operating as a meta-emblem for the dialogue on the paragone between sculpture and painting – an exchange between the past and present – and on art practice’s contribution to anatomical illustration. The sculptural fragment embodies a historiography of art practice connecting the exhumed classical Belvedere torso: Michelangelo’s series of Sistine ignudi; Fabrica’s adaptation of Michelangelo’s panoramic drawing technique in its mycological and osteological illustrations; the Fabrica’s and the Historia’s viscera figures; and the Medici Chapel’s architectural, figural, and ornamental program. Becerra’s en-niched sculptural fragment activates these chains of associations in De re Anatomica’s frontispiece. Like the en-niched female statue that references Historia’s illustrations of female reproductive anatomy, the male sculptural fragment references the illustrations from both the Fabrica’s and Historia’s texts.

The emplacement of these sculptural fragments within the frontispiece’s illusionistic architectural background is structured to reinforce the Titian-Michelangelo paregone. Behind the figures involved in the anatomy lesson a niche within the illusionistic apse holds a statue of a cloaked figure, arms clasped across his abdomen and chin out thrust. This figure, positioned behind Michelangelo’s head, deploys the visual conventions of Dante’s portraits in Raphael’s
Stanza della Segnatura’s *Disputa* and Giotto’s earlier portrait in Padua’s Scrovegni Chapel. Dante, a man turned into *uomo di marmo*, (a man of marble), by his beloved, a captive in stone, is a theme that Michelangelo returned to again and again in his poetry.\(^{107}\) Michelangelo’s poetry identified his own artistic trajectory with Dante’s. Contemporary art theorist Benedetto Varchi likened the epic grandeur of the Medici Chapel to Dante’s poetry, and by the mid-sixteenth century it was conventional to compare Michelangelo’s art with Dante’s poetry.\(^{108}\) The inclusion of Dante in the frontispiece serves to visually reference Michelangelo’s multiple talents – painter, sculptor, architect and poet – contrasting his wide ranging accomplishments with Titian whose only claim to genius was painting.

*De re Anatomica’s* anatomy lesson, conducted on an altar within a space resembling Michelangelo’s austere Medici Chapel – a House of the Dead; its ornamental and figural program interpreted by Michelangelo’s contemporaries as a *momento mori*\(^{109}\) – is an apt setting for Columbo’s posthumous portrait and a meditation on anatomy. The frontispiece’s composite pilasters, garlands, blank wall tablets, en-niched statues, and the opposition between the recumbent figure and the vertical figures quote from Michelangelo’s Medici Chapel [Figure 21]. The Medici Chapel’s seven sculptures in Michelangelo’s hand in various attitudes – males and

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\(^{109}\) De Tornay, [n. 108], p. 61.
females, mortals and divines, clothed and nude – attracted artists who travelled to Florence to copy Michelangelo’s work as a model for their own. It was Vasari who referred to the Medici Chapel in his correspondence as a “School of the Arts” and he, as well as other Florentine artists, received commissions to copy the Medici Chapel’s sculptures, producing highly finished drawings and exchanging or selling presentation copies. For Becerra the Medici Chapel was a school of the arts; his architectural drawings and frescoes executed after his return to Spain in 1557-1558 allude to Michelangelo’s Medici Chapel sculptures.

Becerra’s study of the Italian masters likely included Raphael’s 1509 fresco, School of Athens in the Stanza della Segnatura located in the Vatican near the Sistine Chapel, where Becerra is known to have made figure studies from the Last Judgment. Like the Fabrica’s and De re Anatomia’s frontispieces, the School of Athens embeds portraits of contemporary artists, including Raphael’s self portrait and portraits of Perugino and Michelangelo, and frames its subjects within a distinctive architectural setting thematizing the figure and the frame. De re Anatomica’s frontispiece proposes a School of Florence – a confluence of art and science – a synthesis of Raphael, Michelangelo and Titian’s visual styles, complete with a young seated artist seemingly poised to copy from Michelangelo’s works in the Medici Chapel. The pictorial


