

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

by

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in

THE FACULTY OF GRADUATE AND POSTDOCTORAL STUDIES
Fine Arts (Art History)

THE UNIVERSITY OF BRITISH COLUMBIA
(Vancouver)

August 2014

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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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Acknowledgements

I thank my supervisor Dr. Joseph Monteyne for introducing me to the visual representation of early modern science in his graduate seminar ‘The visual culture of knowledge: early modern art and science.’ My thesis grew out of the fascinating articles on the intersection of art and science we considered in that seminar. I am indebted to Dr. Monteyne for graciously but persistently pushing me in the right direction. I am very grateful to Dr. Carol Knively for her many helpful suggestions, patience, and guidance on my thesis. Dr. Maureen Ryan’s, energy, wit, and passion have served as an inspiration throughout my Master’s program.

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

¹ Schultz, Bernard. *Art and Anatomy in Renaissance Italy*. Ann Arbor: UMI Research Press, 1985, p. 103.

Historia de la composicion del cuorpo 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

² Galluzzi, Paolo. "Art and Artifice in the Depiction of Renaissance Machines." Lefevre, Wolfgang et al [Eds.] *The Power of Images in Early Modern Science*. 2003, pp. 55 ff.

³ Kornell, Monique. "The Study of the Human Machine Books of Anatomy for Artists." *The Ingenious Machine of Nature Four Centuries of Art and Anatomy*. Ottawa: National Gallery of Canada, 1996, p. 43.

⁴ Park, Katharine. "The Empire of Anatomy." *Secrets of Women, Gender, generation and the origins of human dissection*. Cambridge, Mass.: MIT Press, 2006, p. 240.

⁵ Nagel, Alexander and Pericolo, Lorenzo. "Unresolved Images: An Introduction to Aporia as an Analytical Category in the Interpretation of Early Modern Art." *Subject as Aporia In Early Modern Art*. Nagel, Alexander and Pericolo, Lorenzo [Eds.], Farnham, Surrey: Ashgate Publishing Limited, 2010, pp. 2- 3.

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*

⁶ Coppola, Edward D. "The Discovery of Pulmonary Circulation: A New Approach. *Bulletin of the History of Medicine*, 1957 (31) January, p. 49 - 50; Garrison, D. H. and Hast, M. H. "Andreas Vesalius on the Larynx and Hyoid Bone: An Annotated Translation From the 1543 and 1555 Editions of *De Humani Corporis Fabrica*." *Medical History*, 1993, Vol. 37, p. 9. Bylebyl, Jerome J. "Columbo Realdo." *Complete Dictionary of Scientific Biography*. Ency.com, 2008, pp. 1- 4.

⁷ Bylebyl, [n. 6], p. 2.

⁸ Stringer, Mark D. and Becker, Ines. "Columbo and the clitoris." *European Journal of Obstetrics & Gynecology and Reproductive Biology*. 151 (2110) p. 131; Moes, Robert J. and O'Malley, C.D. "Realdo Columbo: On Those Things Rarely Found in Anatomy." An Annotated Translation from the *De Re Anatomica*, 1559. *Bulletin of the History of Medicine*, Jan 1, 1960, Vol. 34, p. 509.

⁹ Dillon, Anne. *Michelangelo and the English Martyrs*. Farnham, Surrey: Ashgate Publishing Limited, 2012, p. 214, footnote 2; Choulant, Ludwig. *History and Bibliography of Anatomic Illustration*. Trans. Frank, Mortimer. New York: Schumans, 1945, p. 205.

Sapienza, moving to Rome in 1547.¹⁰ 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.¹¹ During his residence in Rome Valverde became the private physician of Spanish Arch-bishop Juan Alvarez da Toledo connecting him to an exclusive circle of expatriate Spanish intellectuals and artists¹²

While in Rome Valverde and Columbo collaborated on anatomical research to explicate pulmonary circulation.¹³ 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*.¹⁴ 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 1559.¹⁵

Vesalius’ revolution in anatomical practice is brought into focus by comparing the 1491 frontispiece of the first illustrated medical text, *Fascicolo 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.

¹² Cachon, Hipolito Rafael, *Michelangelism in Spanish Art of the Sixteenth Century*. Chicago: University of Chicago, 1995, p. 406 ; Dillon, [n. 9], pp. 213 – 223 and 253.

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 *Fascicolo* 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.¹⁶ 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.¹⁷ 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.¹⁸ 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

¹⁶ Thornton, John L. and Reeves, Carole. *Medical Book Illustration A Short History*. Cambridge: The Oleander Press, 1983, p. 44. Di Maio, pp. 188 – 189.

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 Fascicolo di Medicina of 1493: Medical Culture Through the Eyes of the Artist." Neurosurgery, Vol. 58, No. 1, January 2006, pp. 188 – 189.

¹⁸ Carlino, Andrea. *Books of the Body Anatomical Ritual and Renaissance Learning*. Trans. Tedeschi, John and Tedeschi, Anne C., Chicago and London: University of Chicago Press, 1999, pp. 39 -53.

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.

¹⁹ Cohn, Samuel K. *Cultures of Plague: Medical Thinking at the End of the Renaissance*. Oxford: Oxford University Press, 2010, p. 6.

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.”²⁰ Technological advances in paper manufacturing driven by printers’ demands for reliable paper supplies made paper less expensive and more available after 1490.²¹ The availability of inexpensive paper had profound consequences for artists.²² Unlike the previous media of wood, wax or slate tablets, paper did not have to be erased and re-used.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.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.”²⁵ The advent of inexpensive paper, the prevailing artistic preoccupation with the

²⁰ Esenstein, Elizabeth L. *The Printing Press As An Agent of Change*. Cambridge: Cambridge University Press, 1979, p. 53.

²¹ Landau, David ad Parshall, Peter. *The Renaissance Print 1470 – 1550*. New Haven and London: Yale University Press, 1994, pp. 13 – 21.

²² The link between paper supply and new drawing techniques and practices is from Cammy Brothers perceptive examination of readily available paper on Michelangelo’s drawing practice. Cammy Brothers analysis. Brothers, Cammy. *Michelangelo, Drawing, and the Invention of Architecture*. New Haven and London: Yale University Press, 2008, pp. 11 – 13.

²³ Brothers, [n. 22], pp. 11- 13.

²⁴ Ames- Lewis, Francis and Wright, Joanne. *Drawing In The Italian Renaissance Workshop*. Kent, Hurtwood Publishing Limited, 1983, p. 101. Brothers, [n. 22], pp. 11 - 13.

²⁵ Da Vinci, Leonardo. *Treatise on Painting*. Trans. McMahon, A.P. Princeton: Princeton University Press, 1956, p. 107.

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.²⁶ 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 1503.²⁷ I argue that the frontispieces of *Fabrica*, *Historia* and *De re Anatomica* acknowledge their debt to the artist who

²⁶ Ames-Lewis, [n. 24], pp. 99 – 101. Brothers, [n. 22], pp. 11 – 13.

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 Iohannes Calcar, a member of Titian's workshop adept at imitating Titian's style.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.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.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.³¹ Becerra assisted Vasari – Michelangelo's friend, biographer and ardent admirer – to paint

²⁸ For a summary of the scholarship on this issue see Tietze-Conrat, Erica. "Neglected Contemporary Sources Relating to Michelangelo and Titian." *The Art Bulletin*, Vol. 25 (2), June 1943, pp. 154 – 159.

²⁹ Summers, David. *Michelangelo and the Language of Art*, Princeton: Princeton University Press, 1981, p. 568, Endnote 7.

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

³¹ Herrlinger, Robert. *History of Medical Illustration From Antiquity to 1600*. Trans. Fulton-Smith, Graham. New York: Editions Medicina Rara Ltd., 1970, p. 123.

frescoes in the Palazzo de Cancelleria.³² 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.³³ Becerra's extant drawings include studies of figures from Michelangelo's *Last Judgment* in the *Sistine Chapel*.³⁴ 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.³⁵

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.³⁶ 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.

³³ McDonald, Mark. *Renaissance to Goya Prints and Drawing from Spain*. Burlington, Vt.: Lund Humphries, 2012, p. 71; Hansen, Morten Steen. *In Michelangelo's Mirror Perino Del Vaga, Danielle Volterra, Pellegrino Tibaldi*. University Park, Pennsylvania, 2013, p. 55.

