

Dutch Anatomy and Clinical Medicine in 17th-Century Europe

by Rina Knoeff

The Leiden University medical faculty was famous in 17th-century Europe. Students came from all over Europe to sit at the feet of the well-known medical teachers Peter Paauw, Jan van Horne and Franciscus de Boë Sylvius. Not only the lecture hall, but also the anatomical theatre as well as the hospital were important sites for medical instruction. The Dutch hands-on approach was unique and served as an example for the teaching courses of many early modern centres of medical education.

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Medicine in the 17th-Century Netherlands

Until well into the 18th century Leiden University was an important stop on the *peregrinatio medica*, a medical tour to foreign countries undertaken by ambitious students from the late 12th century onwards (Leiden was particularly popular in the 17th and 18th centuries). The town of Leiden was an attractive place for students – it had excellent facilities for extracurricular activities such as theatre visits, pub crawls, horse riding and boating. The English student Thomas Nugent stated that

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They [the students] wear no gowns, but swords and if they are matriculated they enjoy a great many privileges. Those that are above twenty years of age, have a turn of eighty shops of wine a year, and half a barrel of beer per month free of duty of excise.¹

Unlike most universities, Leiden welcomed students of all religious affiliations and it was praised for its "great liberty, the freedom of thinking, speaking and believing".² Additionally, the medical curriculum was significantly shorter than in other places, which more than compensated for Leiden's high living costs. Moreover – not unimportantly – 17th-century Leiden was famous for its anatomical theatre and its excellence in clinical teaching.³

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In the early modern Republic, the rise of commerce brought with it an advancement and social upgrading of artisanal skills and knowledge. With regard to the investigation of nature, this particularly resulted in the collection and skilful preservation of natural objects and in the development and perfection of techniques of dissection, vivisection and injection. Initially, the artisanal knowledge needed for these practices was mostly developed and kept outside the universities.⁴ Under the guidance of the Leiden professors Peter Paauw (1564–1617) (→ Media Link #ab) and Franciscus de Boë Sylvius (1614–1672) (→ Media Link #ac) practical skills became an integral basic part of the academic medical curriculum. Paauw and Sylvius were also among the first to employ instrument makers and to instal laboratories (→ Media Link #ad). Sylvius, for instance, established the first ever chemical laboratory at a university. This article analyses the Leiden medical curriculum from the perspective of practical skills and teaching, and focuses on anatomy and clinical

medicine as basic to the Leiden medical curriculum.

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Anatomy

The main place where anatomical dissections took place was the town's anatomical theatre (→ Media Link #ae), constructed in 1591 after the example of Hieronymus Fabricius's (1533–1619) (→ Media Link #af) *theatrum anatomicum* in Padua. Initially the theatre was built for the benefit of the Leiden surgeons who made dissections and examinations there. Under the direction of anatomy professor Peter Paauw, however, the theatre developed into a centre of academic, yet practical medical education. The theatre was built in the *Faliedebagijnkerk*, a church officially designated by the town council for anatomical demonstrations. The university library also moved into the *Faliedebagijnkerk*.

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It is significant that the anatomical theatre was housed in the same building as the library. At the time, natural philosophy, which included medicine and anatomy, was considered as a process of reading the book of nature. And "reading" the human body, the masterpiece of divine creation, was regarded as a most worthy exercise. Early modern anatomy was not, as the current edition of the *Encyclopaedia Britannica* defines it, about "the identification and description of the body structures of living things".⁵ Instead it must be understood as "the premier investigative, experimental discipline in the investigation of the phenomena of life".⁶ Early modern anatomy, in other words, was essentially about the functions of the (animal, vegetative and rational) soul: The anatomist investigated the parts and the organs of the body, the organs being seen as the instruments by which the soul carried out its actions in the body (be it human or animal). By implication, anatomical preparations and collections were as much about the parts that constituted the body as about the often intangible nature and working of the soul. It almost automatically follows that early modern anatomy was embedded in the theological assumption that anatomy demonstrated God's divine handiwork as well as His provident hand in nature (via the working of the soul, God was directly in charge of the body's life and functioning).⁷ Thus, an anatomical dissection had the same function as reading the Bible – it was considered an important means to know God, through the works of His creation.

