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Unit 7 - Anatomy books in the Renaissance

Sapienza University of Rome, Italy

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WHAT IS ANATOMY?

Anatomy = “cutting up” (Greek)

- The study of the structure and form of the parts of a living organism
- Example: What does the heart look like & what are some of its parts?

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Three Levels of Anatomy

- Gross – anatomy on a large scale

Example: Learning the names of the bones and certain regions on them

- Histology – anatomy at the tissue level

Example: What is bone tissue made of?

- Cytology – anatomy at the cellular level

Example: What types of cells make up bone tissue?

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The Renaissance Period

- Universities and medical schools were founded, providing a formal environment for research and instruction
- Previously existing beliefs were challenged, and exploration began on new horizons of human understanding
- The printing press was invented, promoting a much more rapid dissemination of information
- Stigma attached to dissection of the dead was overcome, allowing advancement of knowledge in anatomy and physiology

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The image of human body in Reinaissance medicine

The representation of the human body built by medicine had historical references and analogical relations with other compounds of the culture of each particular period

The organic model, the coordinated and hierarchical dependence of the body parts, its subordination to a prevailing element (the brain or the heart, depending on the authors and times) guided directly by a soul infused by God…

These are some of the aspects which reflect the relation between the image of the body and the justification od the ideological and social order, as a natural one

Among the numerous sources of Renaissance medicine that could bring significant facts about this theme

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The human body and the cosmos

The image of the human body that has been historically constructed by medicine and biology, often has analogical and symbolic links with the different aspects which take part in the culture of all ages

It is well known that, since the times of the classical scientific cultures, an identification has been established between the human body and the cosmos, within the framework of a single and general conception of Nature, in which cosmology and human physiology shared a unique and identical meaning as particular realizations of a Universal physis

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This is far from being the only cultural construction having a direct influence upon the picture of the human body created by biology and medicine. In addition to the unquestionable ascendancy of some philosophical concepts particularly linked to the Aristotelian tradition and to Platonic natural philosophy, medical concepts usually found a figurative sense in other cultural or scientific models

The influence of Plato's ideas on medical thought has been well studied. His ideas in relation to natural order expressed principally in the Republic and Timaeus were used by the dominant intellectual groups to reinforce the social order and justify the monarchy as an absolute power

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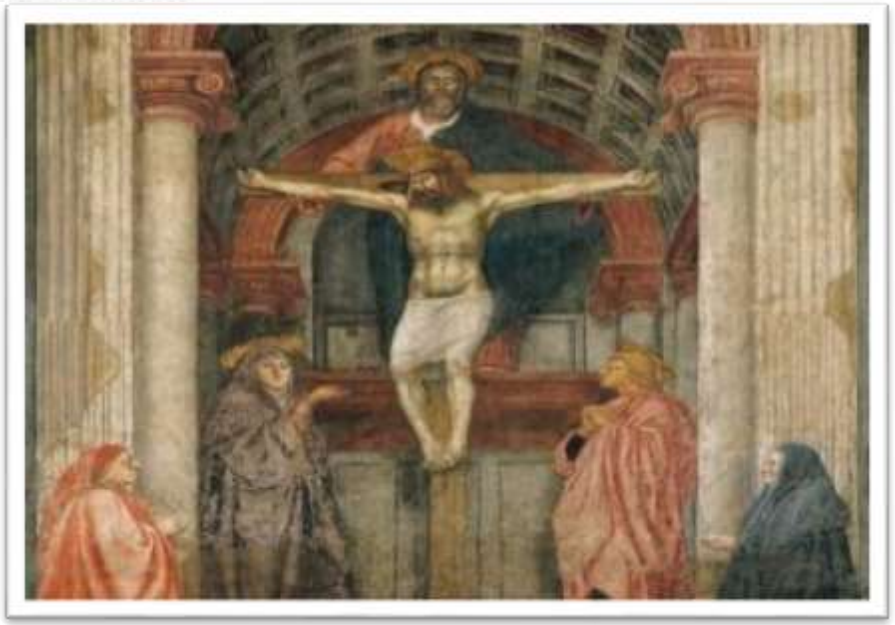

The human body as the top expression of natural order represented a cross-roads in interests

In fact, it was not uncommon, at the beginning of modern times, to use mythological, political or religious analogies to explain the functioning of the human organism, that is to say, to elaborate a rational discourse about human life

For instance, the description of the blood circulation of the lung by Servetus ih the fifth book of his *Christianismi restitutio* was inserted in a religious treatise in which the human organism waas used as an analogical model to illustrate the discussion about the Christian doctrine of Trinity

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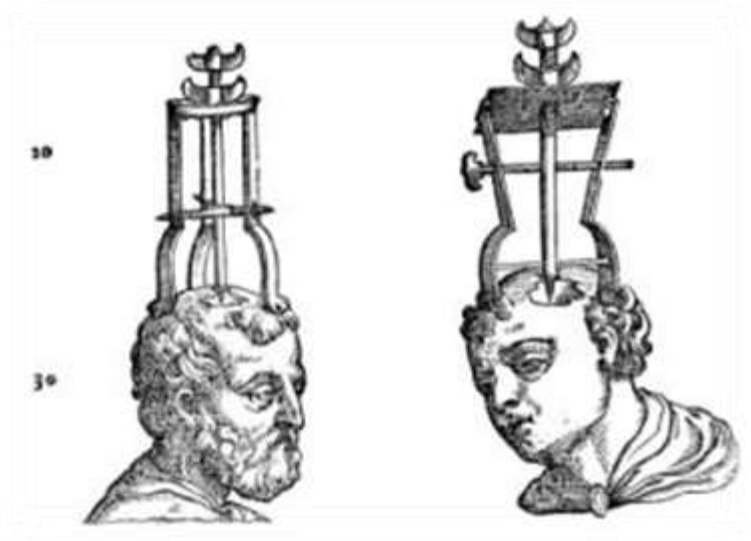
Medical language in Renaissance

A human body which, endowed with an internal organisation and an obvious functional hierarchy, could be a reference to social order and sometimes, a model of comparision to justify, as natural, the hierarchical structure of the Church

In this intellectual framework the human body had to be sacralized



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It is easy to observe the influence of the different cultural constructions on medical concepts from the start of classical scientific thought, and not only in societies in which mythical forms of thought prevailed

If we were to analyse the contents of Hippocratic medicine, it would be easy to recognize the presence of the political culture – the particular culture of the *polis*- and of the social and ideological model in relation to the *polis,* at least in medical language and as far as some of the main concepts of pathology are concerned

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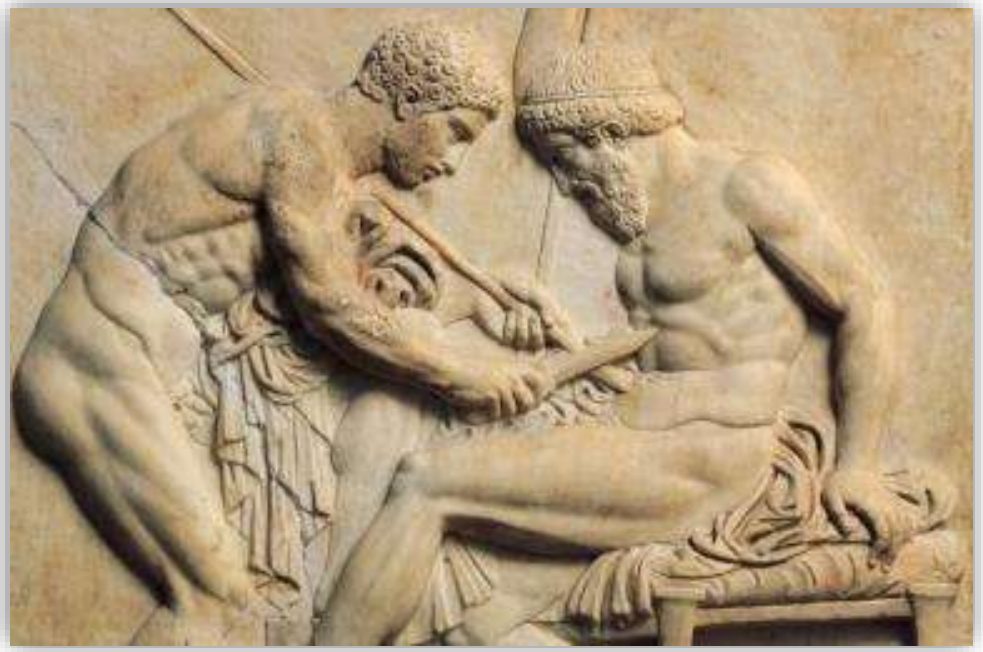
The concept of krisis

For instance, let's consider the concept of krisis, which was applied by the Hippocratic physicians to the final evolution of some diseases. According to Mario Vegetti's philological studies, the physicians observed connections between the original sense of krisis and the judgement by a tribunal of the guilt or innocence of the accused

The concept of isonomia, that is equilibrium or harmony of opposite forces, as applied to health by Alcmeon of Crotone, also had a direct equivalence in the political organisation, because diseases could result from the loss of equilibrium, namely, the monarchia, or predominance of one of the opposing forces



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THE SOCIAL AND CORPORAL ORDER

In all these cases, the relations between social and corporal order are evident

The same idea also arises when considering the Hippocratic notion of ambient as a conditioning factor for health

The Hippocratic physicians considered salutary, the climate in which no element or quality dominates decisively over the others (heat, dry, cold, humidity etc.), so that the exact equilibrium among the qualities is reached

Therefore, there is a clear analogical function between political language and some general concepts of medicine in the Classical Antiquity