³⁴ Steinberg, Leo. “The Corner of the “Last Judgment.” *Daedalus*, Vol. 109 (2), Spring, 1980, p. 213.

³⁵ D'Amelio, Anna. “Masters from the Iberian Peninsula.” Montani, Elena et al (Eds.) *Flemish Masters and Other Artists: Foreign Artists from the Heritage of the Fondo Edifici Di Calto Del Ministerio Dell' Interno*. Rome: L'erma di Bretschneider, 2008, p. 38; Boubli, Lizzie. “Michelangelo and Spain: on the dissemination of his draughtsmanship.” *Reactions to the Master: Michelangelo's Effect on Art and Artists in the Sixteenth Century*. Eds. Ames-Lewis, Francis and Joannides, Paul. Aldershot: Ashgate Publishing Limited, 2003, p. 220; Cachon, [n. 12], pp. 411 – 417.

³⁶ Carlino, [n. 18], p. 54.

“shameful profit.”³⁷ 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.

³⁷ Roberts, K.B. and Tomlinson, J.D.W. *The Fabric of the Body European Traditions of Anatomical Illustration*. Clarendon Press, Oxford, 1992, p. 211.

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.

³⁹ Choulant, Ludwig. *History and Bibliography of Anatomic Illustration*. Trans. Frank, Mortimer. New York: Schumans, 1945, p. 206; Herrlinger, [n. 31], p. 123.

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.”⁴⁰ Columbo, determined to surpass his rival Vesalius’s anatomical text, boasted he would correct both Galen’s and Vesalius’s errors.⁴¹ 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.⁴² The extent of Michelangelo’s intended assistance with Columbo’s anatomical treatise is unknown.⁴³ 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.⁴⁴

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

⁴¹ *Ibid.*

⁴² Coppola, [n. 6], p. 50; Summers, [n. 29] p.398. For a careful analysis of the assumptions underlying Michelangelo’s collaboration with Columbo see Hillard, Caroline S. “Michelangelo and Realdo Columbo: A Dialogue on Art and Anatomy.” *Italian Art, Society and Politics*. Deimling, Barbara *et al.*, Ed. Florence: Syracuse University in Florence, 2007, pp. 163 – 173.

⁴³ Coppola, [n. 6], p. 50.

⁴⁴ Vasari, Giorgio. *Lives of the Artists Biographies of the Most Eminent Architects, Painters and Sculptors of Italy*. Burroughs, Betty Ed. New York: Simon and Schuster, 1946, pp. 285 - 287; Condivi, Ascanio. *The Life of Michelangelo*. Ed. Wohl, H., Trans. Wohl, A.S., Baton Rouge, La,: Louisiana State University Press, 1976, p. 97; Summers, [n. 29], pp. 397 – 398.

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.⁴⁵ 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.⁴⁶ In 2012 Anne Dillon's *Michelangelo and the English Martyrs*⁴⁷ 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.

⁴⁶ Herrlinger, [n. 31], p. 167; Moes, Robert J. "Andreas Vesalius and the anatomy of the upper extremity." *Journal of Hand Surgery*, July 1976, Vol. 1(1), pp. 23 – 28; Stringer, Mark D. and Becker, Ines. "Columbo and the clitoris." *European Journal of Obstetrics & Gynecology and Reproductive Biology*. 151 (2110) p. 141; and Laqueur, Thomas. [n. 38], p. 75.

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 right⁴⁸ [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.

⁴⁹ Ibid, quoting from Wiegand, Willy. "Marginal Notes by the printer of the *Icones*." Lambert, Samuel W. *Three Vesalian Essays to Accompany the *Icones Anatomicae* of 1934*. New York: The MacMillan Company, 1952.

⁵⁰ Smith, Pamela. *The Body of the Artisan: art and experience in the scientific revolution*. Chicago: University of Chicago Press, 2004, pp. 36 – 38.

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"⁵¹ 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.⁵² 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.⁵³ 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*.

⁵³ Contemporary drawings show artists in the Sistine chapel copying Michelangelo's figures. Poseq, Avigdor W. G. "On Mirror Copying of the Sistine Vault and Mannerist 'Invenzioni.'" *Artibus et Historiae*, Vol. 23 (45), p. 136.

artists' copies and prints.⁵⁴ 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*.⁵⁵ 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.⁵⁶ 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.*

⁵⁵ Rasy, Elisabetta. "'I esteem nothing except my honor.' The Life of Titian." Villa, Giovanni Carlo Federico. Ed. *Titian*. Milano: Silvana Editoriale S.p. A., 2013, p. 31; Poseq, Avigdor W. G. "On Mirror Copying of the Sistine Vault and Mannerist 'Invenzioni.'" *Artibus et Historiae*, Vol. 23 (45), p. 123.

⁵⁶ Quiviger, Francois. "Renaissance Art Theories." *A Companion to Art Theory*. Ed. Smith, Paul and Wilde, Carolyn. Oxford: Blackwell Publishing Ltd., 2002, p. 56; Ames-Lewis, [n. 24], pp. 177 – 183.

sum of creation” was depicted in a classical, idealized mode.⁵⁷ 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.⁵⁸

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 1517.⁵⁹ 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.⁶⁰ 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

⁵⁷ Christiansen, Keith and Weppelmann, Stefan. *The Renaissance Portrait from Donatello to Bellini*. New Haven and London: Yale University Press, 2011, p. ix; Summers, [n. 29], p. 184.

⁵⁸ Dolce’s letter to Alessandro Contarini in Roskill, Mark W. *Dolce’s Aretino and Venetian Art Theory of the Cinquecento*. Toronto: University of Toronto Press, 2000, pp. 213 - 217. Pardo, Mary. “Artifice as Seduction in Titian.” *Sexuality and Gender in Early Modern Europe: Institutions, Texts, Images*. Cambridge: Cambridge University Press, 1993, pp. 58 – 59.

⁵⁹ Edgerton, Samuel Y. “The Renaissance Development of Scientific Illustration.” Shirley, John. W. and Hoeniger, F. David Eds. *Science and the Arts in the Renaissance*. Washington: Folger Books, 1985, p. 184.

⁶⁰ *Ibid.*, p. 169.

techniques, and “consistency of size, scale and line.⁶¹ 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.⁶² Techniques and visual conventions developed to illustrate functioning machines and their components were adapted to illustrate anatomical features in the *Fabrica* and the *Historia*.⁶³

As mentioned earlier both the *Fabrica* and the *Historia* were intended for an audience of physicians, anatomists and artists.⁶⁴ 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.⁶⁵ 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.

⁶⁵ Rubins, David K. *The Human Figure An Anatomy for Artists*. New York: The Viking Press, 1953, p. 1.

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, *difficula*.⁷⁰ The frontispiece thus argues for Becerra's mastery of *difficula*, 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.⁷¹ The Laurentian windows are blind, they resemble empty tabernacles, and are framed like doors but do not open⁷² [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.⁷³ 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.⁷⁴ 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.⁷⁵

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.

⁷² Brothers, Cammy. "Michelangelo, Architecture and the Stingray." Nagel, Alexander and Pericolo, Lorenzo, Eds. *Subject as Aporia in Early Modern Art*. Farnham, Surrey, Ashgate Publishing Limited, 2010, p. 166.

⁷³The 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.

⁷⁴ Sugar, O. "How the Sacrum got its name." *Journal of the American Medical Association*., April, 1987, Vol. 257 (15) p. 2061.

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.⁷⁶ *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, emblematised by the

⁷⁶ O'Malley, Charles Donald. *Andreas Vesalius of Brussels*. Berkely and Los Angeles: University of California Press, 1964, p. 157.

two nude youths whose bodies, cleaving to the blazon, curve outward to form the sacrum bone's triangular shape.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.⁷⁸ *De re Anatomica*'s obscures the male cadaver's genitals with Michelangelo's hand.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."⁸⁰ Conversely, Columbo, boldly claimed in his text to have "discovered" the clitoris and its sexual function.⁸¹ Thus, in *De re Anatomica*'s

⁷⁷ Park, Katharine. "The Criminal and the Saintly Body: Autopsy and Dissection in Renaissance Italy." *Renaissance Quarterly*, Vol. 47, No. 1 (Spring, 1994).

