



The frontispiece of Vesalius' Fabrica

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ABSTRACT

The frontispiece of the *De Humani Corporis Fabrica*, painted by a pupil of Titian, shows a neoclassical amphitheater in which the scene is represented of an autopsy performed by Andreas Vesalius, just appointed as Professor of Anatomy at the University of Padua. The body on which Vesalius is carrying out the anatomical investigation is that of a woman executed for committing a crime and who had attempted to escape execution by claiming to be pregnant. The autopsy therefore had the purpose of verifying the veracity of her statements, but also the professionalism of the midwife who, expressing her negative opinion, had determined the execution of the sentence. Many figures are around to assist, differently motivated, each representing a quite singular aspect. Under the sector table, two menials (cerusics) are arguing with each other to maintain a role that, with the advent of Vesalius, will no longer be up to them but to the medical sector.

Keywords: Anatomy; Andreas Vesalius; De Humani Corporis Fabrica; Frontispiece; Padua anatomy theater

INTRODUCTION

The frontispiece of the *De humani corporis fabrica* can be considered as the manifest of a new way of thinking anatomy. In fact, this imposing work by Vesalius will determine a profound break between what was before and what will later become the study of the human body. It is not a revolution in itself but rather the beginning of a revolution, and the latin title *De fabrica* implies the concept of arguing about an inert system which is analytically split and studied in smaller parts. The evolution of Vesalius by Realdo Colombo will be very different: "De re anatomica", translated into modern terms, would sound as "on anatomical activities", i.e. no longer just the study of inanimate elements, but the study of their functioning, what today we name *physiology*.¹ Among the many merits of Andreas Vesalius we must recognize the speculative method that leads him to

verify the age-old postulates of Galen and if necessary to refute them, but certainly the great innovation is in the addition to the text of a rich and detailed iconography. No anatomy text will ever be considered as such again, after the *De humani corporis fabrica* if not accompanied by a clear and exhaustive sequence of explanatory images. This makes it one of the most beautiful chapters in the entire history of medicine, and one of the best books ever published, a sort of *divine anatomy*, if we can pass the parallel with the poem of the great poet Dante. Sir William Osler described the *Fabrica* as "the greatest medical work ever printed."

The Book

De humani corporis fabrica for its fine Latin and depth of topics covered is, from the start, not a manual for students but a text from consultation reserved

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for scholars culturally very prepared and wealthy. Since the beginning, the purchase price was high and accessible to a few (five guilders, the first documented price) and, it must be said, that over time has maintained its value. Out of curiosity, visiting some sites of online booksellers offering ancient texts and finding it, the price for a copy in good condition, including the title page, is around €400,000.00; you can get it for €250,000.00 without the title page. The rise in value of a copy of *Fabrica* 1543, over the last 75 years equals nearly a hundredfold increase of purchasing power during the same period. On 18 March 1998 the so called “imperial” *Fabrica*, partially hand-coloured, was auctioned by Christie's with a base price of £500,000; it was sold for £1,652,500 to a collector whose name remains unknown. Maybe it was a second copy, on vellum, that the Emperor Charles V gave to the French ambassador Jaques Mesnage when he was resident at the imperial court. The first vellum copy, partially hand-coloured, that Vesalius gave to Charles V and kept in the University library of Leuven went, in fact, destroyed in a raging fire, broke out in August 28, 1914. The design of the drawings has been developed in the atelier of Titian. Though the graphic work is attributed to Stephan Van Calcar, many authors now agree on a supervision of Titian and some substantial contribution by Domenico Campagnola. Worth a special mention the precise and elegant wood engraving performed by talented Francesco Marcolino da Forlì.² Thanks to their unsurpassed mastery, we have still today an image viewing with a sharpness truly unique.