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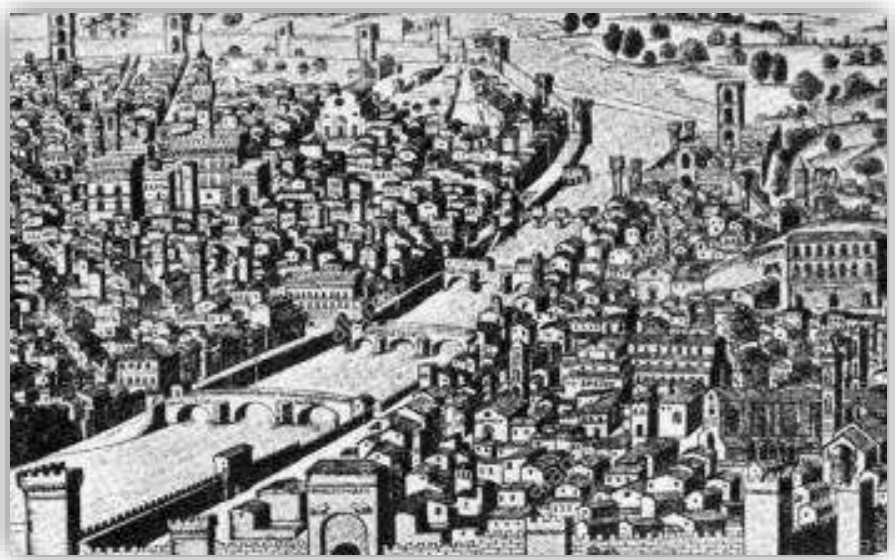
Human and social body in Renaissance

If health was considered by medicine as a direct consequence of the correct functioning of the laws of nature and, if nature and its laws are the same both in the human and social body, and in the city or state, then the functioning of all constituents of nature should be the same



That is why the restoration of the classical culture attained in the Renaissance gave a new impulse to the Platonic ideal of the republic, and the role of the polis as a social and political unit was reinforced

The central position of the city in Renaissance culture – a bourgeois and commercial one – had a direct influence on the representation of the human body created by medicine

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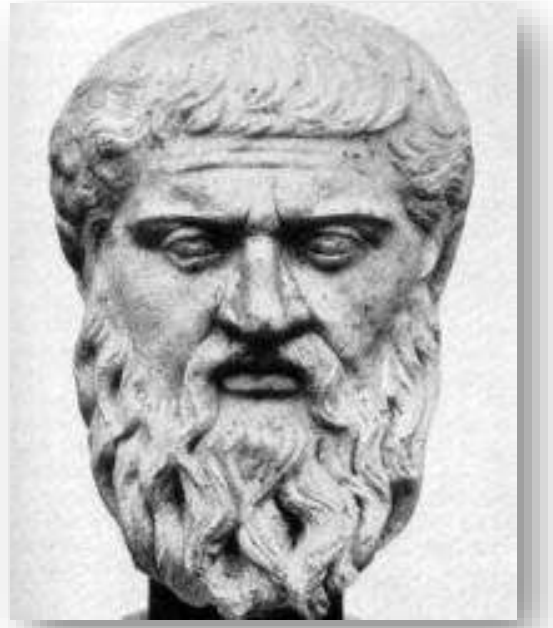
THE INFLUENCE OF PLATONIC IDEAS



The Renaissance provided the basis for the development of a long secularization process, in which the representation and functioning of the human body were related to the social, political and domestic order that had a great significance in medicine

The influence of Platonic ideas, during the first half of the sixteenth century, was very great in some humanist trends

Nevertheless, other factors were also influential:

1) The retreat of the theocentric perspective (common in the late Middle Ages) in favour of a world thought in accordance with man
2) The influence of the social and uban transformations which took place at the onset od the Modern Ages

Numerous authors regarded social structure, political order or domestic functioning with a view to explain the body's internal dynamism

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MONDINO DE LUZZI

- Italian scholar known as the restorer of anatomy
- Wrote Anathomia, considered the best work on anatomy at the time, finished round 1316
- For at least two centuries, it remained a classical anatomical textbook used by all European universities
- The book is a treatise on human anatomy and constitutes a practical manual of dissection, including also some physiological information

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MONDINO DE LUZZI

- Innovations: specification of the basic elements of organ anatomy: the position in a topographic region of the body, relationship with the surrounding structures, shape, size, texture, parts, physiology, and pathology

- Names of various anatomical features were in Latin accompanied with Arabic

- The structure of the book follows the order of dissection, starting from the abdominal cavity and ending with the head

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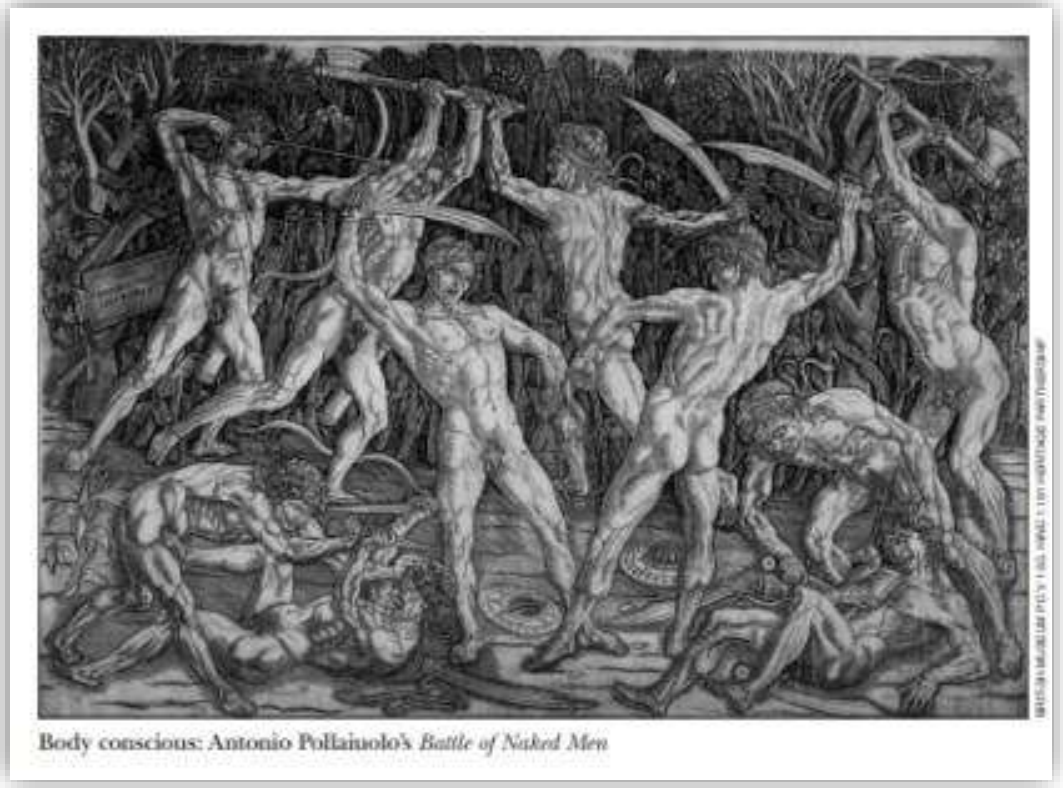
ANTONIO POLLAIUOLO

Pollaiuolo was the first artist, in 1472, to dissect the human body in order to better understand the muscles and the nude form



Body conscious: Antonio Pollaiuolo's *Battle of Naked Men*

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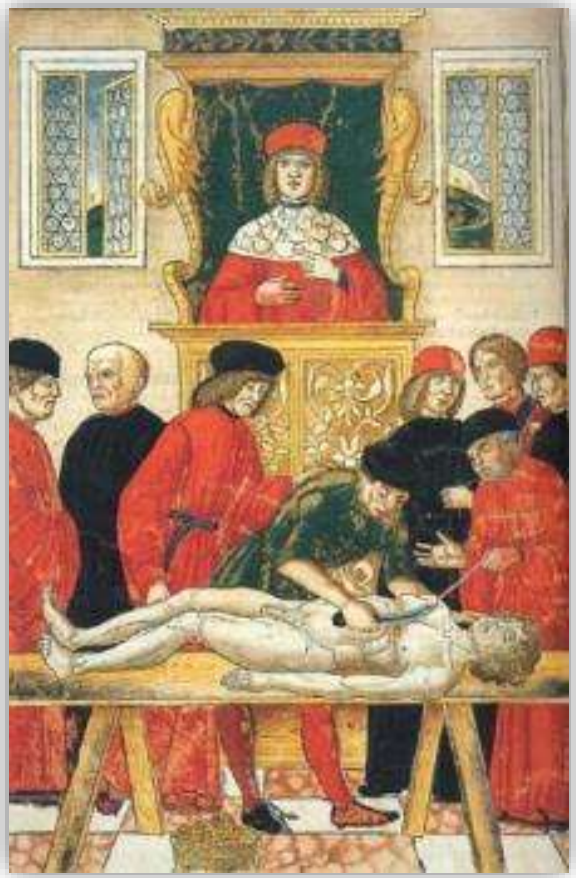
Johannes Ketham



- THE FASCICULUS MEDICINA, printed in 1491, is considered the first illustrated medical book
- The Latin essays and illustrations in this volume provide insight into the medical knowledge of Western Europe and, in the Italian edition published in 1493, glimpses into the medical culture of the late 15th century
- The artist of the 1493 *Fasciculo* witnessed a paradigm shift occurring
- In four woodcuts, the artist captured four themes: the relevance of knowledge-based medicine, the emergence of laboratory medicine, the Hippocratic lessons of patient observation, and the emerging revolution in anatomy

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Leonardo da Vinci

- He was born on April 15, 1452 in Vinci, Italy
- While growing up Leonardo was fascinated by animals and insects
- Throughout his long life, he never stopped studying nature-plants, anatomy, the movement of water, the mechanics of flight-and applying his observations to his art