⁷⁸ Park, Katharine, [n. 4], p. 216.

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 *concreto*, or what Michelangelo referred to "as the compass of the eyes."

⁸⁰ Park, [n. 4], p. 219.

⁸¹ Tubbs, R. Shane. "Matteo Realdo Columbo The Anatomist and Surgeon." *American Surgery*, 2008, Vol. 74, p. 85; Stringer, Mark D. and Becker, Ines. "Columbo and the clitoris."

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*.⁸² 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.⁸³ Becerra not only illustrates a human

European Journal of Obstetrics & Gynecology and Reproductive Biology. 151 (2110) p. 132.

⁸² Meyer, A. W. and Wirt, Sheldon K. "The Amuscan Illustrations." *Bulletin of the History of Medicine*, 1943 (14), p. 668.

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.⁸⁴ 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".⁸⁵ 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,

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.”⁸⁶

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.

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 provocative 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 column⁸⁹ behind the Christ-like figure referencing Christ's

⁸⁷ Kemp, Martin. "The Handy Worke of the Incomprehensible Creator" Sherman, Claire Richter and Lukehart, Peter M. (Eds.) *Writing on Hands Memory and Knowledge in Early Modern Europe*. Seattle: University of Washington Press, 2001, pp. 24 – 25.

⁸⁸ Siraisi, Nancy G. "Vesalius and the Reading of Galen's Teleology." *Renaissance Quarterly*, Vol. 50, No. 1 (Spring, 1997), p. 29.

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.⁹⁰ 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,⁹¹ Columbo had a well-established

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.⁹² Michelangelo publically credited Columbo with saving his life after surviving a serious urolithiasis episode⁹³ - an intervention that added fourteen productive years to his life.⁹⁴ 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.⁹⁵ *Historia*'s description of pulmonary circulation prompted Vesalius to revise his own description in the *Fabrika*'s second edition.⁹⁶ Putti, as *spiritelli*, or spirits, were understood to have an essential physiological function in the Greek pneumatic school of medicine transmitted by Galen.⁹⁷ 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.⁹⁸ 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.

⁹⁴ Steinberg, Leo. "Michelangelo and the Doctors." *Bulletin of the History of Medicine*, Winter 1982, Vol. 56 (4), p. 545.

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

⁹⁶ *Ibid.*

⁹⁷ Dempsey, Charles. *Inventing the Renaissance Putto*. Chapel Hill & London: University of North Carolina Press, 2001, p. 41.

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].⁹⁹ 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.¹⁰⁰ 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.¹⁰¹ I propose that in addition to anatomical or teleological reasons for using a Belvedere-like sculptural

⁹⁹ The eighteenth century anatomist and artist John Bell bitterly resented the persistence of this visual convention referring to it as “monstrous, ludicrous and vicious.” He cites a list of distinguished anatomists who copied Vesalius visual convention of a Belvedere-like sculptural fragment for their viscera figures – “Fallopis, Esutachius, vidius, Pareus, Stehanus, Blanchardus, Veslingius, Riolanus, Verhein, Palfin, Dionis, and a thousand others.” Bell, John. [1763 – 1820] *Engravings Explaining the Anatomy of the Bones, Muscles and Joints*. Edinburgh: John Paterson, 1794, v – vii.

¹⁰⁰ Harcourt, Glenn, “Andreas Vesalius and the Anatomy of Antique Sculpture”, *Representations* 17 (Winter 1987), pp. 28 – 39.

¹⁰¹ Kusukawa, Sachiko. *Picturing the Book of Nature: Image, Text and Argument in the Sixteenth Century*. Chicago: University of Chicago Press, 2012, pp. 215 – 216 and 222.

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

¹⁰² Alberti, Leon Battista. *On Painting*. Trans. Grayson, Cecil. London: Penguin Books, 1991, p. 65; Castiglione, Baldassarre. Book of The Courtier, trans. Singer, Charles. 1959, Book 1, Chapter LII, p. 80 Of course Michelangelo’s sculptural program *Times of Day and Night* participate in this *paregone*.

¹⁰³ Summers, [n. 29], p. 248.

for the Sistine ceiling's *ignudi*.¹⁰⁴ 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."¹⁰⁵ 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,"¹⁰⁶ 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.

¹⁰⁵ Meyer, A. W. and Wirt, Sheldon K. "The Amuscan Illustrations." *Bulletin of the History of Medicine*, 1943 (14), p. 677; Herrlinger, [n. 31], p. 124.

¹⁰⁶ Hughes, Anthony. *Michelangelo*. London: Phaidon Press Limited, 1997, p. 196 – 197.

“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 *congetto* 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 *paregona*. 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

¹⁰⁷ Raphael's portrait of Dante in the Stanza della Segnatura's *Disputa*, shows a cloaked figure with a prominent chin as does Giotto's earlier portrait in the *Scrovegni* Chapel in Padua. Barolsky, Paul. *Why Mona Lisa Smiles*. University Park, PA: Penn State Press, 1991, p. 37.

¹⁰⁸ Barolsky, Paul. *Michelangelo and the Finger of God*. University of Georgia: Georgia Museum of Art, 2003, p. 10; Barolsky, Paul. "The Visionary Art of Michelangelo in the Light of Dante." *Dante Studies*, (1996), No. 114, p. 1; De Tolnay, Charles. *The Medici Chapel*. Princeton: Princeton University Press, 1948, p. 61.

¹⁰⁹ De Tolnay, [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.¹¹⁰ 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.¹¹¹

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.¹¹² *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

¹¹⁰ Letter of Vasari to Cosimo I, 16 February 1563, quoted in Rosenberg, Raphael. “The reproduction and publication of Michelangelo's Sacristy: drawings and prints by Franco, Salviati, Naldini and Cort.” *Reactions to the Master: Michelangelo's Effect on Art and Artists in the Sixteenth Century*. Eds. Ames-Lewis, Francis and Joannides, Paul. Aldershot: Ashgate Publishing Limited, 2003, p. 114.

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

¹¹² Hall, Marcia B. [Ed.] *Raphael's School of Athens*. Cambridge: Cambridge University Press, 1997, pp. 39 – 40.

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.¹¹⁴ 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.¹¹⁵ 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

¹¹⁴ Panofsky, Erwin. *Studies in Titian: Mostly Iconographic*. New York: New York University Press, 1969, p. 75.

¹¹⁵ Rosand, David. "Ut Pictura Poeta" Meaning in Titian's Poesie." *New Literary History*, Vol. 3, Spring 1972, p. 533 Michelangelo challenged the *posia* genre with his *Leda and the Swan* for Titian's patron the Duke Alfonso d'Este, a painting based on his sculpture *Night* a work Titian transformed into a painting in his *Danae* which Vasari recounts Michelangelo admiring for its *colorito* and disparaging for its draughtmanship. Jacobs, Fredrika H. "Aretino and Michelangelo, Dolce and Titian: *Femmina, Masculo, Grazia*." *The Art Bulletin*, Vol. 182, (1), March 2000, p. 51.

it a popular subject in fresco and painting cycles in sixteenth century Italy and Spain.¹¹⁶ As Perseus was about to rescue the enthralled Andromeda he described her as a work of art, a sculpture, initiating an extended pictorial *paregone* on painting's ability to imitate and surpass sculpture.¹¹⁷ Titian's cycle of mythological paintings for Philip II – paintings engaging in the “sensorial play of sight and touch”¹¹⁸ – rehearse the elements of the Michelangelo-Titian *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 *Venus and Adonis* inverting Michelangelo's preoccupation with the muscular female nude.¹¹⁹ 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 *Lives of the Artists* Vasari revered the Tuscan-Roman artists, esteemed Tuscan-Roman *disegno* above Venetian *colorito*; and venerated Michelangelo as the apogee of the Renaissance painter, sculptor and architect.¹²⁰ Vasari's first edition of the *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

¹¹⁶ Scott, John Beldon. “The Meaning of Perseus and Andromeda in the Farnese Gallery and on the Rubens House.” *Journal of the Warburg and Courtauld Institutes*, 1988, Vol. 51, p. 251.

¹¹⁷ Ovid quoted in Scott, [n. 116], p. 251.