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For the purpose of instructing students during lectures and dissections, Paauw requested funds for buying a skeleton, for the building of a small shed for airing animal bones from which skeletons could be reconstructed, and for the framing of forty prints after Andreas Vesalius (1514–1564) (→ Media Link #ag), which were used as ornaments in the theatre, as well as for teaching purposes. The professors succeeding Paauw as chair of anatomy followed his example and collected many rare and curious (medical) objects (→ Media Link #ah) for the decoration of the theatre and for the edification of visitors and students. Needless to say, the theatre was only fully decorated at times when no dissections took place.

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For obvious reasons, public anatomical dissections normally took place in winter. Usually (but not always), a demonstration lasted for three days, after which the stench and decay of the corpse made further work impossible. The anatomists worked day and night, light being provided by (scented) candles. Before the dissection started the anatomical subject was covered with two bed sheets, which were later used for transportation and burial. The table itself was covered with a black sheet, which was also used to cover the corpse during intervals in the dissection. First the anatomist made a cross-like incision in the belly, then he took out all the organs and parts of the "lower belly". On the second day, the anatomist moved on to the "middle belly", above the diaphragm – essentially the heart and lungs. On the final day the anatomist explored the brain and sense organs, after which he would move on to the muscles, sinews, tendons and bones. Obviously, this order follows the sequence in which the parts would rot. Afterwards brooms and sand were bought and a charwoman paid in order to give the theatre a good cleaning.⁸

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It has often been argued that the subjects of dissections were criminals. Ending up under the anatomist's knife was seen as a *post mortem* punishment.⁹ This was often the case, but the corpses of poor and destitute people without friends and relatives who had died in the city hospital also found their way to the dissection table. This way at least the costs of coffin, grave and a decent burial were covered. Moreover, as human corpses were scarce, anatomists also

dissected and vivisectioned animals, particularly dogs, calves and pigs. Their anatomies were considered similar to human anatomy, which meant that investigating the insides of an animal would automatically lead to a better understanding of the human interior body.

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The 17th-century anatomical theatre was a centre of excellence not only because of its dissection activities. Also, and perhaps more importantly, the theatre served as an advertisement of the medical curriculum, it was a place for public disputes, and an important tourist attraction (→ Media Link #ai). In the following the anatomical businesses of three different 17th-century professors of anatomy will be linked to the three different uses and audiences of the theatre: (1) Otto Heurnius (1577–1652) (→ Media Link #aj) and the theatre of wonder, (2) Johannes van Horne (1621–1670) (→ Media Link #ak) and the theatre of learning, and (3) Govert Bidloo (1649–1713) (→ Media Link #al) and the theatre of controversy.

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Otto Heurnius and the Theatre of Wonder

In the 17th century the anatomical theatre was big business. The professors not only used the theatre as an advertisement for their professional business, they also used the space for displaying rarities. The theatre, in other words, ideally represented the Netherlands as Europe's *entrepôt* for knowledge of the world – it performed *entrepreneurially*, in the way it gathered objects and knowledge from across the globe and repackaged (i.e. exhibited) them for Europe-wide consumption.¹⁰ As the Amsterdam storehouses accumulated, standardized and stabilized goods for the market, the Leiden anatomical collections were equally important in the accumulation and circulation of anatomical objects and knowledge.¹¹ Moreover, the moral values deemed important in commerce became key values in natural philosophy as well. Research has pointed to the moral values connected to Dutch commerce in order to explain the success of Dutch natural philosophy and its seminal importance for the rise of modern science (→ Media Link #am):

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... a number of values were shared by both merchants and those we would now call scientists, including: travel, seeing things afresh, exchange, commensurability, credibility, the hope of a better material future through worldly activity, and a preference for plain and precise language. Above all, among the values shared by science and commerce were a certain kind of interested engagement with objective knowledge and an attentive appreciation for collective generalizations based on exacting information about the objects in which they dealt.¹²

The knowledge and objects presented in the anatomical theatre relied on these same commercial values. They were objective in both the increasingly standardized processes of preservation as well as in the moral economy which made them meaningful objects. And they were dealt with in lectures and guided tours in which refreshing stories, credibility and the use of plain language were of key importance.¹³ So, students and visitors visiting the Leiden anatomical theatre returned to their home countries with a specific Dutch (i.e. based on commercial values) view of anatomy and the world.