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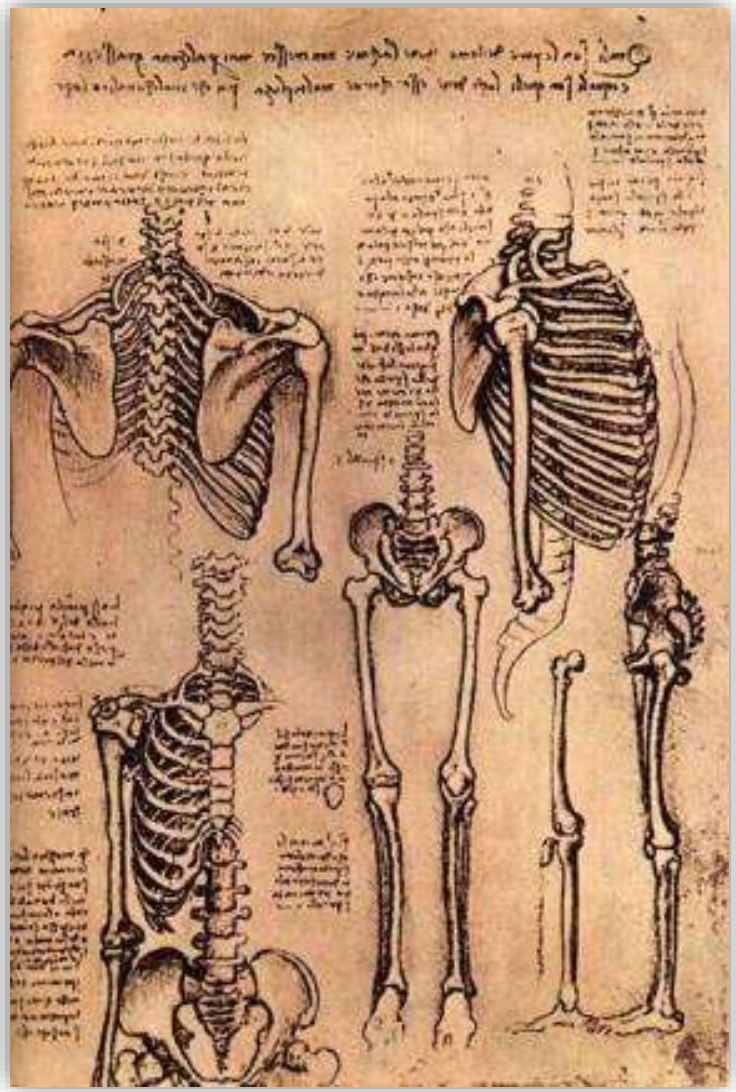

Man and God

- At first Leonardo intended to learn about the human body so that he could paint it more realistically
- But soon he began to hope that it would bring him to the answer to the riddle of creation

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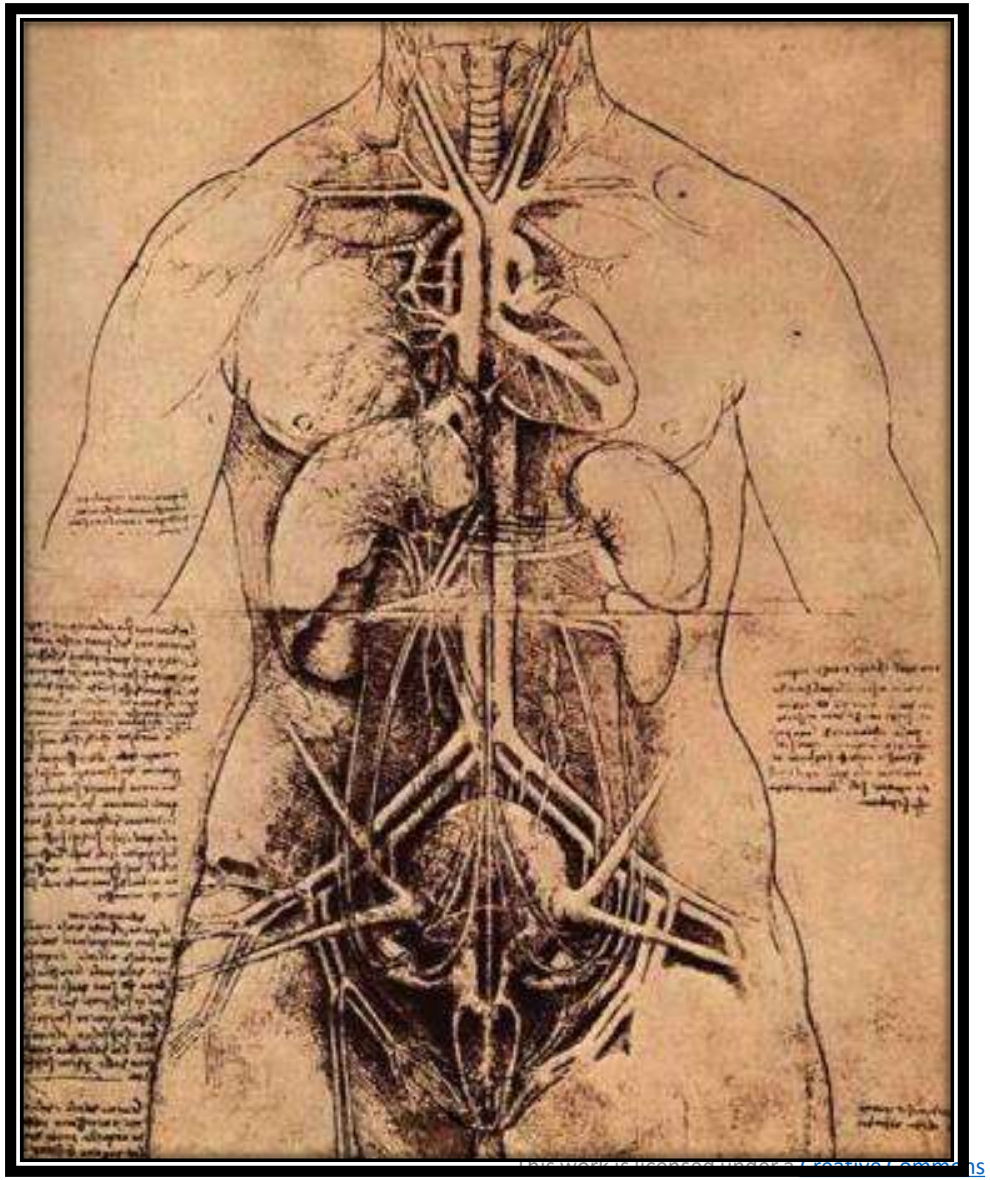
Anatomical Study

- Leonardo often watched doctors perform autopsies so that he could study human anatomy
- He later began dissections on his own and carefully sketched everything that he saw
- It cannot be determined exactly when Leonardo began to perform dissections, but it might have been several years after he first moved to Milan, at the time a center of medical investigation



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Anatomical Study

- His study of anatomy, originally pursued for his training as an artist, had grown by the 1490s into an independent area of research
- As his sharp eye uncovered the structure of the human body, Leonardo became fascinated by the *figura istrumentale dell'omo* ("man's instrumental figure"), and he sought to comprehend its physical working as a creation of nature
- Over the following two decades, he did practical work in anatomy on the dissection table in Milan, then at hospitals in Florence and Rome, and in Pavia, where he collaborated with the physician-anatomist Marcantonio della Torre
- By his own count Leonardo dissected 30 corpses in his lifetime

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Anatomical Study

- Leonardo's early anatomical studies dealt chiefly with the skeleton and muscles; yet even at the outset, Leonardo combined anatomical with physiological research
- From observing the static structure of the body, Leonardo proceeded to study the role of individual parts of the body in mechanical activity
- This led him finally to the study of the internal organs; among them he probed most deeply into the brain, heart, and lungs as the "motors" of the senses and of life
- His findings from these studies were recorded in the famous anatomical drawings, which are among the most significant achievements of Renaissance science

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Anatomical Study

- The drawings are based on a connection between natural and abstract representation; he represented parts of the body in transparent layers that afford an “insight” into the organ by using sections in perspective, reproducing muscles as “strings,” indicating hidden parts by dotted lines, and devising a hatching system

- The genuine value of these *works* lay in their ability to synthesize a multiplicity of individual experiences at the dissecting table and make the data immediately and accurately visible; as Leonardo proudly emphasized, these drawings were superior to descriptive words

- The wealth of Leonardo’s anatomical studies that have survived forged the basic principles of modern scientific illustration. It is worth noting, however, that during his lifetime, Leonardo’s medical investigations remained private. He did not consider himself a professional in the field of anatomy, and he neither taught nor published his finding

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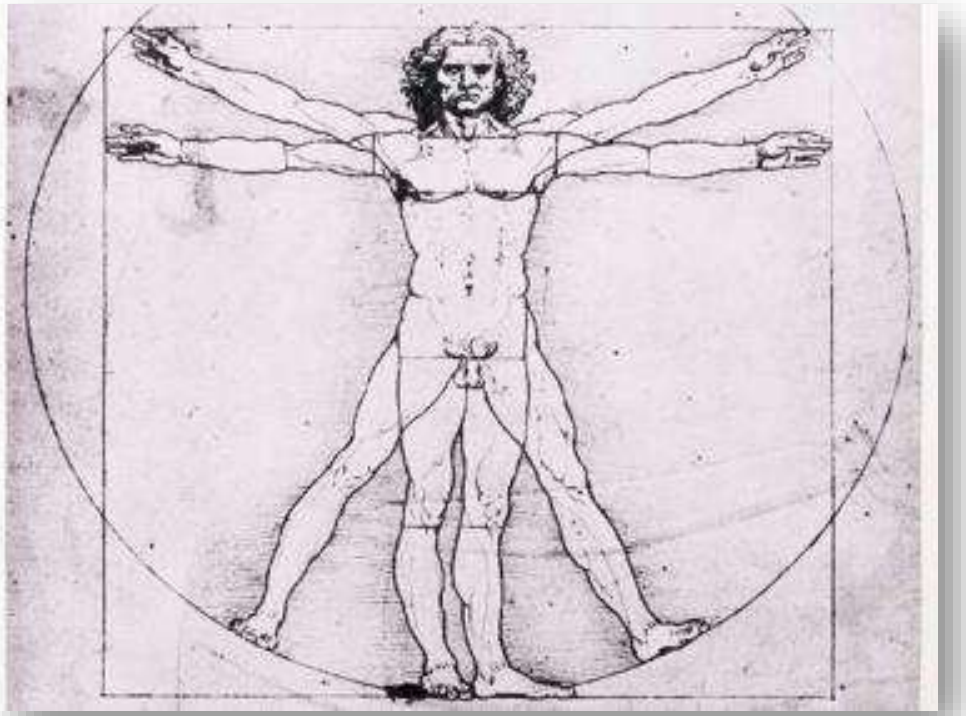
Anatomical Study