In the dedication of the work to the Emperor Charles V, Vesalius places considerable emphasis on the fact that Galen had written about anatomy without ever having dissected human bodies. He complains the decline of medicine, from his proper state in the time of the Ancients, due to people ceasing to use the hands in medicine: “*When the hand is used, medicine flourishes; when it is neglected, medicine languishes; when it is restored to use, medicine can flourish again*”, he wrote, and accused his contemporaries of repeating “*like crows*” a knowledge based solely on the authority of classical texts and not on direct observation.³ Very briefly, the *Fabrica* originates from the need to revisit the human anatomy with a “scientific” method, as already tested in 270 BC in Alexandria of Egypt by Andrea of Caristo, Marino of Alessandria, Eròfilo of Calcedonia and Erasistrato of Ceo, emphasizing with punctuality the discrepancies verified by the statements in the dissecting table as reported in the canonical texts. He could not accept the assertion of his first former professor, the parisian Jacques Dubois (Jacobus Sylvius),¹ “*Galen said it all; nothing can be further discovered. The reported differences are only due to the change of the human body from the time of Galen*”. Perhaps, for this reason too, Sylvius

is not ranked in the top ten of the best teachers of medicine of the past and few know him! The “*confutations*” to the dogmas of Galen (over two hundred) have been duly listed in the index, at the end of the seven books, to the letter G.⁴ The *Fabrica* was printed by Johannes Oporinus, in Basel. Vesalius chose this city because it had become the largest publishing center in Europe, surpassing Venice. But mainly because Oporinus, studying Medicine, Latin, Greek and Hebrew, could easily understand the contents of the work: he could appreciate what was written, following a logical thread and putting more passion into printing texts. He is also considered to be a typographer meticulous and innovative, therefore suitable to work on a book that contains many new features and destined to be successful. The ambitious Vesalius may have chosen Basel also because of its better location for the book distribution, down the Rhine to France and Germany, or over the Alps to Italy, and he had also published twice before with the firm of Oporinus. In fact the *Fabrica* is considered a masterpiece of Renaissance typography. The *Fabrica* itself, therefore, includes three revolutions linked together: the anatomical revolution, the pictorial representation of nature, and, last but not least, the new printing techniques. For these reasons the frontispiece (Figure 1) is a real *manifest* of modern anatomy. It is the figurative representation of a giant cultural step, elegantly played. “*That's one small step for man, one giant leap for mankind*” as said Neil Armstrong, in descending the ladder of the lunar module, after the moon landing, in July 20, 1969. Considering the enormity of the event, the comparison is not misplaced or exaggerated.

The Frontispiece: Obstetrics, Art, History

Let's start by looking at the picture as a piece of theater, a real event dramatically captured as if on a photograph. **The anatomy lesson** is open, and accessible to everybody, in a wooden theater built on purpose, in Palladian style on the model of Alessandro Benedetti, in a semicircular frame; the bystanders, over a hundred people, are placed on three-levels platform. Vesalius is the man dissecting and giving instructions, serving as the professor, dissector, and ostensor. In the center of the scene he stands surrounded not only by his students and fellow physicians but also by the Rectors of the city and university, councilors and representatives of the nobility and church. The author himself is standing, while his hands are unmistakably engaged in demonstration. Not only he is demonstrating from the cadaver, but he himself is the prosecutor. He signals the break with authority - by descending from the *chair*, and dispensing with the ostensors or demonstrators - and relegates the menials, who formerly did the dissection, to a position beneath the table



Figure 1. Frontispiece of the *De humani corporis fabrica*. Overview of the neoclassical anatomical theatre. The scene is majestic. Over a hundred figures flock to the steps of a neoclassical theatre, to attend the autopsy of the Professor from Brussels. Between symbols and allegories, these characters tell their own story, and on closer inspection the medical students, the only ones entitled to attend a truly macabre show, are a small minority. This crowd for disparate reasons rushes to see the autopsy of a woman, perhaps pregnant, executed for a crime that not even an alleged pregnancy has been able to prevent. And close to the corpse is He, proud and elegant as one would not expect from a medical sector, but the representation is important and he is the leading actor. The spectacle of a new anatomy is staged, where the anatomist can now demonstrate his knowledge by comparing it with the evidence of a still “hot” human body