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The collection activities had started under Paauw, but it was thanks to Otto Heurnius that the theatre's collections were significantly expanded. To the initial purchases of Paauw, Heurnius added not only anatomical objects, but also a collection of Egyptian objects, such as mummies, funerary statues and vessels decorated with hieroglyphs. Heurnius' fascination with ancient Egypt was not only medically motivated, but was also triggered by his interest in the hermetic writings. Like so many of his contemporaries, Heurnius hoped to catch a glimpse of the pre-lapsarian wisdom of Adam, as handed down and recorded (in hieroglyphs) by the Egyptian priest Hermes Trismegistus.¹⁴

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Most importantly, Heurnius decided to admit visitors to the theatre when no anatomical dissections were taking place. In so doing he enhanced the status of the theatre's collections, not only attracting physicians, but also lending status to the city of Leiden as protagonist of the arts and sciences. Quickly, the anatomical theatre was considered an attraction not to be missed. Travel guides praised the collections extensively, and upon arrival in Leiden visitors were immediately

confronted with signs on the quayside (since all important Dutch towns were connected by rivers and canals, the usual and most convenient way of travelling was by canal boat) indicating the way towards the theatre. Catalogues were printed and translated into several languages, and it was said that "even if one had a thousand eyes, a full day would not suffice to see all the mysterious and curious objects".¹⁵

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The public character of the collections was rooted in a tradition of *vanitas* messages, reminding the visitor of the beauty of creation, the fragility of life, biblical stories, and the punishment of criminals. For this reason the collections not only included human and animal anatomical preparations, but also medical and cultural items such as surgical instruments, Egyptian mummies and foreign idols. The objects making up the Leiden anatomical collections meant more than one thing at the same time. They obviously represented a kind of "useful" knowledge about the structure and working of the body as well as about methods of preparation. Yet on another and perhaps more important level they represented the secret working of the soul, and they visualized moral and biblical lessons – matters that were of concern not only to anatomists, but were relevant to the public at large. For instance the "big mummy", collected by Heurnius and a major attraction in the anatomical theatre, fulfilled at least the following three functions: (1) it represented a method of preserving human remains; (2) it signified the presumed medicinal virtues of embalmed corpses and body parts, and (3) it stood for the biblical story of Joseph's embalming in Egypt.¹⁶

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In particular the stories attached to many objects made the theatre worth a visit. For instance, skeletons were a normal sight in an anatomical collection, but stories turned them into an attraction. Even the catalogue hinted at the stories, so tourists stood eyeball to eyeball with:

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A skeleton of an ass upon which sits a woman that killed her daughter; the skeleton of a woman of 17 years old who murdered her son; the skeleton of a gardner that hang'd himself; the skeleton of a man, sitting upon an ox executed for stealing of cattle; a young thief hanged, being the bridegroom whose bride stood under the gallows.¹⁷

In all cases stories intensified the visitor's cultural experience; that is, preparations related to stories that were familiar, amusing or sensational. Stories forced visitors to pause. They invited visitors to contemplate the objects and actively moulded them into the visitor's lived experience.¹⁸ So, for instance, the brothers von Uffenbach, visiting the collections in 1711, commented on a big snake (and praised God that such snakes were not seen in their garden), a shirt made of entrails (which they considered too short), and the skeleton of a whale (which made them think that Martin Luther (1483–1546) (→ Media Link #an) had wrongly translated "big fish" as a "whale", for Jonah would have never fitted through the gut).

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Ultimately the use of the anatomical theatre as a touristic site as well as the growing importance of private dissections led to a rift between the anatomical theatre as a place for anatomical instruction and the anatomical theatre as a public museum – a separation which was complete in the 1720s when Bernard Siegfried Albinus (1697–1770) (→ Media Link #ao) conducted his dissections in private and decided to keep his preparations in the new Leiden anatomical cabinet.