- Although he kept his anatomical studies to himself, Leonardo did publish some of his observations on human proportion
- Working with the mathematician Luca Pacioli, Leonardo considered the proportional theories of Vitruvius, the 1st-century-BCE Roman architect, as presented in his treatise *De architectura* (“On Architecture”)
- Imposing the principles of geometry on the configuration of the human body, Leonardo demonstrated that the ideal proportion of the human figure corresponds with the forms of the circle and the square

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Anatomical Study

- In his illustration of this theory, the so-called *Vitruvian Man*, Leonardo demonstrated that when a man places his feet firmly on the ground and stretches out his arms, he can be contained within the four lines of a square, but when in a spread-eagle position, he can be inscribed in a circle
- Leonardo envisaged the great picture chart of the human body he had produced through his anatomical drawings and Vitruvian Man as a cosmografia del minor mondo ("cosmography of the microcosm")
- He believed the workings of the human body to be an analogy, in microcosm, for the workings of the universe. Leonardo wrote: "Man has been called by the ancients a lesser world, and indeed the name is well applied; because, as man is composed of earth, water, air, and fire…this body of the earth is similar"
- He compared the human skeleton to rocks ("supports of the earth") and the expansion of the lungs in breathing to the ebb and flow of the oceans

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Some of the works on the cranium

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Bernardino Montaña de Monserrate

One paradigmatic case is that of the Spanish anatomist Bernardino Montaña de Monserrate, author of the first anatomical treatise written in Spanish, the *Libro de la Anathomia del Hombre.* Montaña uses a symbolic construction, particularly in the second part of the book, devoted to the dream of Don Luys Hurtado de Mendoza, Marqués de Mondéjar. In the first part, which is a systematic description of human anatomy, we find sentences like the following:

La primera cosa que se ha de considerar generalmente en la cabeça es el sitio, que es más alto que el sitio de todas las otras partes: lo qual fue ordenado de naturaleza porque cumplía que estuviessen juntos con él [cerebro], es a saber, el sentido de la vista, del oydo, y del oler : los quales sentidos son como atalayas principalers que sienten y dan aviso al entendimiento de todas las cosas de fuera del cuerpo que le pueden servir o dañar… y convenía que el lugar de las dichas atalayas estuviesse en lo más alto que ser pueda porque desde allí puede muy mejor y más lexos hacer su oficio, en espacial, el sentido de la vista: y por esta razón dezía Galieno que la cabeça fue más hecha para el servicio de los ojos que del celebro, como quien dize que el cerebro no tenía necessidad de estar en lugar alto, y que si la cabeza fue situada de naturaleza en el lugar más alto, aquello fue por beneficio especial de los ojos

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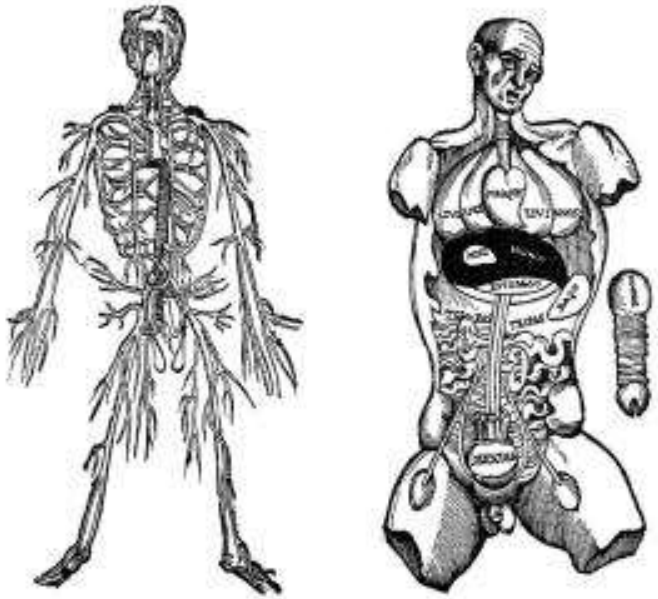
However, the brain was considered by Montaña to be the main organ of the head, because nature had made all the other parts dependent on it



The brain is not only the source of the animal spirits – effective principle of all the actions of feeling and motion – but also the seat of the three internal sensitive virtues – imaginative, rational and memorative

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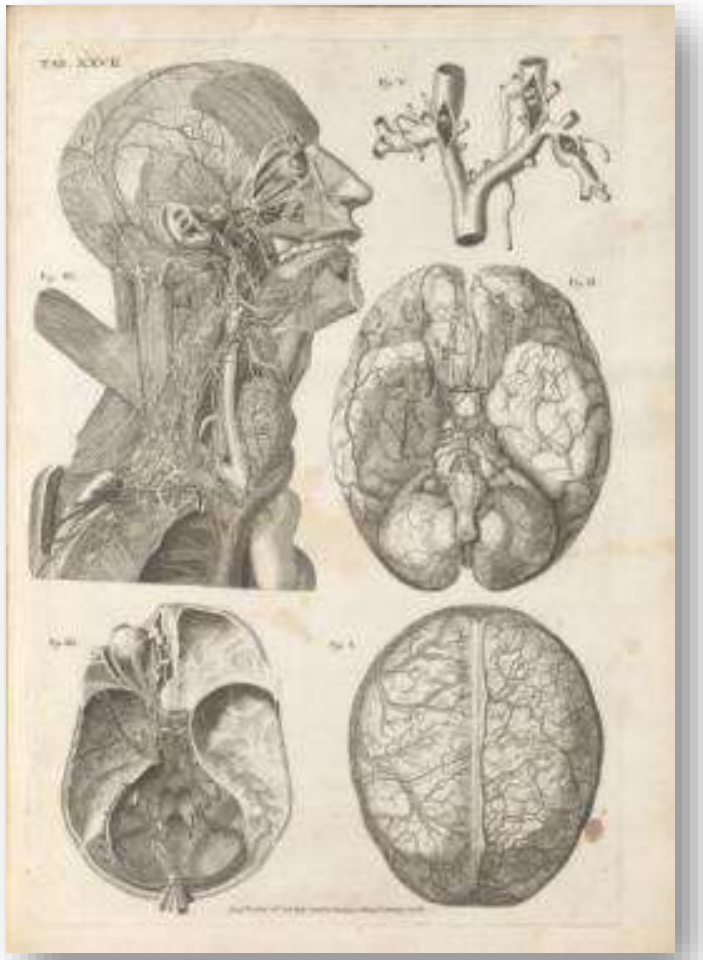

This is due to the action of the animal spirits (created by the brain) over its own substance. Furthermore, nature put the brain in the highest place of the human organisation so that it could be, together with the nape of the neck, «its lieutenant» (Montaña), the origin of nerves, through which the animal spirits spread all over the body. Obviously, everything is structured in relation to the main organ: the brain

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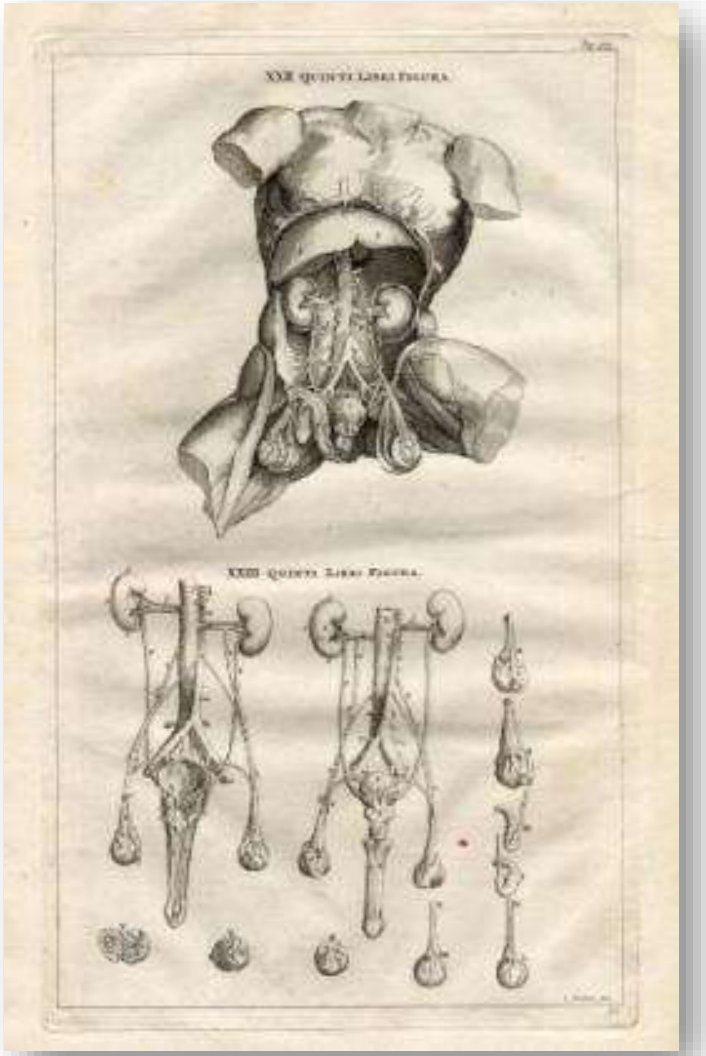
Analogies related to the domestic order were usual in Montaña's anatomical thought. For instance, he compares the heart valves to doors that open and close and, what is more significant, the stomach is seen as the kitchen where food is cooked («El officio del estómago es como avemos dicho cozer de primera instancia la vianda que es menester para mantenimiento de todo el cuerpo, en el qual cozimiento se engendra una sustancia líquida blanca a manera de ordiate que se llama quilo…»)