¹¹⁸ Jacobs, [n. 116], pp. 54 – 55.

¹¹⁹ 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.

¹²⁰ Vasari, [n. 44], pp. 233 – 290.

only “studied drawing and seen work by Raphael and Michelangelo along with the ancient statues.”¹²¹ 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.”¹²²

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 manner¹²³ 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 melancholy¹²⁴ - becomes Calcar. As Ingrid Rowland observes Raphael adopted Michelangelo’s own visual idiom in his portrait of Michelangelo.¹²⁵ Thus, Becerra reverses

¹²¹ Vasari, [n. 44], p. 294.

¹²² Roskill, [n. 58], p. 109.

¹²³ *Ibid.*

¹²⁴ Karp, Diane. “Madness, Mania, Melancholy: The Artist as Observer.” *Philadelphia Museum of Art Bulletin*, 1984, Vol. 80, No. 342, p. 7.

¹²⁵ Rowland, Ingrid D. “The Vatican Stanze.” *The Cambridge Companion to Raphael*. Ed. Hall, Marcia B. Cambridge: Cambridge University Press, 2005, p. 107.

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 malinchonico, o vero del mio pazzo*” (I came a little out of my melancholy or rather madness)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.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

¹²⁶ Letter from Michelangelo to Sebastiano Pimbo, 1525, quoted in Britton, Piers. “Mio malinchonico, o vero mio pazzo”: Michelangelo, Vasari, and the Problem of Artists Melancholy in Sixteenth-Century Italy.” *Sixteenth Century Journal*, 34(3) 2009, pp. 662.

¹²⁷ Hall, [n. 86], p. 159.

mechanical ability utilizing only the artist's lowest mental faculties.¹²⁸ In the second half of the sixteenth century Vasari, seeking to elevate the artist's stature, praised the superiority of the artist's *congetto*, 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."¹²⁹ Similarly, the art theorist Vincenzo Danti advocated imitating art rather than nature to achieve artistic perfection.¹³⁰

Accordingly, mid-sixteenth century artists created complex montages by overlaying serial quotations from classical antiquity, contemporary Masters, and their own works;¹³¹ thereby elevating pastiche – a term with undeservedly negative connotations – into a new genre. Becerra's *Historia* and *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:

¹²⁸ Quiviger, [n. 56], p. 55.

¹²⁹ Vasari, [n.44], p. 205; Vasari, Giorgio. "Introduction: Of Painting." *On Technique*. Chapter 1 (15), 74, "The Nature of Materials of Design or Drawing," p. 205.

¹³⁰ Vincenzo Danti quoted in Poseq, [n. 53], p. 118.

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...”¹³²

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.

¹³² Vasari, Ed. Barocchi, 1966, Vol. 6, Trans. Du C de Vere, pp. 114 – 115. Condigi, [n. 44], p. 107.

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 viscera 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.¹³³ 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 – emblematic of 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.