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Johannes van Horne and the Theatre of Learning

Johannes van Horne occupied the chair of anatomy and surgery during the theatre's most fruitful years. In the early years, the theatre was primarily used for big, sensational anatomical demonstrations – events which did not take place very often. Although the number of dissections did not significantly change under van Horne's dedicated leadership, the theatre became increasingly associated with serious anatomical teaching and research. It became an important advertisement for the new anatomical understanding of the nature and function of the circulation of the blood and other humours.

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After William Harvey's (1578–1657) publication of *De motu cordis* (1628),¹⁹ in which Harvey argued that the heart works like a pump and that the blood circulates through the body, Dutch natural philosophers were particularly eager in discussing and implementing the new ideas.²⁰ Stimulated also by the Cartesian mechanistic view of the body, they were very busy investigating the fabric of the body, and anatomical experiment was their most important means to do so. In Leiden, van Horne was among the first to take up and teach this new anatomy and physiology. The anatomical works of his students – among them Jan Swammerdam (1637–1680) (→ Media Link #ap), Reinier de Graaf (1641–1673) (→ Media Link #aq), Frederik Ruysch (1638–1731) (→ Media Link #ar), Cornelis Bontekoe (1648–1685) (→ Media Link #as) and Nicolas Steno (1638–1686) (→ Media Link #at) – are still known today.

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In 1651, when van Horne was appointed professor, the theatre was in decline. In order to restore the teaching of anatomy to its old glory, van Horne not only performed public anatomical dissections, he also taught his more promising students in private. These small gatherings proved very fruitful. Unlike during the big anatomical demonstrations, students were encouraged to experiment themselves. Ultimately the experimental methods taught by van Horne resulted in the discovery of injection techniques – developed in order to make anatomical preparations – which made anatomists like de Graaf, Ruysch and Swammerdam very famous.

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The forerunners of these famous preparations could already be found in the collections of van Horne. For the purpose of teaching and research he made his preparations in such a way that the individual organs were clearly visible. To this end he removed all the flesh, and experimented with injection techniques in order to fill the vessels with wax or mercury. Moreover, he replaced the old skeletons in the theatre with the skeletons of three adults, a child, and those of an ox, a horse, a donkey, a dog, a boar, a ram and an ape, and also added a dried human corpse to the collections. These items were all anatomically prepared by van Horne's contemporary Louis de Bills (ca. 1624–1671).

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Van Horne's association with de Bills was significant. Notwithstanding the frauds with which de Bills was later associated, de Bills was generally considered *the* anatomist of bloodless dissections and life-like anatomical preparations. Association with his work meant the promotion of Leiden anatomy as *the* place of cutting-edge anatomical research. Apparently it worked: not only did students flock to Leiden, the Leiden anatomists also became part of international networks of natural philosophers discussing new discoveries in anatomy.

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It has been suggested by historians of the Leiden anatomical theatre that van Horne considered his private activities more important than his duties in the anatomical theatre. Yet, although much anatomical work was done in the professorial quarters, student rooms and even the post-mortem room of the city hospital, van Horne enhanced the theatre's international renown as a place of learning. After all, the theatre served as an entrepreneurial advertisement of his anatomical business. To this end van Horne performed as many public dissections as the number of corpses allowed. So, although the character of a theatrical dissection was completely different from the collaborative work done in private rooms, the theatre nevertheless served as a public signboard advertising the new Leiden anatomy performed in smaller circles.

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Govert Bidloo and the Theatre of Controversy

With the appointment of Govert Bidloo (→ Media Link #au) the theatre entered a stormy phase. Bidloo was a famous physician who had studied surgery and medicine before being appointed lecturer in anatomical dissections in The Hague. In 1694 he became professor of anatomy and medicine at the University of Leiden, but he was not very well liked and he often entered into heated controversies with colleagues as well as protagonists of the arts. Sometimes the conflicts were so hot-tempered that Stadtholder William III (1650–1702) – with whom Bidloo had an intimate understanding, the latter reportedly "dying in Bidloo's arms" in 1702 – had to bail him out. William III even prevented Bidloo from being thrown into prison after a particularly vicious row.²¹

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Bidloo was probably not the best person to look after the anatomical theatre. The curators of the university had to reprimand him on several occasions for his neglect of lecturing duties, in particular when he went off to England as physician to the Stadtholder. The anatomy servant also complained that Bidloo regularly took preparations home without returning them to the theatre.