In line with the Galenic tradition, Montaña says that the second coctio takes place in the liver and results in the four humours. The spleen has a cleaning function together with the kidneys, both considered by Montaña as servants of nature taht keep the blood clean

He believed, as did Galen, that the internal organisation of the human body belongs to a teologically structured hierarchical order, in which the lowest cavity, the abdomen, has the aim of generating blood



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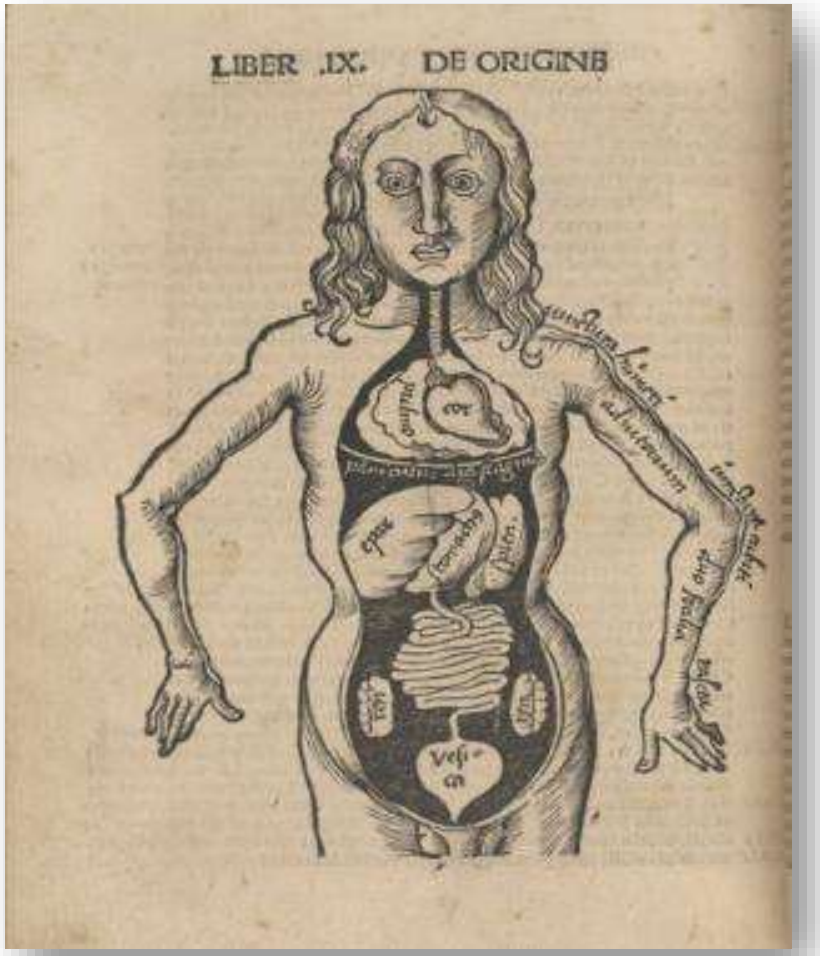
Other upper parts of the body ‘purify’ the blood, which initially is not tenuous, in two specific places, as postulated by the Galenic doctrine: the thoracic cavity where the heart plays the main role (heating and vivifying the blood) and the brain, where a higher purification process takes place, in the ventricles

There, the reception of the animal spirits gives the blood the highest grade of subtility

Obviously, the brain is considered the superior, most spiritual organ, by the Galenic system



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Although based on physiological Galenism, the archetypic body system offered by Montaña lacks originalism, especially as far as the symbology of the dream attributed to the Marqués de Mondéjar is concerned (the dream is conceived as an independent part of the book)

The dream's departure point is a methaphor in which the female body is represented by a house with three main chambers

The nutritive remains of those who live at the house go out through the lowest chamber (the uterus) each month. Its door is always closed and inside, on the right side, lives an architect – the genitive spirit – who struggles to build a new fortification (a son) inside the room. To do so, he takes the necessary work materials ('Los materiales son figura de la sangre venal y arterial de la muger, de la qual con la simiente del varón se forma la criatura…'). The vault (placenta) and the two surroundings of the new fortification are made of these materials

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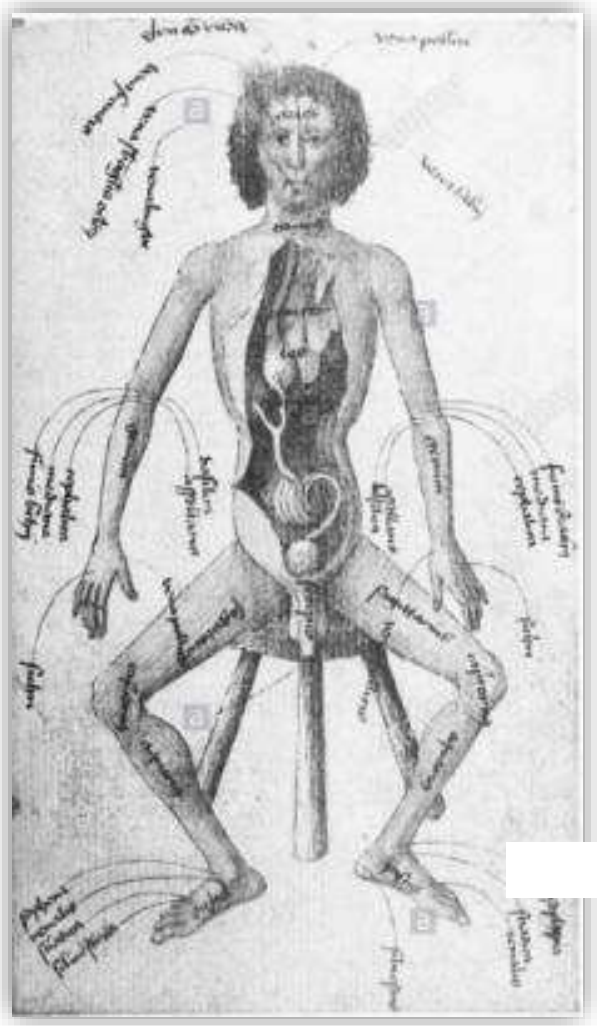
The architect's formative mission continues in the other rooms, so that the whole construction can be finished at the same time

In the lower chamber (abdomen), there is a kitchen (stomach) where all the food of the fortification is first cooked; on the right side, there is a copper sideboard (the liver) where the white food (chilus) is cooked again

Four tasty stews are prepared there (the four humours) and are sent together, through certain conductions, to sustain the whole fortification, and this is thanks to a master chamber called 'natural spirit when it was lodged in the liver'

On the lower side of the sideboard (the liver), there are two containers, corresponding to the vesicle and the spleen; their main functions consist of receiving the overflowing cholera and melancholic humour, the residual matters and froth of the white chylus



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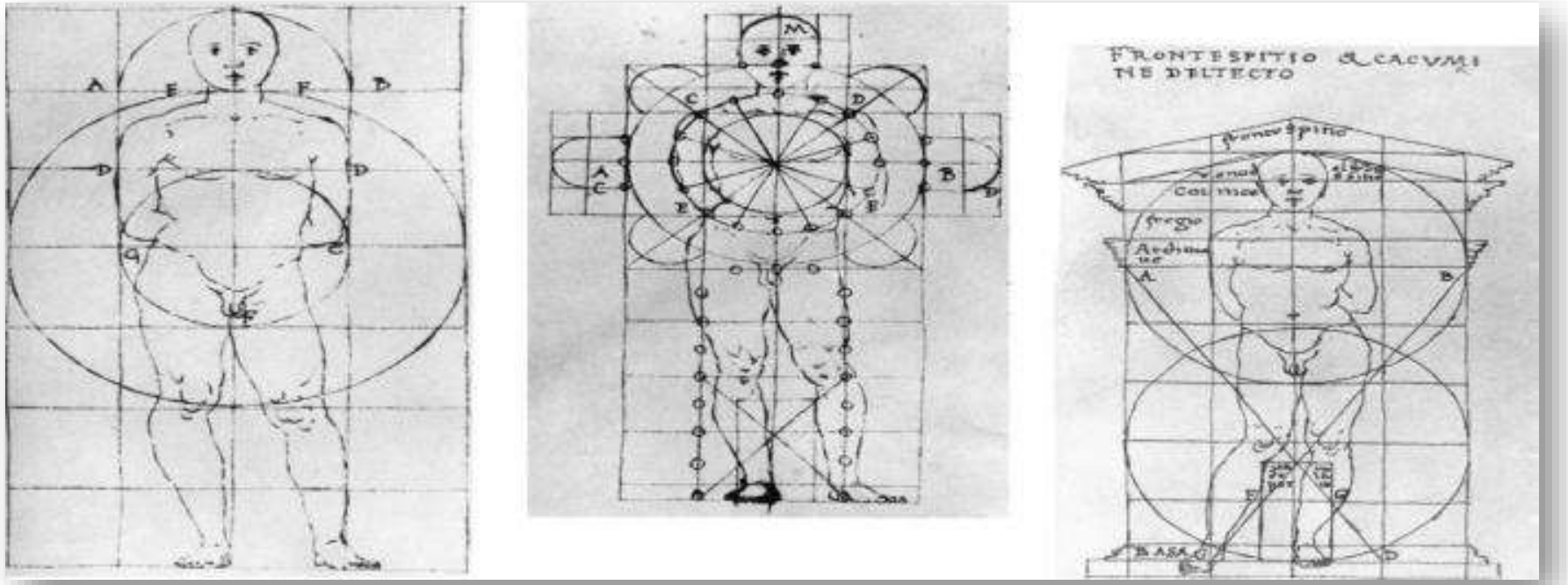