where they are seen quarreling among themselves. In this way the reader is prepared for the subject matter of the book, expecting a description of the human body that will be based on the author's observations. In the foreword Vesalius specifically mentions the use of the hands which, he says, has been "completely neglected" by physicians since the time of the Romans.³ "Medici manuum munus ad alios reijcientes, Anatomicen perdiderunt", "doctors by abandoning surgery to others lost their knowledge of anatomy" according to the translation of Loris Premuda⁵⁻⁷ medicine itself had declined from its former splendor. The tools needed for the surgery are laid on the table: a sponge, a scalpel, a razor, a candle, but also a pen, an inkwell and a sheet as if to emphasize that the text should follow the experience observational and not precede it. Vesalius is unveiling the innermost secrets of God's creation, **the internal organs of a woman**. In the entire history of anatomy, this is the first time we can see the union between practice and theory: there is no more the differentiation of roles. Vesalius is portrayed at the dissection table, engaged in a performance: he is actually doing a dissection with his left hand raised, to emphasize what explains during the demonstration; the right hand dipped in the first venter of a woman, and his gaze looking out of the picture.

Pregnant or not pregnant? The body belongs to a woman who, as the same author tells us⁷, is a Paduan prostitute, hanged because guilty of some horrible crime, having tried to avoid the condemnation by falsely declaring herself pregnant. Marcantonio Contarini, magistrate of the criminal court of the Venetian Republic, subjected her to examination by a midwife who expressed serious doubts; perhaps the figure of a woman peeping out, in the shadows, behind the right-hand column. The magistrate authorized the execution and ordered an **autopsy** for verification and confirmation. Looking carefully at the picture one can see the marks of the rope on the neck of the deceased woman (Figure 2). First important message is that is the human body, in its centrality, demonstrative and representative, till now relegated to the comment function, to dictate text. No longer built on writing, the figure relates directly to itself; it is the same text that one browses on the dissecting table.⁸ On the entablature above the sumptuous Corinthian columns between the triglyphs appear the *bucranium* (ox's head) and the lion of St. Mark. The colonnade is reminiscent of the old courtyard of the Bò (ox), the ancient site of the University of Padua founded in 1222, at that time in major restructuring, and that one can still admire before entering into the wonderful *Aula Magna* of the Bò. More on the top, on the left on the parapet of the window, from which leans a figure of young man, you can notice a symbol that



Figure 2. Detail of the frontispiece of the *De humani corporis fabrica* which highlights Vesalius in the act of describing the visceral anatomy of the corpse

resembles the Greek capital letter phi. It is the monogram of Johannes Oporinus, publisher of the Treaty.

On this young man leans many critics have wanted to see the representation of the advancing *new*, and he is in full light, as opposed to the *old*, represented by the senile bearded figure who looks out the window right in the twilight. Some critics interpret the whole scene in the light of this separation; on the left the modernity, to the right the past.⁹ The nude figure clinging to the column on the left indicates the importance of surface anatomy as shown in the *Epitome* and draws attention to the functional aspects which Vesalius is teaching. Vesalius is topped by an articulated skeleton (true representation of what he prepared and presented at the University of Basel of infamous Swiss criminal Jakob Karrer), who appears to be seated upon a railing with its legs dangling, holding a magisterial cane (perhaps the one used by demonstrator during the autopsies): "Hic est locus ubi mors gaudet succurrere vitae" seems to say to the bystanders, anticipating the *motto* engraved on the lintel of the gateway to the anatomical theater of the Bò. However,