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However this may be, Bidloo started his career in the anatomical theatre with enthusiasm. At the time Bidloo was one of the most promising anatomists in the Netherlands. A decade earlier he had published his *Anatomia humani corporis* (1685) (→ Media Link #av), a beautiful and "realistic" anatomical atlas which was meant to replace all contemporary anatomical atlases to date. Within a month of his appointment Bidloo wrote to the curators that the theatre urgently needed to be refitted with items (such as linen, the black cloth for covering the cadaver, dishes, instruments etc.) that had gone missing over the years. He also set out to replace damaged and decayed anatomical preparations, and requested that the windows be covered with curtains or shutters, presumably because the sunlight damaged organic preparations.

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Three years later students started complaining about Bidloo's haphazard teaching in the city hospital. This was due to his frequent attendance at the sickbed of the Stadtholder and the latter's family. This happened most often during the winter months, and therefore also interrupted Bidloo's anatomical demonstrations. Bidloo's anatomical teaching was further jeopardised by a severe lack of corpses. The problem was even more urgent than before because the Amsterdam city magistrates and bailiff refused to hand over the corpses of executed criminals. Eventually the excellent anatomical teaching which had given Leiden such a good name was in such a bad state that the university curators happily accepted the proposal of the Amsterdam city lithotomist Johan Jacob Rau to perform anatomical demonstrations (for free) in the Leiden theatre.

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Bidloo, even though he was neglecting his duties, was not happy with the way things went. He quarrelled with Rau as well as with the well-known Amsterdam anatomist Frederik Ruysch, although according to contemporaries, Ruysch was as much to blame. The quarrels between Bidloo and Ruysch nicely demonstrate how controversies were battled out in the anatomical theatre. It shows that a demonstration was far from being a quiet affair, with anatomists respectfully gazing at and working on a corpse. On the contrary: anatomists shouted at each other, they held organs in each other's faces, and were incredibly rude in calling each other names. It would happen that in the heat of the debate they waved organs, bones and tissues about. At some point Ruysch was so angry that he compared the anatomical theatre to a battleground. He argued: "soldiers, when they hear the approach of the enemy, shout, To arms, To arms! I say here likewise, Ad visum, Ad visum! To looking, To looking!"²²

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The controversy between Bidloo and Ruysch illustrates the fact that the visual evidence gained during an anatomical dissection was hardly ever conclusive. Of course, it was notoriously difficult to make out any anatomical detail in the bloody mess on the table, so anatomists primarily saw whatever they thought they should see. Controversies were inevitable, and the academic mores (being completely different from today's courteous attitude in solving professional differences) allowed anatomists to rudely battle it out in front of big audiences. Again, the anatomical theatre was used to promote one's own anatomical views, and vulgarly slagging off others was seen as a legitimate and effective way of doing so.

▲ 29

Clinical Teaching

The Leiden medical curriculum was also famous for its bedside teaching. As early as 1575 the theology professor Wilhelm Feungraerus recommended to medical faculties that students should perform "fewer disputations and speeches", and instead pursue "the inspection, dissection, dissolution, and transmutation of living plants, bodies and metals". This practice was derived from Padua, where reformers had advocated a return to the ancients, with their emphasis on anatomical dissections and bedside teaching. Feungraerus stated that it was indispensable for students to "follow a very experienced and learned physician, to see, admire and imitate under his guidance the treatment of the disease ac-

ording to the directives of Hippocrates and Galen".²³

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Despite the advice of Feungeraeus from the 1570s, it took another seventy years before the University Curators decided to assign twelve beds, divided into a male and female ward with six beds each, to the university medical teacher. Their action was prompted by the introduction of clinical teaching at the University of Utrecht, which threatened to overtake Leiden as the Dutch centre of medical excellence. Two professors in charge of clinical teaching were to lecture in the hospital (→ Media Link #aw) twice a week. The day-to-day care of the patients was left to two city doctors. They were obliged to refer interesting cases to the professors and keep written reports of selected cases. Students had unlimited access to the reports as well as to the patients. In this way students could learn about the signs and symptoms of internal diseases, particularly from the urine and the pulse, as well as about medication and the prescription of cures. For fear of losing students (either to the disease itself or from fear of catching the disease) contagious diseases were excluded from the practical curriculum. Should the patient die, the hospital had a special post-mortem room and a surgeon on stand-by for dissection purposes. The surgeon performing the dissection had to master Latin, so that foreign students were able to follow the proceedings.