These are some of the most representative symbologies applied by Montaña to explain both the parallelism between urban and domestic organisations and the functioning of the human body

Generally domestic and social perspective of the human body was widely used by Renaissance physicians, in the same way as a human, organic image of the social order was part of the culture of architects and urbanists

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Andrés Laguna

The influence of Plato's natural philosophy on medical thought was very strong in Spanish medicina during the first half of the sixteenth century

It disappeared gradually in the anatomical works published by Spanish authors during the second part of the century

The humanist Andrés Laguna leaves Plato's natural philosophy out of his Anatomica methodus (1535)

Neither Valverde, follower of the new vesalian reformation, in his Historica de la composición del cuerpo humano (1556), nor the anatomical works of Pedro Jimeno show any trace of Platonism. Obviously, Platonic ideas remained in other theoretical works

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Vesalius Renaissance anatomy lessons

- Andreas Vesalius (1514-64) is one of the most important figures in the history of anatomy
- He was the author of De Humani Corpis Fabrica (On the Fabric of the Human Body), a beautiful and revolutionary Renaissance study of human body
- Born in Brussels, he was educated as a physician, and became a teacher of surgery and anatomy. As a young student, Vesalius was so fascinated by the human anatomy that he stole the body of an executed criminal from a scaffold, taking it home to study the amazing structure of the body
- At that time, student physicians did not have to attend dissections as they do today. Instead, they were expected to learn from the teachings of the Greek physician Galan who lived between 129 and 216 AD

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Why would illustrations such as these be considered so valuable by students of medicine during and after The Renaissance?

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Vesalius's Renaissance anatomy lessons

- For 1000 years after Galan's death almost no original anatomical inquiries were performed, mainly because the Church was against the dissection of human bodies
- From the 1200s onwards, some dissections were carried out, but not many - surgeons had to rely on the corpses of executed criminals, and these were in short supply
- Also, without fridges there was no way to preserve the bodies, so dissections could only be performed during the winter when temperatures were icy
- Therefore, only a limited number of students would have had the experience of attending a dissection in person
- Vesalius's work brought a number of important changes to the study of anatomy
- Most importantly, Vesalius repeatedly stressed the idea that students must not depend upon the teachings of their elders, but must explore the inner workings of the human body for themselves. The truth is under the skin, and is not necessarily hidden in dusty books

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- Also, while working on his masterpiece the Fabrica he discovered that a number of Galen's teachings were wrong. This, he realised, was because Galen had taken his evidence from animal bodies and not human bodies. By delving into the workings of the human body, Vesalius was able to correct 200 previously unquestioned theories, for example that the lower jaw is comprised of one bone, not two as Galen's animal studies had led him to believe

- Vesalius's work is also famous for its detailed and beautifully drafted illustrations. The Humani Corpis Fabrica is a wonderful example of Renaissance art. Its illustrations show the complex formations of the muscles, nervous system, blood vessels, viscera and skeleton. During the Renaissance, scholars and artists throughout Europe were taking a renewed interest in the classical sculptures of Ancient Greece and Rome, and so Vesalius was tapping into the spirit of the times. He employed a range of skilled draftsmen to work on the illustrations, including Jan Stephan Van Calcar, a student of the painter Titian. A number of the drawings in the Fabrica have used classical sculptures, such as the Belvedere Torso, as models. In many of the illustrations the figures are posing in worldly or dramatic positions, and often they stand before beautiful landscapes. In the famous 'muscle men' pictures (one of which is pictured above), the skin and muscles appear to be gradually unwrapping themselves, falling away from the bodies in order to reveal the complicated system of muscles beneath

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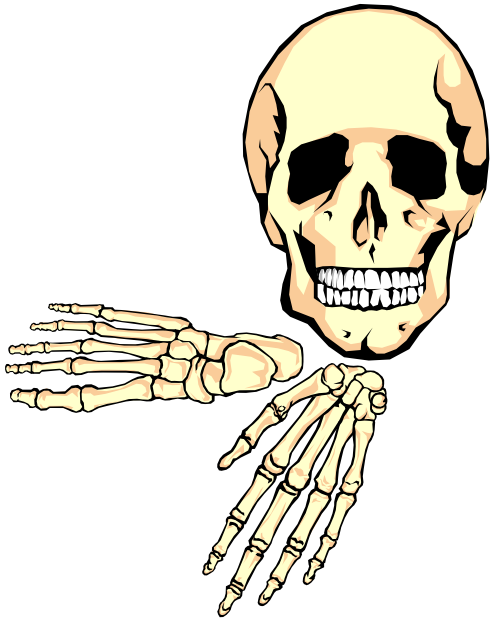
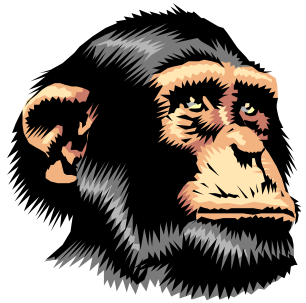
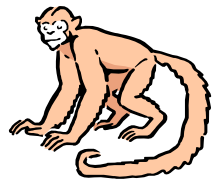
- Ancient doctors had dissected apes in the belief that their anatomies would be the same as a humans. Apes provided them with an opportunity to study the working parts of a body as it was undesirable to dissect a human corpse for religious reasons – Church Law often forbade it. There were few instances when human dissection was permitted. One place did openly allow dissection for a time – Alexandria,in Egypt, which was founded in 332 B.C.. Even the dissection of live criminals was permitted. This relaxed attitude became increasingly rare by the time of The Roman Empire
- By the time of Vesalius though, Church Laws had been relaxed and limited dissections were permitted. This allowed for a much more comprehensive and accurate picture to be formed of human anatomy and physiology (how the body works)







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- Many surgical instruments during the Renaissance were similar to those used during The Middle Ages. For example, the simple knife to cut the flesh and forceps to pull it apart. Saws were used to cut through bone and hooks and hammers helped the surgeon prise apart otherwise inaccessible areas
- As the Renaissance progressed more instruments were developed. They became more sophisticated as surgeons performed more complicated dissections and operations

- Unfortunately, the instruments were not designed to be easily cleaned, often having elaborately carved handles and fittings. This meant that flesh and blood remained on the instruments, thus increasing the risk of infection spreading from patient to patient. Instruments used in a dissection (like those opposite) may later have been used to operate on a patient in a hospital
- If only doctors in the Renaissance had been aware of germs!

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Vesalius's Renaissance anatomy lessons

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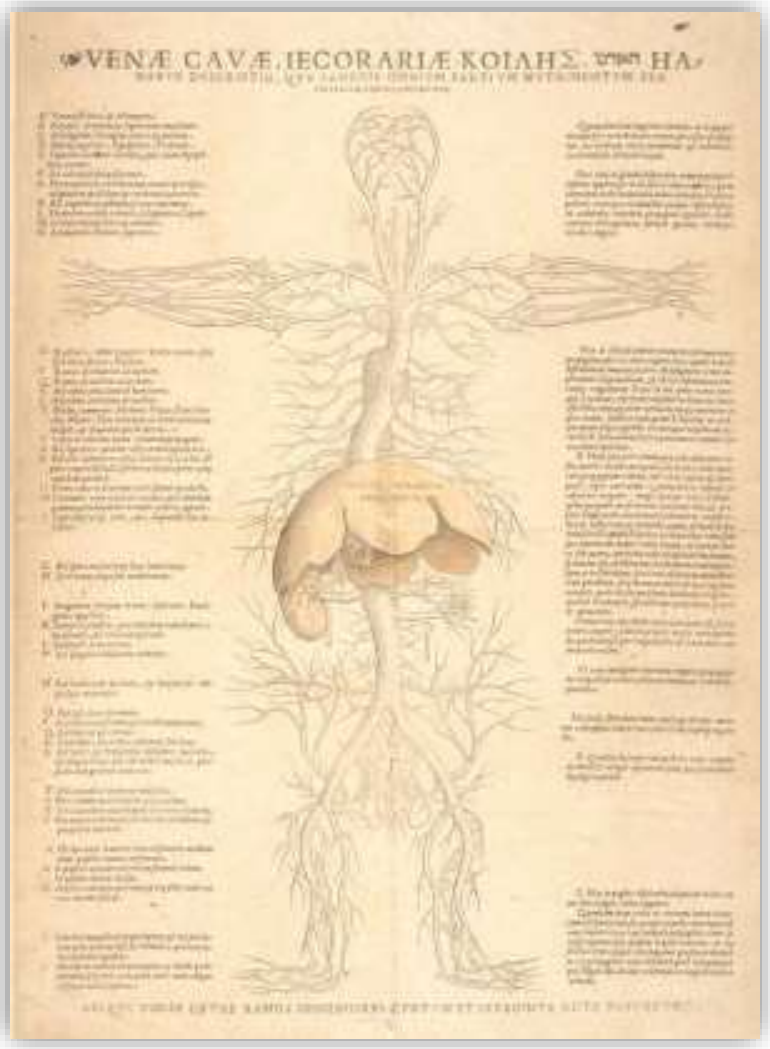

Image courtesy of The University of Glasgow (Special Collection)