Figures



Figure 1 *De re Anatomica* frontispiece

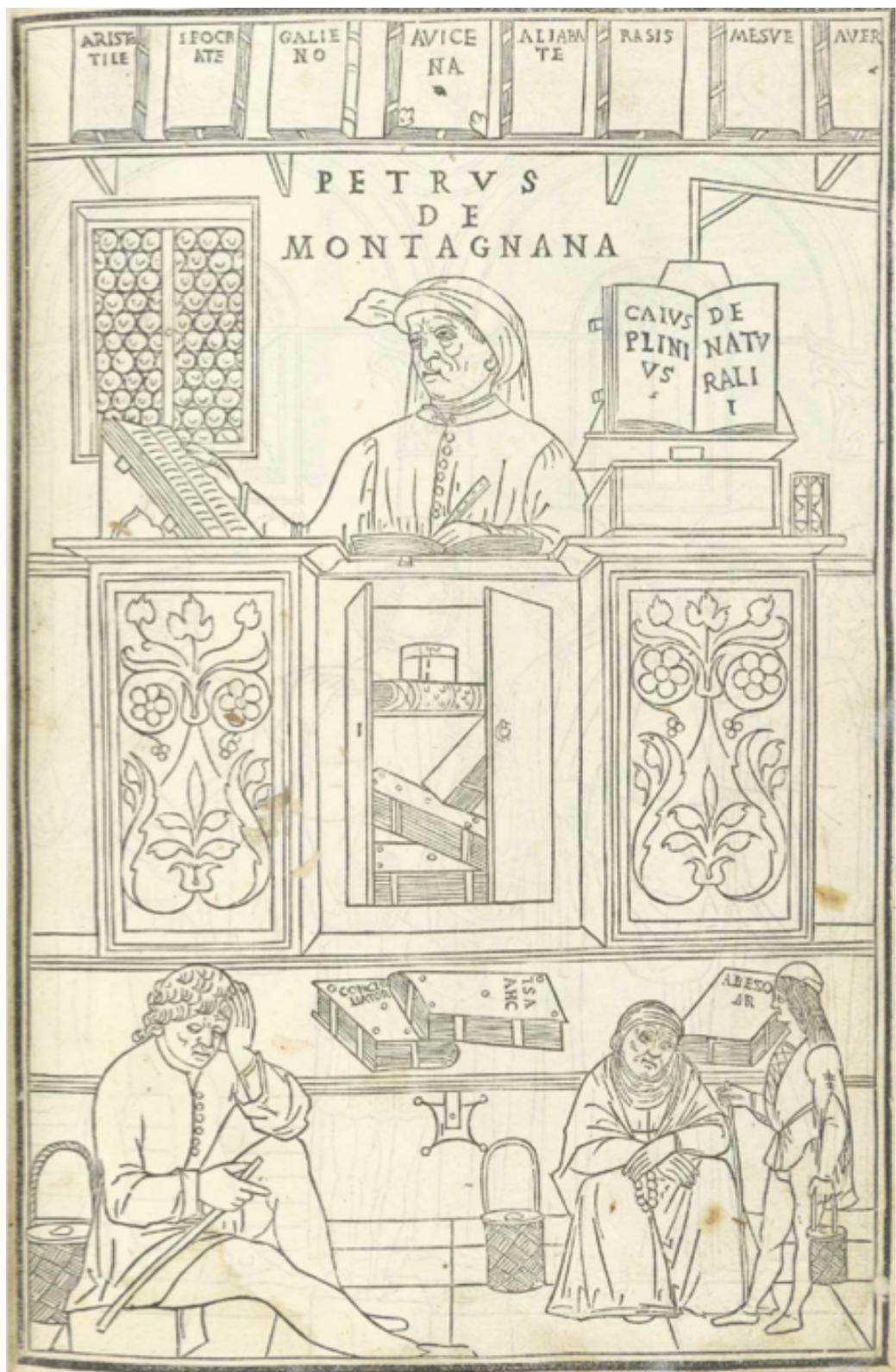


Figure 2 *Fasciculo Medicinae* frontispiece



Figure 3 *Fabrica* frontispice



Figure 4 Daniele Da Volterra, Portrait of Michelangelo



Figure 5 Detail, Upper register, *Fabrica* frontispiece



Figure 6 Four of Michelangelo's *ignudi*, Sistine Chapel ceiling

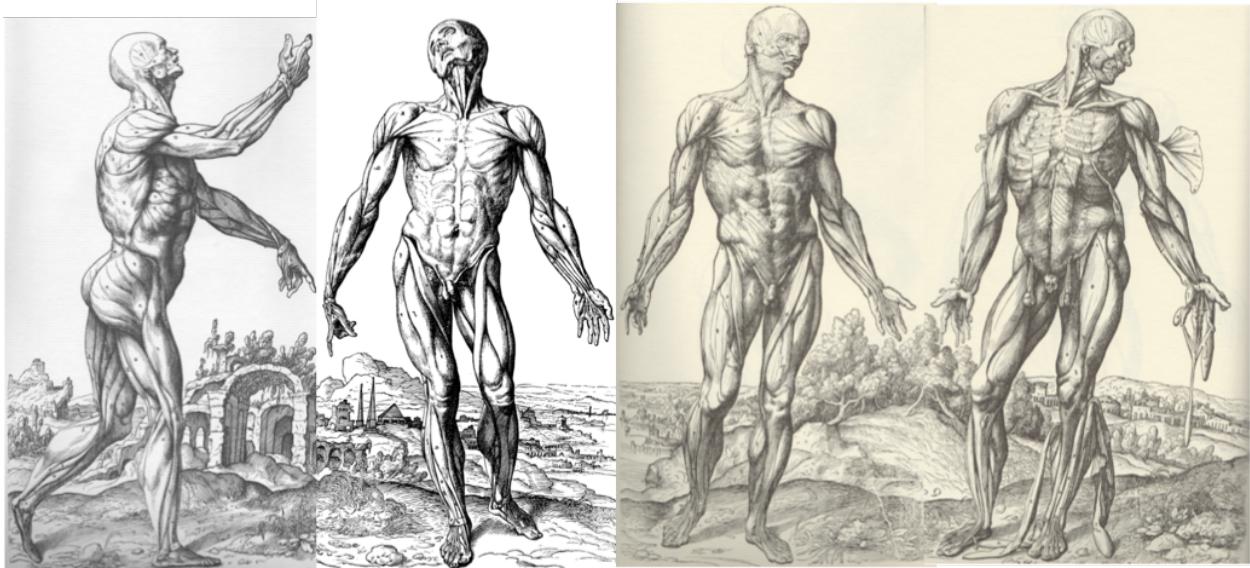


Figure 7 Four mycological figures, Vesalius' *Fabrica*



Figure 8 *Historia*'s frontispiece

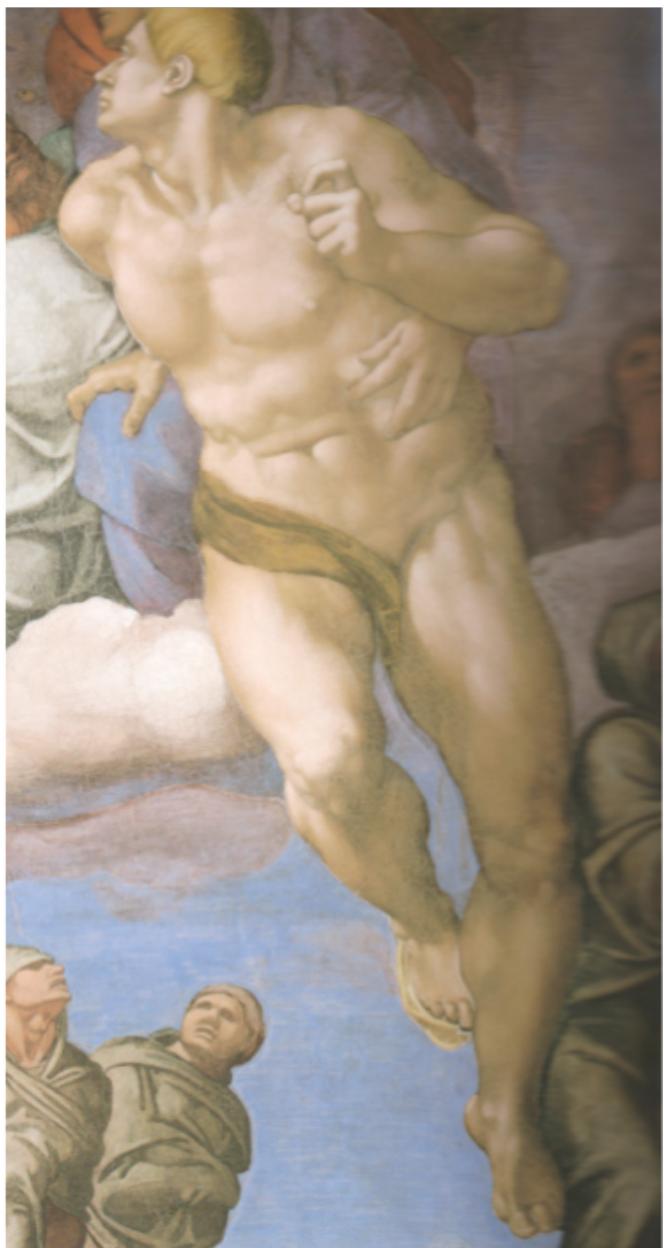
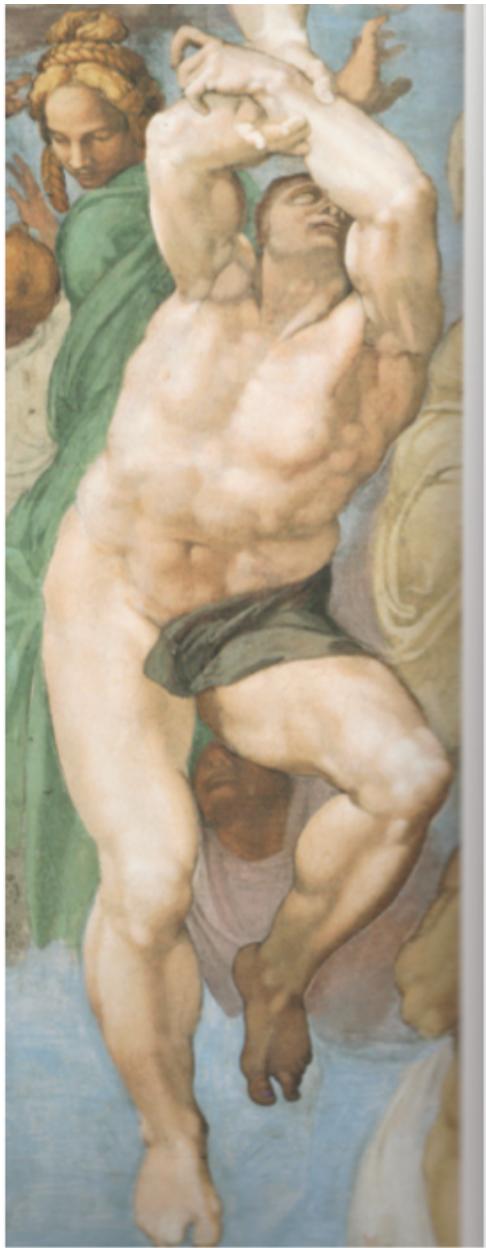