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The first professors assigned to the *collegium medico practicum* were Heurnius and Ewaldus Screvelius (1575–1647). From various notes on patients it is clear that from 22 December 1636 onwards patients were used for demonstrations in the hospital. Heurnius was particularly keen on involving the students who were present on the slightly elevated galleries behind the beds. He asked them to comment on the nature, causes, prognosis and therapy of the disease. By means of a dialogue Heurnius would lead them to the right diagnosis. The students, however, hated the interactive method. The possibility of giving a wrong answer could lead to great public embarrassment and loss of reputation. Heurnius even had to stop teaching at the bedside, as "the students strongly disliked it".²⁴ He then confined himself to examining and diagnosing patients without directly involving his students.

▲ 32

Leiden clinical teaching is mainly associated with the name of Herman Boerhaave (1668–1738) (→ Media Link #ax), the famous Dutch medical teacher. Story has it that the Leiden medical curriculum was very popular for its hands-on bedside teaching and that Boerhaave was the *spiritus rector* of a great increase in quality. This heroic story, however, is a 19th-century invention.²⁵ Rather than Boerhaave, it was Sylvius who was the champion of Leiden bedside teaching. Sylvius, born in Hanau in 1614, studied medicine at Sedan, Jena, Wittenberg and Leiden, where Otto Heurnius was one of his teachers. During the 1660s and 1670s he applied Heurnius's idea of diagnosing patients in dialogue with students, and made hospital visits central to the medical curriculum. Instead of only two days a week, Sylvius visited the hospital daily. He involved his students in his rounds, of which he made careful notes afterwards. In addition to his rounds, Sylvius also considered autopsies crucially important to clinical teaching. He taught that only through opening the corpses of deceased patients could the "injured part and unnatural constitution" be demonstrated and diseases explained. So important were dissections for Sylvius' medical practice (in the funeral oration it was said that he performed over 300 autopsies) that he requested more stands in the dissection room for the use of the students – a fact which shows how closely students were involved in hands-on medical teaching.

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Sylvius' autopsies as part of clinical teaching were so popular with the students that it made the hospital an important centre of anatomical knowledge and activity. Moreover, it has been proposed that the dissections performed in the *collegium medico practicum* were more important for the medical curriculum than the activities in the anatomical theatre.²⁶ There is considerable evidence to suggest that the opening of bodies was not only directed at finding the seats and causes of diseases, but also at the showing of a normal, healthy anatomy. Just as Johannes van Horne relocated his most important anatomical activities to his private home, his colleague Sylvius used the hospital for the demonstration of his *anatomia nova* (the new anatomy directed at discovering and unravelling the smallest vessels and structures of the body), which called for a much closer observation of intricate anatomical structures than the traditional settings of the anatomical theatre could ever provide. So it was in the intimate setting of the hospital that Sylvius presented the illustrations of Reinier de Graaf's treatise on the female reproductive organs at the same time as "the body of a deceased person, especially prepared and dissected for that purpose ... to show the illustrations to anyone, in order for them to judge their veracity".²⁷

▲ 34

Sylvius' teaching and research projects were all about understanding the consequences of Harvey's discovery of the circulation of the blood for the functioning of the body. He was particularly interested in the circulation of the bodily fluids (blood, serum, lymph), the way food was absorbed into the bloodstream and the working of the lacteal vessels. His ideas were a mixture of Cartesian mechanics and Paracelsian iatrochemistry. He strongly believed that the body worked as a kind of chemical laboratory in which chemical substances reacted and caused the body's life and motion. Yet Sylvius' iatrochemistry was based on Cartesian mechanics, with the particles of substances reacting in a mechanical way, and the bodily fluids pulsing forward due to the mechanical pumping of the heart.²⁸ Sylvius also believed that many diseases were caused by failures in the mechanical working of the body. For instance, when a vessel became clogged up because of a fluid becoming too thick, the whole circulatory system would be affected. So, rather than ascribing a disease to a misbalance of the bodily humours, Sylvius located the origin of an illness in specific organs, tubes and vessels, and his treatment was almost always directed at altering the liquidity of the bodily fluids in specific parts of the body. It follows that Sylvius' attention to individual organs as well as his belief in chemistry as a basis for medicine made the activities in the hospital, the dissection room and the chemical laboratory central to his medical teaching.