- This page of The Tabulae Sex shows one of Galen's ideas
- The liver is shown as a five lobed organ, which is how Galen had described it. In animals this would have been true, but a human liver has only two lobes
- By displaying Galen's ideas next to his own observations within The Tabulae Sex, Vesalius was able to draw attention to some of Galen's mistakes
- He did not at this stage openly reject Galen's ideas, but he was able to present alternative theories for anatomists and doctors to ponder over

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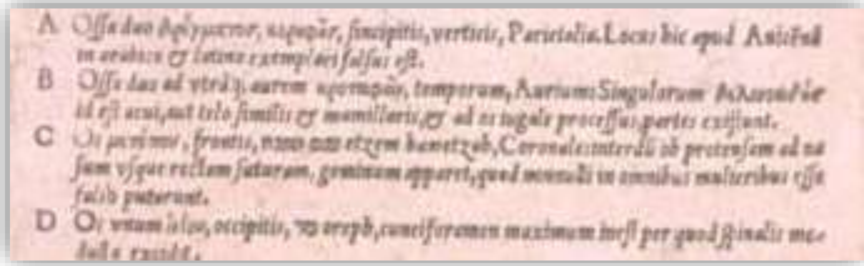
In this image taken from the Tabulae Sex you can clearly see the labelling techniques used by Vesalius. Each part of the skeleton has been given a letter which corresponds with the description of that part of the body in the column to the left of the diagram. This helped anatomists, doctors and students to visualise and understand how each part of the body linked and worked together


A Ossa duo ... sincipitis, verticis, Parietalia. Locus hic apud Avicen... in arabicis & latinis exemplaribus falsus est.
B Ossa duo ad utrumque aurem ..., temporum, Aurium. Singulorum ... id est acui, aut telo similis & mamillaris, & ad iugales processus partes existunt.
C Os primum, frontis, ... Coronalis interdum ob proportionem ad ... sum usque rectam suturam, geminum apparet, quod memoria in omnibus mulieribus esse falsò putarunt.
D Os ... occipitis, ... cuneiforme maximum ... per quod spinalis me...

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Andrea Cesalpino

The archetypes which were to justify the human body as a natural order were often closely connected to the social structure, political order and hierarchical organisation of the Catholic Church. In this sense, the Italian physician Andrea Cesalpino compared, in one of his famous books, the functioning of our body to the organisation of society. The soul (anima) should take the place of the king and the heart would be its venue:

Bene igitur Aristoteles comparavit animal rei publicae, animam autem regi, & cor regiae. Quemadmodum enim in republica administratione omnes ex regis decreto paraguntur, quanvis rex singulis operibus non intersit: sic vivunt caetera membra ex virtute cordis influente in ipsa…

If we translate this image to a religious context, one may see the identification of the soul (anima) with God, origin and impulse of all that exists and, in that case, tha heart would be the Church, the terrestrial representation and seat of this godly impulse

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Realdo Colombo

As strong as in the Renaissance medical culture, we find the idea of a common natural order which entails not only the social organisation, but the cosmos and the human body. We also observe the existence and appearance of representations of the organism in relation to a fluvial or hydraulic image, possibly linked to societies of an essentially agricultural nature

The physiological summary offered by the Italian anatomist Realdo Colombo in his work De re anatomica, libri XV, is a representative example if this fluvial image of the body formed by classical medical thought. Colombo, as a heir of the Galenic physiological tradition, considered that the three main organs – heart, brain and liver- 'are the three fountains that irrigate, together with the humours, the whole territory of the human structure (humani fabrica)'

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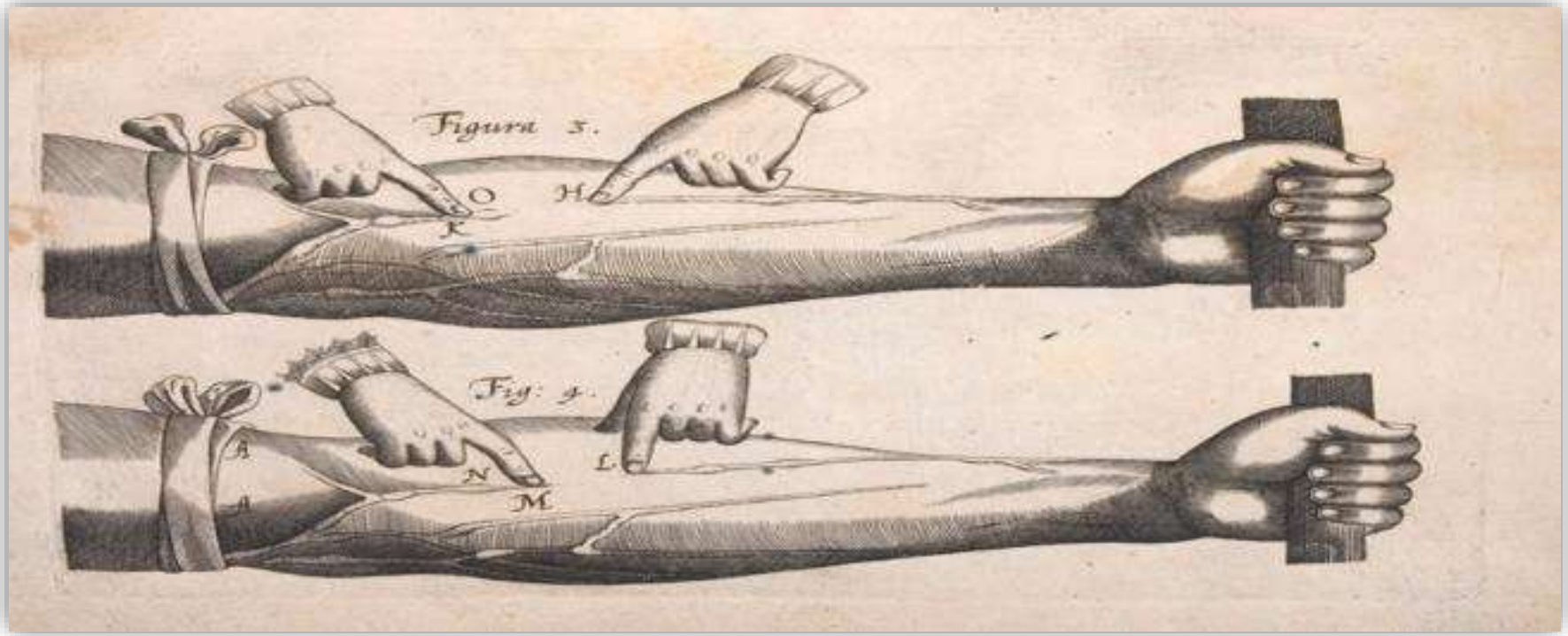

Obviously, the origin of the three fluids engendered by the three organs is the food, delivered to the liver after the first transformation is carried out in the stomach. There, blood is gererated and, once vitalized in the heart by means of a calorific process, it is distributed to all parts through hydraulic systems formed by arteries, in order to irrigate and vivify/fertilize every part of the body. As we know, the same image is to be found in relation to the nervous function. In this case, the brain transfers animal spirits, the carriers of feeling and motion, through the nerves

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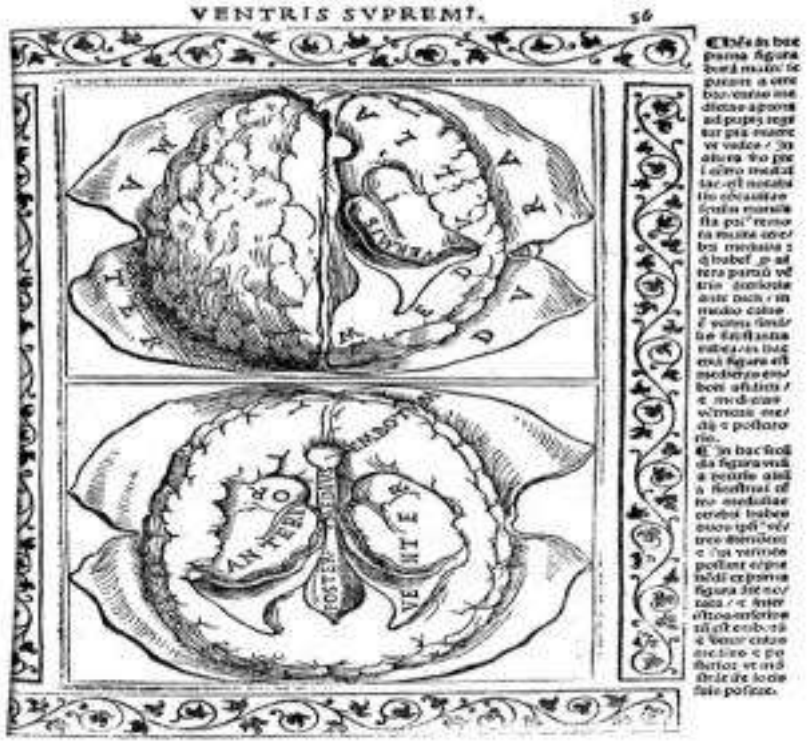
Succus nerveus



Some Renaissance authors began to formulate an idea that would become more tangible and attain wider diffusion during the XVIIth century: the idea that the transmission of the nervous impulse (that is to say, the mechanism of distribution of the animal spirits, carriers of sensitive and motive faculties from the brain) is accomplished by means of a nervous fluid, which will later receive the name of succus nerveus