many Authors stress the fundamental importance of the osteology in the study of anatomy. By a twist of perspective, the pole extends upward so far that its proximity to the decorative cartouche enclosing the title, makes it look like a trident. The skeleton is surmounted by the heraldic shield of Vesalius. The coat of arms supported by two cherubs displays three weasels coursing greyhounds, the emblem of the anatomist's ancestral home (Wesel in Cleves) and a play on the vernacular version of his name. Below, one can see the cartouche with the title of the work. The author's name is with larger fonts, followed by citizenship his official role, and finally with the minor fonts the real title. The exact opposite of what is happening now. The two interesting mythological animals, placed alongside, recall the Chimeras placed on the facade of Notre Dame in Paris. A second cartouche, placed at the base of the image bears the Privileges, protecting the *Fabrica* from unauthorized copying, were obtained from the Venetian Senate and from Charles V, and one was promised from France. A fore-running attempt of copyright that was not sufficient to protect the work from a multitude of plagiarism. It is also curious to notice the naked figure peeping from the column on the left of the scene. According to the intentions is an allegory that stresses the importance of appearance, a study of the artistic nude serving anatomist to know the anatomy of the surface, which is important both for the artists and for the anatomists. The austere character in classic suits and thick beard on the right of the table is supposed to be, by most of the commentators of this table, Renaldo Colombo, Vesalius' assistant and successor. One of the friends mentioned cordially in the 1543 *Fabrica*, later became a critic and rival. The anatomist Colombo is mentioned as "My good friend now a professor of sophistic at Padua, a most diligent student of anatomy".³ For others scholars, he represents the Golden Age, or Aristotle, or Marcantonio Genoa, philosopher and close Andrea's friend that greatly encouraged the *Fabrica* composition.¹⁰ He is represented in the act of admonishing the keeper of the dog, that is behind, not to disturb and remove the animal that is stamping his toe with the paw. About paws, look at the back of the dog, it's just a game of perspective, if you look carefully you see that is the foot of the keeper, with six fingers. The figure back on the right side of the table is assumed to be Wolfgang Herwart friend and financier. "He first inspired me to begin this work, and has been no less my eager counselor than the rare model of virtue", wrote about him Andrea.³

Another graph joke on the right side of the figure, a rascal hand, that seems to come from nowhere. In the face that appears above the right shoulder of the anatomist some scholars see Titian.

Some figures in the title page seem to ask the viewer to keep the focus on the center of the stage: the surgical demonstration. On the right we can see a noble figure of an old man with a closed book in his hand indicating to someone the dissection table to signify its acknowledgment of *experientia* on ancient texts. See also the explosive curiosity of the young man, on the left, who in the desire to penetrate into the scene leans on the railing overhanging the person standing in front of him appearing annoyed. See also on the right, the figure of an elegant old man of brooding monk engaged in an exchange of views with a neighbor. In contrast on the right we can see an old, cowed, bearded man with classic suits, sitting on a stool, assisting the demonstration with intense but restrained interest, such as those who see their certainties disappear. For some commentators he might be Galen himself in an attitude not opposite but of disconsolate acceptance, in front of the truth of the advancing *new*. A little to the left, another animal, a noisy monkey, busy biting the hand of the keeper, also held with a chain. It represents, with the dog, the animal anatomy. An interesting interpretation of this particular was given me by an art expert who reminded me that the tied monkey symbolizes the primal instincts kept in check; therefore, the representation of a concept of the anatomy that must be contained in the fields of comparative anatomy and thus of secondary importance. On the left, on the second order of tier there is a young man who follows the scene with an open book, just to the left of the dark and brooding monk. Harvey Cushing (a great student of Vesalius) claims he is Jan Stephen von Calcar, the author of the illustrations, in the act of taking sketches for subsequent tables. The character with the beard to the left of the skeleton, wearing characteristically Jewish garb, could represent Lazarus de Frigeis⁶ great Talmudist that Vesalius credits, "a distinguished Jewish physician and close friend" He is looking with sad and compassionating eyes the old man sitting on his left which we have just assumed to represent Galen. Lazarus assisted him with the Hebrew translation in the *Fabrica*. More direct evidence that Jewish medical students and physicians studied the works of Vesalius lies in the existence of a rare manuscript of the *Fabrica* in Yiddish, dating from the late 1500s. Another relationship between Vesalius and the Jews is shown by his tenure as a lecturer at the University of Padua. Our University, indeed, was one of the few institutions of higher learning in the Medieval and Renaissance periods that admitted Jews. As a result, many European Jews attended his classic dissections. On the right of the dissection table, the spectators are giving rapt attention, but one has an added advantage: the eyeglass!

CONCLUSION

We leave the reader with an invitation to look with new eyes at this title page, hoping that he can find pleasure in searching the so many messages that since five hundred years the Vesalius' frontispiece brings to all of us.

ETHICS

Peer-review: Externally peer-reviewed.

DISCLOSURES

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