111 Boubli, [n. 35], p. 220; McDonald, [n. 33], p. 73.

handling of the seated artist and the portrait of Michelangelo in the frontispiece – their
relationship to each other, position, posture, appearance, and attributes – constitutes a treatise on
mid-sixteenth century art theoretical concerns. For example, the artist sitting on the floor is
associated with the low status of the barber-surgeons under the dissection table in *Fabrica’s*
frontispiece. The sitting artist’s resemblance to Calcar’s portrait in the *Fabrica’s* frontispiece
[Figure 22], I argue, constructs him as Titian’s representative,\(^{113}\) contrasting him with
Michelangelo towering above in a commanding pose. The compositional structure of *De re
Anatomica’s* frontispiece supports this identification. On the frontispiece’s right side
Michelangelo’s figure is in close proximity to his friend and physician Columbo and aligned
with his poetic equivalent, Dante. En-niched behind Michelangelo’s head is the female sculpture
who references Michelangelo’s female nudes including his sculpture *Night*, and above her is the
sculptural fragment - referencing both the Belvedere sculptural fragment and the statue of
*Giuliano Medici* – in the same orientation as *Night* and *Giuliano Medici* within the Medici
Chapel. Together with the references to Michelangelo’s work in other media the frontispiece is a
*summa* of Michelangelo’s artistic production.

The seated artist’s emplacement within the frontispiece’s pictorial field connects him
with the figure of Vesalius and the *Fabrica* opened on Vesalius’ lap to a representation of one of
the *Fabrica’s* muscle man illustrations whose pose was identified by Erwin Panofsky as a quote

\(^{113}\) See Dillon [n. 9], pp. 228 ff, for an interpretation of the sitting artist’s identity that is based on
a textual reference in Condivi [n. 44, p. 142] to his attendance at a dissection with
Michelangelo. Dillon suggests the frontispiece has a lecture hall setting, and that the image
in the opened text is Becerra’s flayed man from the *Historia* without the skin he holds.
from a Titian painting. Directly above the figures of Calcar and Vesalius, an empty niche horizontally aligned with the niche containing the female sculpture on Michelangelo’s side of the frontispiece suggests the Titian workshop’s lack of a sculptural practice. In the register above the empty niche a representation of a shield is embossed with an image of Medusa. This simple image emblematizes Titian’s painting practice.

The en-niched object vertically aligned above Calcar and Vesalius is, I argue, a reference to Titian’s Perseus and Andromeda, one of a cycle of mythological paintings commissioned by Phillip II of Spain. Titian’s correspondence referred to this cycle of paintings as “poesie,” pictorial poems, invoking the paregone between painting and poetry and the past and present. The posia, a genre particularly associated with Titian and Venetian aesthetic sensibilities, came into fashion when Ovid’s Metamorphoses was published in Venice. In Ovid’s poem Perseus was aided in his challenge to obtain Medusa’s head by Athene’s gift of a highly polished shield. Perseus deploys the shield to reflect Medusa’s fatal gaze in order to decapitate her and then uses the imprint of her face on his shield to kill his enemies. The shield emblematizes the power of visual representation. The story of Perseus and Andromeda’s inherent art-historical content made


As Perseus was about to rescue the enchained Andromeda he described her as a work of art, a sculpture, initiating an extended pictorial \textit{paregone} on painting’s ability to imitate and surpass sculpture.\footnote{Ovid quoted in Scott, [n. 116], p. 251.}

Titian’s cycle of mythological paintings for Philip II – paintings engaging in the “sensorial play of sight and touch”\footnote{Jacobs, [n. 116], pp. 54 – 55.} – rehearse the elements of the Michelangelo-Titian \textit{paregone} – the depiction of subjects from antiquity, the display of female nudes from multiple angles, sensuous nudes opposed to muscular nudes, and Titian’s depiction of feminine male beauty in \textit{Venus and Adonis} inverting Michelangelo’s preoccupation with the muscular female nude.\footnote{Dolce refers to Adonis’ flesh as of “an extreme delicacy… a certain handsome beauty which would have its share of femininity.” Dolce’s letter to Alessandro Contarini in Roskill, [n. 58], p. 213.}

Thus, Perseus’ shield is positioned opposite the sculptural Belvedere/Giuliano Medici fragment and in opposition to the nude female sculpture.

It is well known that in his 1550 \textit{Lives of the Artists} Vasari revered the Tuscan-Roman artists, esteemed Tuscan-Roman \textit{disegno} above Venetian \textit{colorito}; and venerated Michelangelo as the apogee of the Renaissance painter, sculptor and architect.\footnote{Vasari, [n. 44], pp. 233 – 290.} Vasari’s first edition of the \textit{Lives of the Artists} ignored Venetian artists. A brief life of Titian in Vasari’s second edition quotes Sebastiano del Piombo’s view that Titian might have done “stupendous things” if he had...
only “studied drawing and seen work by Raphael and Michelangelo along with the ancient statues.”