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Sylvius' model of clinical teaching was internationally known. Students from what is now Germany were particularly attracted to Sylvius' teaching in the hospital. And the Leiden model, so successfully advocated by Sylvius, was also praised in England. Charles Goodall (1642–1712), in his *The College of Physicians vindicated* (1676), strongly recommended that the College promote the inclusion of hospital teaching, after the model of Leiden, in the medical curriculum.²⁹

▲ 36

After the death of Sylvius in 1672, the hospital's clinical teaching declined. It reached rock bottom at the beginning of the 18th century when Herman Boerhaave was in charge of clinical teaching: the beds in the *collegium medico practicum* were empty most of the time. In the period between 1711 and 1737, during Boerhaave's most successful years, there was a serious decline in the number of patients admitted to the hospital. Between 1721 and 1736, only three patients were admitted on average each year, and from 1732 to 1736 no patients were admitted at all!³⁰ Presumably this had to do with Boerhaave's illnesses in 1731 and 1735, but it nevertheless shows that he cannot have been very active in the hospital. In 1737, numbers picked up again. Boerhaave started a lecture course on clinical practice, accompanied by visits to the hospital. But even then, only 25 patients were admitted over the year, which is considerably fewer than the patients admitted when Sylvius was in charge of clinical teaching. Rather than teaching in the clinic, Boerhaave's practical medicine was directed at diagnosing some internal condition and was followed by advice on diet, lifestyle and remedies. This could be done by letter as well as at the bedside.

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Indeed, Boerhaave's practical medicine had so little to do with medical practice that he was severely criticised by his colleagues and even his students. Frederik Ruysch, for instance, could get very annoyed about Boerhaave's armchair medicine, which, in Ruysch's view, often had no grounding whatsoever in what could actually be seen in bodies and body parts.³¹ Albrecht von Haller (1708–1777) (→ Media Link #ay), perhaps Boerhaave's most famous student (→ Media Link #az), studied in Tübingen, Leiden, France and England before returning to his native Switzerland. He was well known for his physiological ideas on irritability and sensibility. With regard to Leiden he never mentioned the Caecilia hospital as a place of interest, in contrast to other university institutions such as the "Academy" building, the botanical garden, the university library and the anatomical theatre. Even Boerhaave himself complained to his friends about his tiresome medical practice. In 1723 he wrote to his friend Johannes Baptista Bassand (1680–1742) (→ Media Link #b0) that his patients and students were standing in the way of his work and that he "wished to have nothing more to do with practising medicine".³²

▲ 38

Clearly, the success of the 17th-century practical approach in anatomical and clinical teaching had come to an end with Herman Boerhaave. Boerhaave's successful approach – the reason why he was eventually called the teacher of Europe – was pedagogical. As the French had it, Boerhaave was "a schoolmaster, a physician whose reputation was based on the ease with which students absorbed his teaching rather than the success he enjoyed in treating the sick".³³ In a way, Boerhaave embodied the Dutch storehouse mentality. He did not discover anything new, but was extremely good in keeping and transforming existing knowledge in a new and more easily consumable format. Without doubt, the real champions of the Leiden anatomical theatre and the Caecilia hospital were Paauw, van Horne and Heurnius and, above

all, Sylvius. They were among the first to adopt a hands-on approach for the medical curriculum. They made Leiden University internationally famous for its anatomy and clinical medicine.

▲ 39

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Appendix

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28. ^ Beukers, Mechanistische Principes 1982, p. 12.
29. ^ See Knoeff, Boerhaave at Leiden 2010, p. 278.
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31. ^ idem, Boerhaave vs. Ruysch 2006.
32. ^ Boerhaave, quoted in Knoeff, Boerhaave at Leiden 2010, p. 274.
33. ^ The French physician Louis de Lacaze, quoted in Williams, A Cultural History 2003, p. 152.

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