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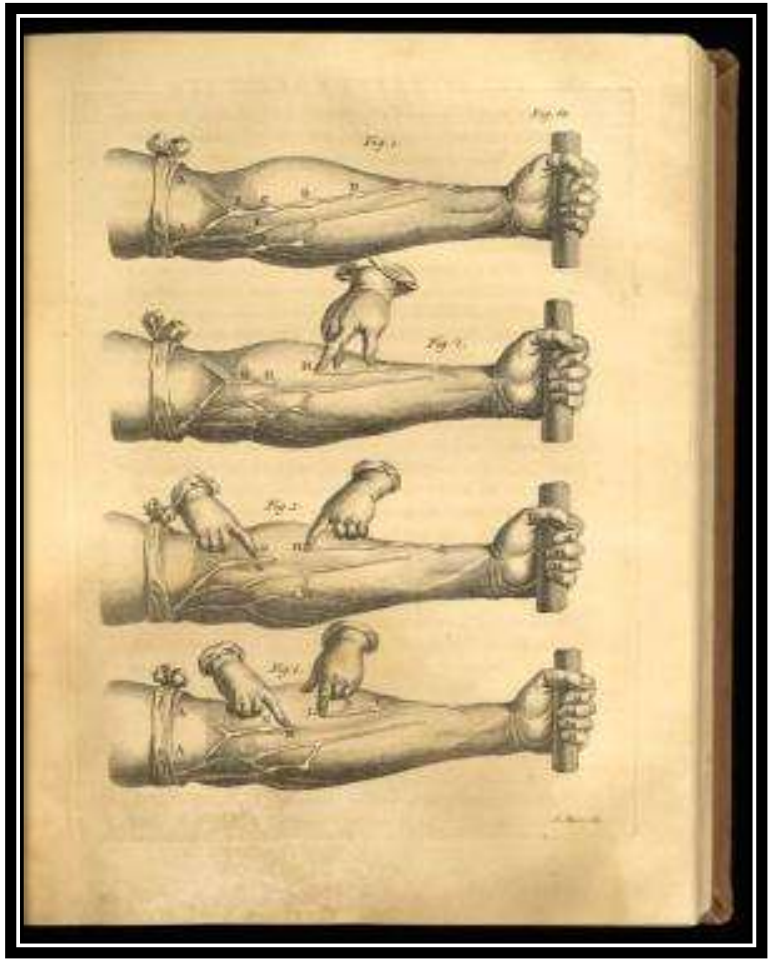
William Harvey (1578-1657)

- Showed that the heart is a double pump and how blood actually circulates

- Harvey is credited with beginning modern physiological research and experimentation



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The Anatomical Theater
Mary G. Winkler

- In her work she observes remnants of the disparate elements that have characterized scientific anatomy from its infancy: scientific detachment, aesthetic fascination, and voyeuristic agitation. Harmonizing these elements seems always to have been a challenge

- Anatomical dissection and anatomical illustration evolved in the context of the long struggle of Western culture to harmonize the seeming dichotomies of body and spirit, emotion and reason. The illustrations reflect that struggle

- Contemporary viewers may read these sixteenth-, seventeenth-, and eighteenth-century woodcuts and engravings with aesthetic pleasure, partly because artist and anatomist collaborated in creating an image of dissection that subsumes any horror of desecration in the drive for ever-increasing knowledge of human nature and human potential

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The Anatomical Theater

- The dissection of human beings for anatomical study was revived in the late Middle Ages after a centuries-long hiatus, the modern science of anatomy was born in the Renaissance
- Figure depicts the traditional medieval practice that separated the professor from the actual work of dissection. Since the thirteenth century, dissection had been practiced in some medical schools, and by the early fourteenth century, it had become an annual feature of the surgical school curriculum in Bologna

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The Anatomical Theater

- The practice of dissection became an ever more established feature of education and as printed illustrated books became increasingly instrumental in the dissemination of knowledge, the collaboration between anatomist and artist grew

- With the pictorial publication of anatomical findings, such as the famous De humani corporis fabrica of Andreas Vesalius (1543), the results of dissection became increasingly public; and, second, as the imagination of the artist was engaged in the activity, new constructions and new visual metaphors emerged

- In an intriguing discussion of early dissections, Jonathan Sawday, a British Historian and Author, suggests some of the ideas and psychological maneuvers that legitimized the new science

- He bases much of his argument on a report by the medical student Baldasar Heseler of a dissection carried out by the great Vesalius in Bologna in 1540

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The Anatomical Theater

- Sawday argues that sixteenth- and seventeenth-century anatomists spearheaded a trend that asserted the naturalness of dissection
- With the collaboration of numerous artists, the anatomists moved further and further from their initial connection with the executioner toward a role as proponents of a new science in which anatomist and cadaver would work together to reveal knowledge of the nature of humanity
- In this role, anatomists would learn to see themselves as carrying out a religious, almost priestly, function
- Early anatomical dissections were theatrical in their interest in probing the essence of humanity
- Early anatomists and their audiences understood that dissection, like the dramatic theater, offered visual spectacle with a verbal lesson: Listener, learn yourself! The illustrations aimed at demonstrating the solemn task of the anatomist. He and his cadaver would offer to the audience knowledge of themselves

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2018-1-ES01-KA203-050606

The Anatomical Theater

- The illustrations all come from anatomical books in the Blocker Collections of the Moody Medical Library of the University of Texas Medical Branch at Galveston
- The photographs of frontispieces and plates that follow are not depictions of a forbidden clandestine activity. On the contrary, each in its own way presents an event that is open, dramatic, and even theatrical (see Figures 1 and 2)

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The Anatomical Theater

- The illustrations respond to the increase in structures built expressly for anatomical dissection, such as the famous theater at Padua (1594), but they also resemble stage sets in actual playhouses like Andrea Palladio's beautiful Teatro Olimpico (see Figures 3 and 4, at the following slide)
- Both Palladian and medical theaters pay direct homage to the amphitheaters of the Roman empire

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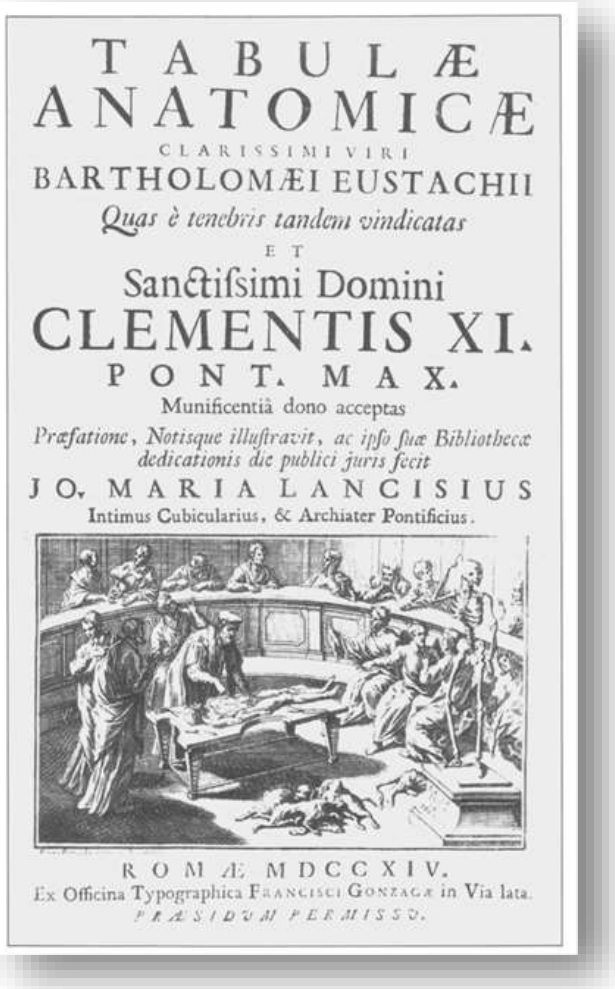
The Anatomical Theater


TABULÆ
ANATOMICÆ
CLARISSIMI VIRI
BARTHOLOMÆI EUSTACHII
Quas è tenebris tandem vindicatas
ET
Sanctiſsimi Domini
CLEMENTIS XI.
PONT. MAX.
Munificentiâ dono acceptas
Præfatione, Notisque illuſtravit, ac ipſo ſuæ Bibliothecæ dedicationis die publici juris fecit
JO. MARIA LANCISIUS
Intimus Cubicularius, & Archiater Pontificius.
ROMÆ MDCCXIV.
Ex Officina Typographica FRANCISCI GONZAGÆ in Via lata.
PRÆSIDUM PERMISSU.

- This scene (figure 4) shows a permanent amphitheater structure
- As in Figure 2, the skeleton presides over the dissection
- The inscription at the base of his podium suggests his function: "Laceros iuvat ire per artus" [It (the skeleton) aids in tracing torn apart (i.e., dissected) limbs]

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The Anatomical Theater also after the Renaissance

- In some illustrations the dissection is staged so as to turn the reader into a spectator or theatergoer
- Noteworthy here is the female cadaver, as well as the elaborate backdrop of the scholarly scene
- The putti with their bubble pipes, the tulips, and the skulls all remind the reader of the vanity of human endeavor and the fleeting of time

Amsterdam, 1642

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The Anatomical Theater also after the Renaissance

Leiden, 1673

- Style of Renaissance classicism to lend authority to the act of dissection
- The players, dressed in the draperies of antiquity, seem almost to be performing a rite
- Note the theatrical gestures and the presence in the foreground of the scholarly recorder of the anatomy

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The Anatomical Theater also after the Renaissance

- Others offer a drama enacted behind a proscenium archlike structure
- This is an unusual rendering of the subject. Curtains part to reveal a deep perspective. On the apron of the stage the instruments of dissection are displayed. The principal actors are a female cadaver and a female figure in classical drapery. Missing are the usual medical dramatis personae

Amsterdam,1734

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The Anatomical Theater

Paris, 1758

- In this instance the connection with the stage and the title of the book are the object of artistic invention
- The artist has created a theatrical tableau to accompany the anatomical "tableaux"

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The Anatomical Theater

- One artist has even included the masks of comedy and tragedy to make obvious what others have only suggested
- The illustrations mingle ideology, fancy, and fact, but they record an aspect of actual practice that we today would find disrespectful or even repugnant: anatomical dissections were often public, ceremonial events

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