Ludovico Dolce’s *Dialogo della pittura* published in Venice in 1557 redressed Vasari’s disregard by naming Titian the greatest living painter, Raphael’s true artistic heir, and alleging that Michelangelo had acknowledged Titian as “alone deserving the title of painter.”

In *De re Anatomica’s* frontispiece Becerra visually rebuts Dolce’s claims for Titian’s pre-eminence by foregrounding Michelangelo’s generative hand, touched by divine inspiration, given God-like creative powers, surrounded by a pastiche of the celebrated works originating with his hand and situated in his Medici Chapel, the School of the Arts. Becerra upends Dolce’s criticism of Michelangelo’s temperament and manner by projecting Raphael’s *School of Athens* portrait of a morose, brooding Michelangelo [Figure 23] onto Titian’s representative, Calcar. Raphael’s portrait of Michelangelo in the *School of Athens* – seated, pen hovering above paper, a short, rustic, laborer’s tunic exposing muscular knees and deeply shaded face, emblematic of melancholy - becomes Calcar. As Ingrid Rowland observes Raphael adopted Michelangelo’s own visual idiom in his portrait of Michelangelo. Thus, Becerra reverses

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121 Vasari, [n. 44], p. 294.

122 Roskill, [n. 58], p. 109.


Raphael’s portrait of Michelangelo, transforming Michelangelo into an elegant Raphaelesque artist-courtier, knees decorously covered by a splendid patrician robe.

Nuancing the contemporary textual discourses on Venetian sanguinity versus Tuscan melancholy, the *De re Anatomica*’s frontispiece takes up the theme of melancholia’s duality by assigning Calcar – face shaded, gaze transfixed, hand paralyzed above his blank tablet – all of melancholia’s afflictions. Michelangelo, a self-described melancholic whose private correspondence frequently referred to his depression: “perche usci um pocho del mio malinchnonico, o vero del mio pazzo” (I came a little out of my melancholy or rather madness)\(^\text{126}\) is awarded all of melancholy’s benefits. Chosen by the putto, he is literally touched by divine inspiration.

In contrast, Calcar’s blank tablet together with the text held by Vesalius – opened to one of the *Fabrica*’s mycological illustrations quoted from Titian’s history painting and portrait – points to the complexity of contemporary debates on visual representation. Marcia Hall identifies a shift in art theory in the mid-sixteenth century away from the practice of drawing from life toward copying from ancient and contemporary masters.\(^\text{127}\) As we have seen, this shift began much earlier in art practice with Michelangelo’s use of the Belvedere torso as a touchstone for his Sistine *ignudi* and Titian’s transpositions of poses from Michelangelo’s figures in his painting practice. Drawing from life, copying objects as they appear, became associated with


\[127\] Hall, [n. 86], p. 159.
mechanical ability utilizing only the artist’s lowest mental faculties.\textsuperscript{128} In the second half of the sixteenth century Vasari, seeking to elevate the artist’s stature, praised the superiority of the artist’s \textit{concetto}, or idea, over drawing from life; suggesting that artists should accumulate an archive of drawings enabling them “to depict everything in the natural world from memory.”\textsuperscript{129} Similarly, the art theorist Vincenzo Danti advocated imitating art rather than nature to achieve artistic perfection.\textsuperscript{130}

Accordingly, mid-sixteenth century artists created complex montages by overlaying serial quotations from classical antiquity, contemporary Masters, and their own works;\textsuperscript{131} thereby elevating pastiche – a term with undeservedly negative connotations – into a new genre. Becerra’s \textit{Historia} and \textit{De re Anatomica} frontispieces’ innovative re-combinations of recognizable quotes from Michelangelo, Titian, Raphael, and his own work, demonstrate pastiche’s ability to dilate into a kaleidoscope of interpretive possibilities.

Raphael, Michelangelo, and Titian not only stole figures from their predecessors and contemporaries, they also appropriated other artist’s compositional strategies and drawing techniques. Even Vasari acknowledged that Michelangelo, who claimed through his authorized biographer Condivi to never copy a line of his own or others, utilized the work of his predecessors and contemporaries:

\textsuperscript{128} Quiviger, [n. 56], p. 55.


\textsuperscript{130} Vincenzo Danti quoted in Poseq, [n. 53], p. 118.