Figure 9 Soaring souls, detail, Michelangelo's *Last Judgement*

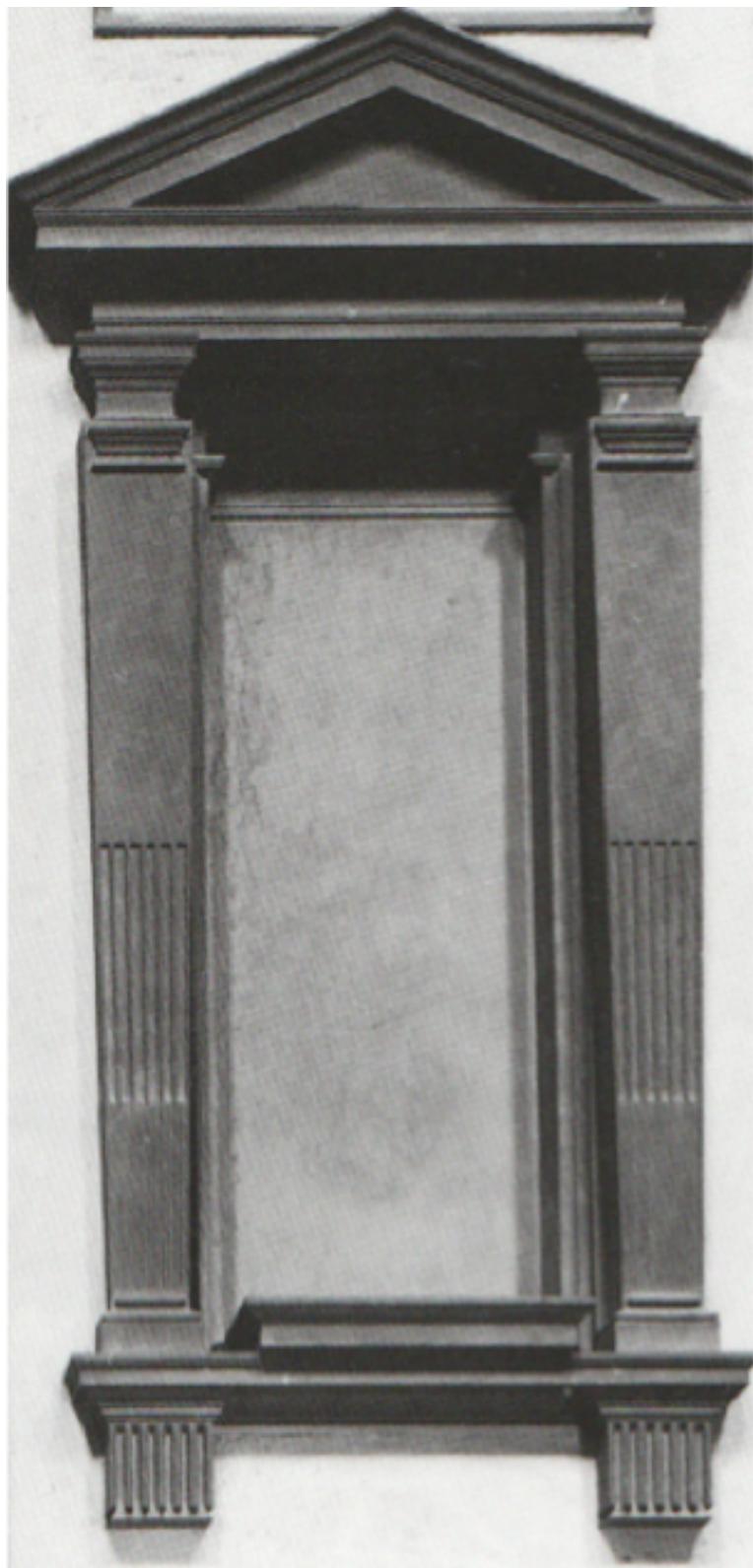


Figure 10 Blind window, Michelangelo's Laurentian Library

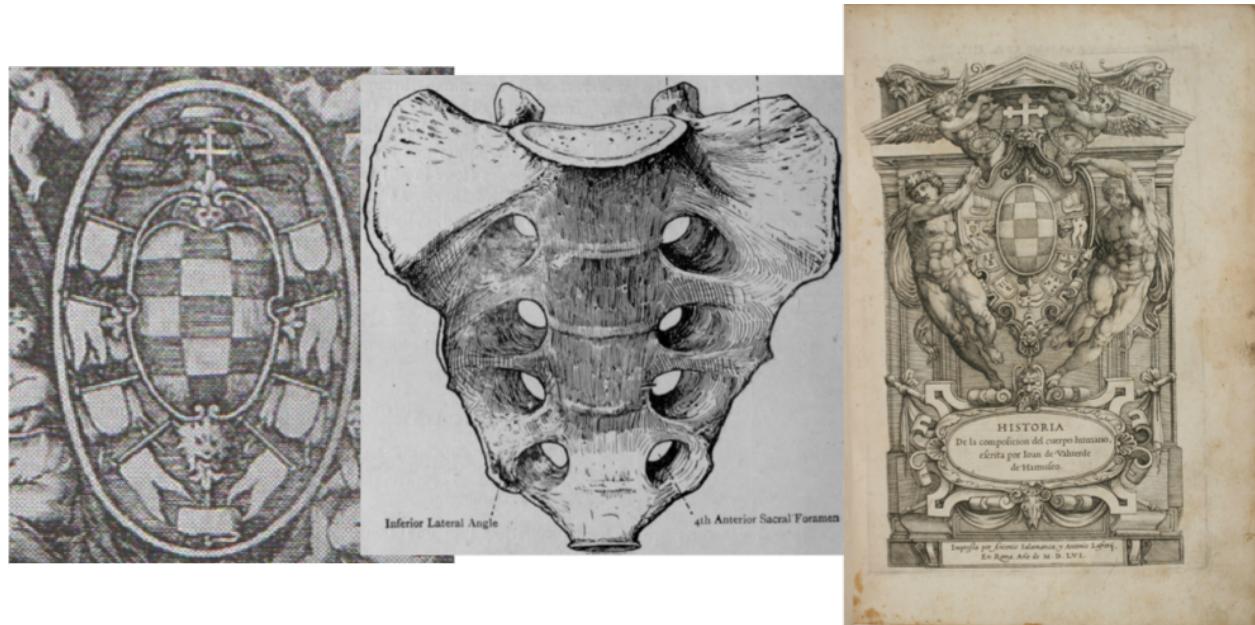


Figure 11 Juan Alvarez de Toledo's unmodified blazon, sacrum bone, *Historia* frontispiece