\textsuperscript{131} Hall, [n. 86], p. 159.
Michelangelo was a man of tenacious and profound memory, so that, on seeing the works of others only once, he remembered them perfectly, and could avail himself of them in such a manner that scarcely anyone has ever noticed it…”  

The *Fabrica, Historia* and *De re Anatomica*, in keeping with the art theory and practice of their day and the complex presentational demands imposed by the Vesalian paradigm make a virtue of appropriation, recombination and pastiche.

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Chapter 3: Conclusion

The coalescence of visual techniques from diverse visual conventions and genres generated the elegant animated cadavers that pose and strut across the Fabrica’s and the Historia’s pages. The Fabrica’s and the Historia’s osteological, mycological and visceral figure’s fusion of technically precise, accurate visual representations of anatomical structures framed within classical, idealized bodies created a template for anatomical illustration that persisted for centuries. One of the multiple threads of the visual dialogic exchanges in these frontispieces and illustrations provide a historiography of anatomical illustration tracing the evolution of anatomical science’s visual paradigm. The Fabrica’s ambitious diverse functions – illustrating anatomy for physicians, anatomists and artists – required a polyglot visual vocabulary combining fine art and technical drawing within an art practice of dismemberment and reassembly whose visual culture celebrated the body as the pinnacle of creation, the temple of the soul, and the measure of all things. As Thomas Laqueur has argued, albeit in a different context, ideology determines how we see the body. Anatomical science’s visual paradigm of dismembered and re-contextualized fragments – antique sculpture, poses, gestures, figures and compositions from contemporary works; and Michelangelo’s innovative panoramic drawing techniques – create destabilizing images that are at once familiar and uncanny. The frontispieces and anatomical illustrations examined in my thesis engage in an analysis of their own means of representation and its limitations. Becerra displays the graphical processes underpinning the visual representation of anatomical illustration. His cuirass-clad Belvedere torso with its almost endless chain of artistic references exposes its multiple layers of artistic artifice. Becerra’s Historia

133 Laqueur, [n. 38], p. 88 ff.
frontispiece - two youths hoisting aloft a sacrum bone – depicting the sacrum’s relationship to their interior and exterior bodies – emblematize the visual representation of anatomy. In addition to revealing how a visual paradigm for anatomical science was forged and analyzing their own means of reproduction these frontispieces and illustrations rejoice in their participation in and commentary upon the visual taste of the day – embedding puzzles, emblems, oppositional iconographic systems and an encoded visual vocabulary. The motif of revealing and concealing challenges decipherment while opening a portal into the mid-sixteenth century visual imagination.

Mobilizing a rich, condensed, visual vocabulary Gaspar Becerra’s De re Anatomica summarizes the dialogic exchanges in these three frontispieces and also responds to a visual conceit in Vesalius’s work, the Epitome. The Epitome, published after the Fabrica, provided a smaller, less expensive anatomical text for use by medical students. Perhaps it is the small text read intently by the student standing between Michelangelo and Columbo in De re Anatomica’s frontispiece. The Epitome’s most arresting illustration proposes Adam and Eve – drawn in the Titian’s workshop’s most refined visual style – as the parents of anatomical illustration [Figure 24]. As recounted earlier one of Titian’s earliest of a lifetime of borrowings, responses, and challenges to Michelangelo was his transposition of Michelangelo’s compositional relationship of Adam and Eve in his fresco in Padua’s Scuola del Santo. De re Anatomica responds to the Epitome’s visual claim that the Titian workshop should be credited with inventing anatomical science’s visual paradigm. Becerra proposes instead that anatomical science’s visual forebears are the images en-niched in the illusionistic architectural backdrop behind Michelangelo. The Belvedere torso-Giuliano Medici male sculptural fragment and the en-niched female sculpture resembling Night – oriented in the same relationship as their actual counterparts in the Medici
Chapel – the generative prototypes and touchstones of Michelangelo’s artistic practice – are the parents of anatomical science’s visual paradigm. As master of his own extended multiple pictorial concetti Becerra resolves the Michelangelo-Titian paregone. In De re Anatomica’s foreground the putto reaches out to clasp Michelangelo’s hand. Michelangelo responding with a gracious gesture of acknowledgement is awarded with four brushes for his mastery of the genres of painting, sculpture, architecture and poetry. Becerra acclaims Michelangelo the father of anatomical science’s visual paradigm, the sixteenth century’s foremost draughtsman, and the unrivaled genius of sixteenth century art.
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