Figure 12 Detail, en-niched female nude, *De re Anatomica*

TAB. SESTA DEL LIB. TERCERO

FIG. XXX

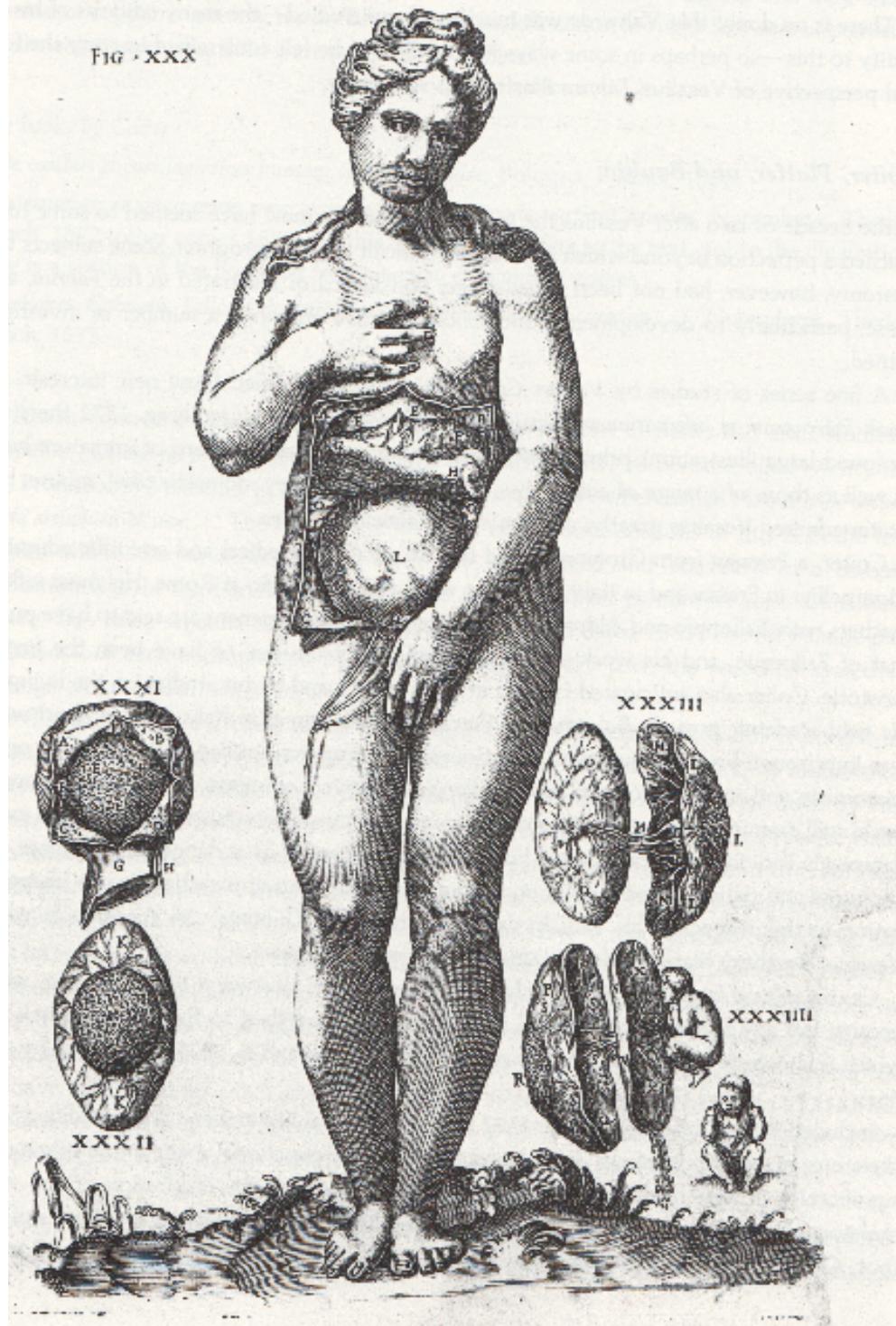


Figure 13 Venus Pudica, female reproductive anatomy, *Historia*

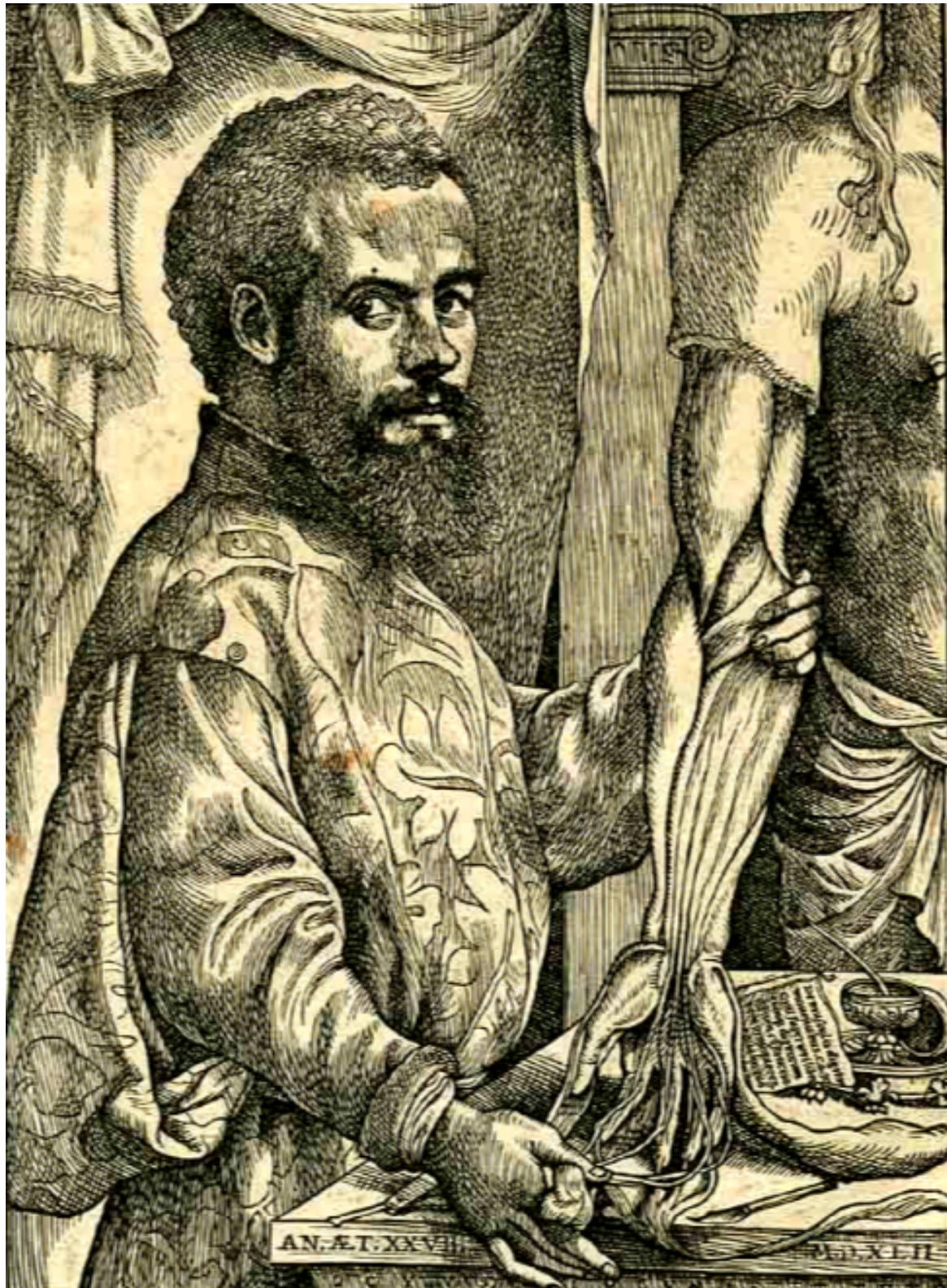


Figure 14 Vesalius author portrait, *Fabrica*



Figure 15 Michelangelo's *Creation of Adam*, Sistine Chapel ceiling



Figure 16 Comparison between cadaver's and Adam's arms and Michelangelo's and God's fingers

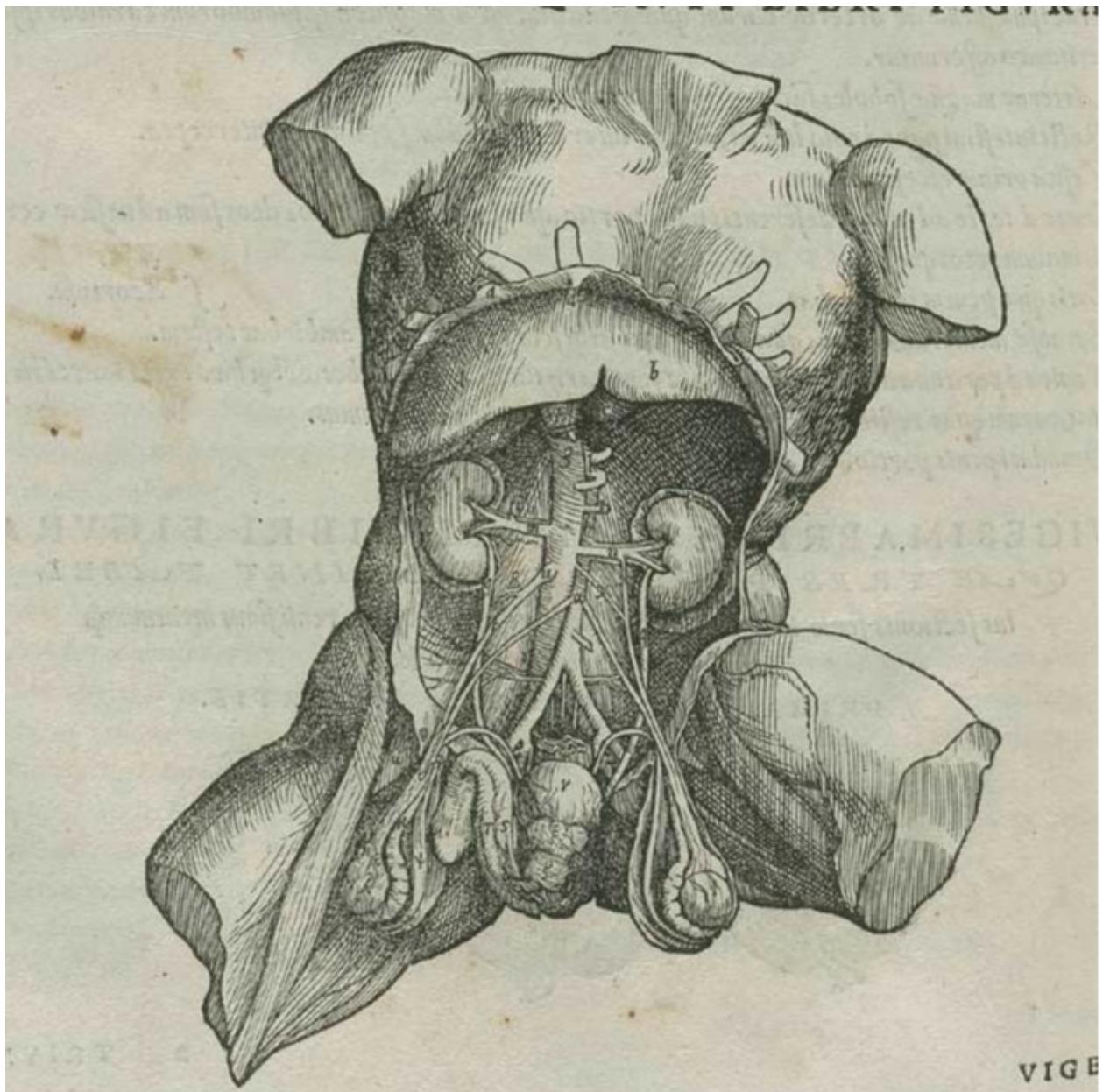


Figure 17 Viscera figure, *Fabrica*



Figure 18 Viscera figure, *Historia*



Figure 19 Giuliano de Medici, detail



Figure 20 Detail, en-niched sculptural fragment, *De re Anatomica* frontispiece

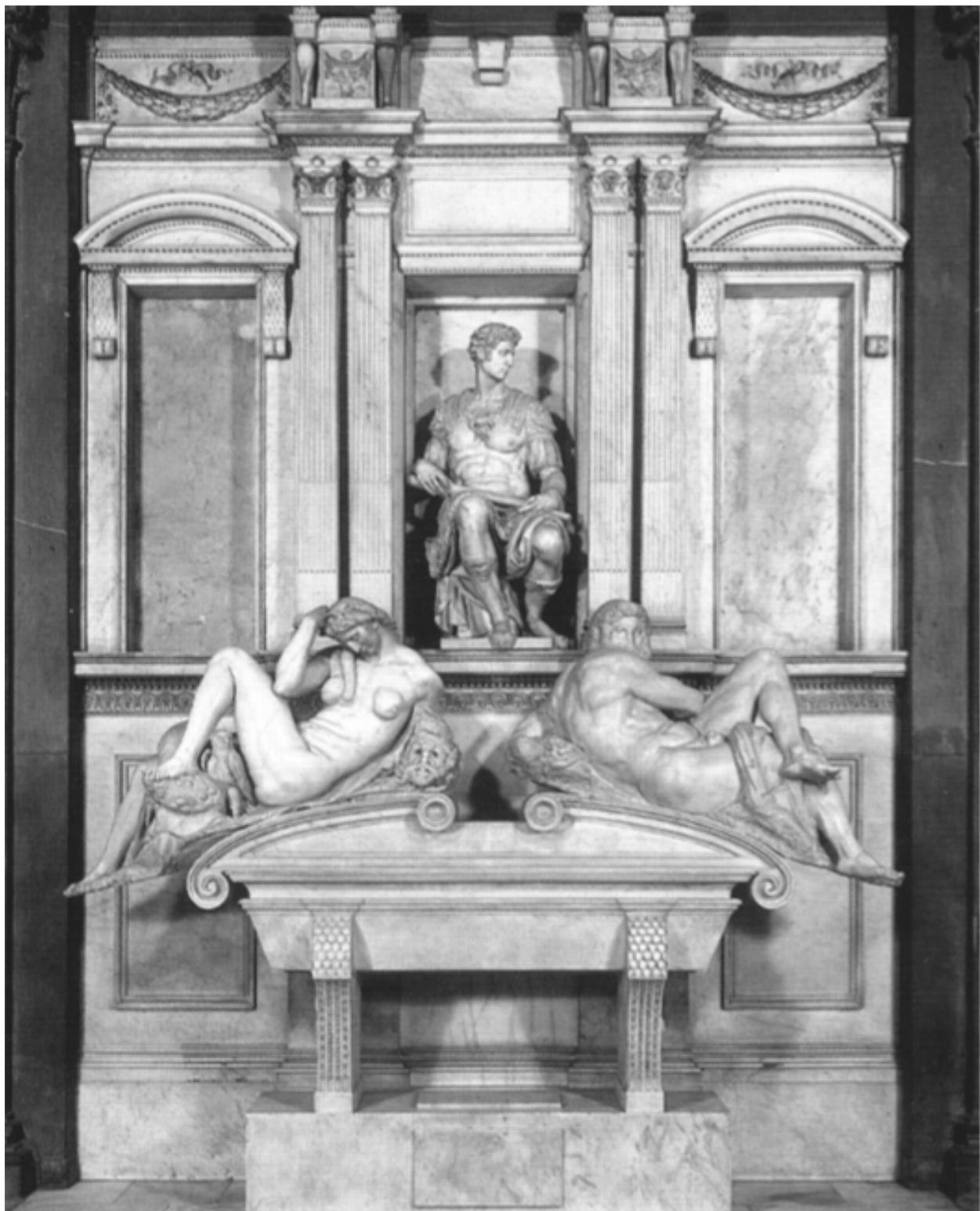


Figure 21 Michelangelo's Medici Chapel



Figure 22 Comparison, detail, Calcar, in the *Fabrica* and detail, seated artist in *De re Anatomica*



Figure 23 Raphael's portrait of Michelangelo, detail *School of Athens*

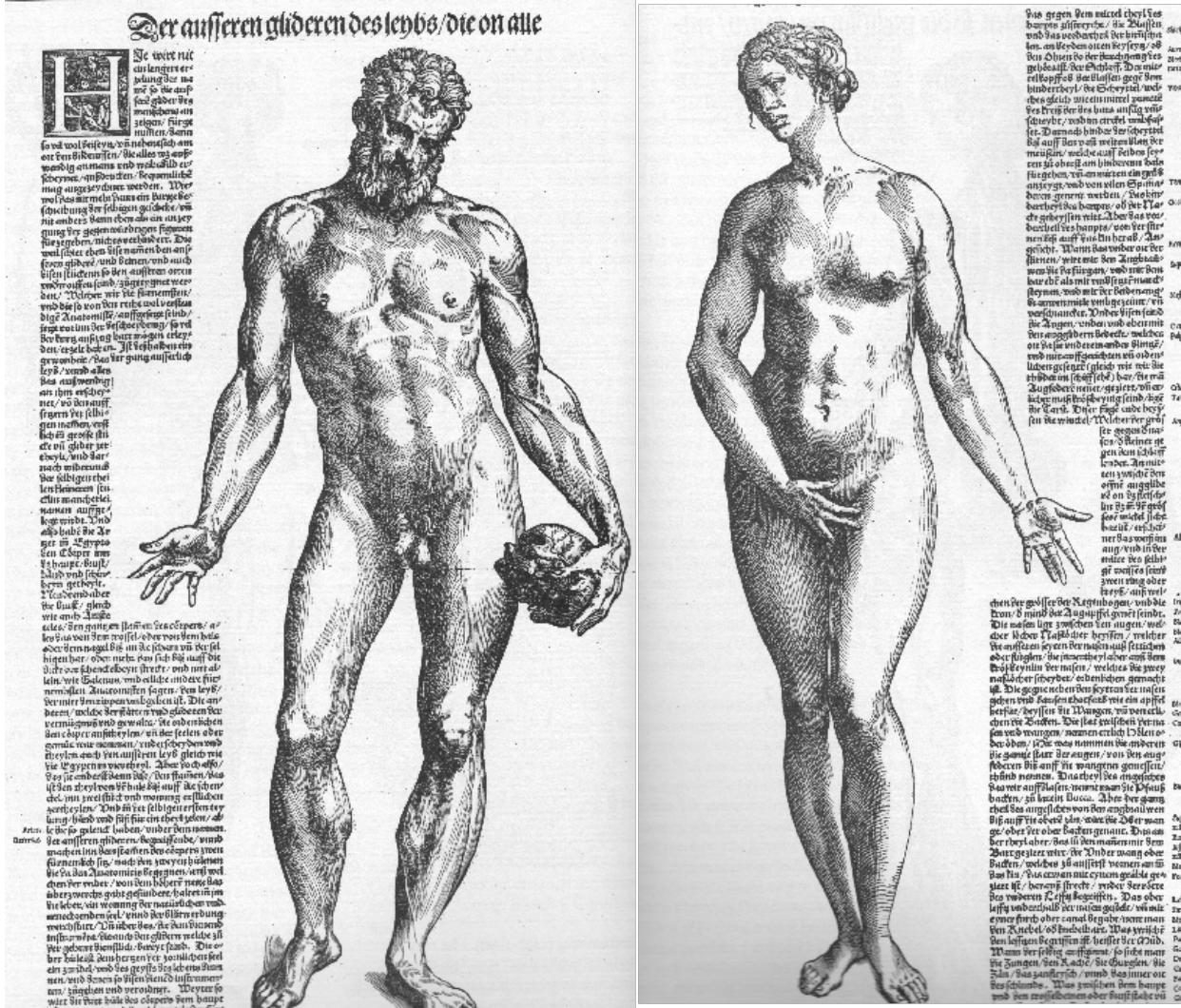


Figure 24 Adam and Eve, Vesalius' *Epitome*

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