

# ‘Mortal bodies and immortal science:’ Gerard de Lairesse’s anatomical prints as mirrors to societal transformation

Dr Maria Ulrika Rossi (The University of Glasgow)

## **Abstract:**

*In my paper I discuss Early Modern Dutch medical prints and their iconography as a reflection of societal shifts from the provincially focused communitarianism of an older world to an endeavouring, bureaucratised and capitalist modern world. This transformation from pre-modern to modern was reflected in medical prints in three key ways. Firstly, the images’ existence related to contemporaneous advances in medical education, exemplified by anatomy teaching at newly founded universities across the Seven United Provinces. In the context of an emerging market for images, medical illustrations were widely disseminated, representing a gradual popularisation of the transmission of knowledge. Prints, as well as public anatomy lectures held at universities, provided a new form of spectacle to a popular audience newly fascinated with concepts of the body and its materiality. Secondly, such imagery provided captive audiences with an illusion of moral control. Early Modern Dutch society was obsessed with the optics of decorum, exemplified by the ritual habit of scouring the stoop that did not appear to respond to necessity. Promoting an appearance of moral control had to do with simultaneous efforts at defining a Dutch national character, emerging after protracted wars with Spain as a call to rally somewhat disparate provinces under common, nationalistic auspices. Creating the outward image of good, moral aptitude became central in this nation-building effort. The use of medical imagery in connection with proving one’s inner cleanliness (or another’s dirtiness) also resonates with the Early Modern myth of the transparent body, a concept which wavers in-between worlds: An old world informed by superstition, and a new one, invested in collecting objective information. Finally, relating to this distinctly modern effort at creating a body of evidence-based knowledge, anatomical prints represented a shift to the optical mode, where information is gathered and transmitted by means of sight. Reproducing realistic renderings of the human body was pivotal in establishing a visual corpus around worlds being uncovered.*

**Keywords:** *Medical history, art history, Early Modern Dutch society, medical prints*

‘I make the supposition that the body is nothing else but a statue or earthen machine, that God has willed to form entire, in order to make it as similar to us as is possible.’

(Descartes 1972, pp. 2-4)

Philosopher René Descartes (1596-1650) influenced an early modern shift in how medicine and adjacent fields treated the human subject. Perceptions of the body shifted from those of a religiously controlled entity forbidding human intervention, to a distinct, machine-like form whose inner workings could be schematized and understood. In this paper, I map out contemporaneous advances in the philosophy of science as they became reflected in artistic autopsy prints. The very existence of such prints is telling of a shift in how bodies became seen: Quasi-mechanical and newly instrumentalised in learning. It was a new practice to carry out autopsies and to be able to picture the deceased with observational accuracy. To methodically map out bodily systems was reflective of fundamental philosophical shifts taking hold and being extrapolated into the medical field. First, I will consider the prints as a dualistic reflection moving alongside this continuum of change. Their formal dualism was borne out of their existence at the cusp of societal change, going from one steeped in religious superstition to one invested in objective knowledge. Second, the prints mirrored moral customs and fixations characteristic of early modern Dutch society undergoing religious and societal tumult. I will look at ways anatomical prints and public autopsies were located within this culture of prescriptive societal control. Lastly, I will consider the prints’ existence in the newly conceived optical field, and how the new focus on optics represented a crucial shift in contemporaneous perceptions of reality, generating ideas about how this reality could be recorded, observed and possibly controlled.

This new rationalism was defined by a Cartesian understanding of the limits of perception, and a subsequent striving to analytically describe the body’s mechanical properties in order to gain a more informed grasp of physiology and by extension, of the world. Descartes, while not a physician, was interested in and wrote extensively on the body, delineating a dualistic approach whereby the soul and the body were two separate entities. This led to a renewed perception of the human body, emerging as an instrument for learning and a site for scientific advancement. (Forsius 2001, p. 86) Descartes’ dualism was a freeing framework appearing in distinction to a prior notion of the body as intricately bound with the human soul. As such it could not be disturbed after death. The new rationalistic perspective allowed for research to be freed from religious constraints that had forbidden autopsies and the proliferation of anatomic prints up until that point. This paper contextualises engravings based on drawings by artist Gerard de Lairesse, created for anatomist and surgeon Govard Bidloo’s (1649-1713) anatomical atlas *Anatomia Humani Corporis* 1685).

*Anatomia* comprised of 105 plates and was divided into sections on the head, the trunk, the stomach and the viscera, the womb and fetus, the limbs and the skeleton. Its images were drawn by de Lairese and engraved by Abraham Blooteling and the brothers van Gunst. (Bernez 1994, p. 209) Its images employ a stylised baroque rendering, with decorative props and detailing, contrasting with the sober description of the bodies and their internal structures. This mixture of style and purpose reflects a desire to stay true to historicist style while looking forward. In the Netherlands, the role of the church in scientific matters was being reconsidered. The country was religiously multiple and divided. Its Southern provinces reigned under the Spanish Crown embraced Catholicism while the reformed North officially adopted Calvinism. The prints analysed here were produced north of this divide. Northern attitudes were relatively liberal, enabling autopsies to be routinely carried out. This gradually inched the medical profession from a realm of wonder and belief towards ratio and pragmatism, a shift within which the unconventional Bidloo treatise is nestled. Netherlands had rapidly gained a central status as a trading might, with its seafaring, trade and fishing ventures bringing considerable affluence. With plenty came advances in knowledge and cultural production, exemplified by treatises Descartes published locally: *Discours de la méthode* (1637), *L'homme* and *Un traité de la formation du foetus* (published posthumously in 1662). His physiological meditations remained invested in theism and doubted sense-based observation as solid scientific basis, while looking into modernity by suggesting that the body, separate from the soul, consists of quasi-mechanical systems that as such could be observed, schematised and controlled.

I first became interested in early modern medical prints when I encountered an early copy of Bidloo's *Anatomia Humani Corporis* at the Osler Library of the History of Medicine. Its anatomy illustrations struck me as pragmatic and modern, drawn accurately from direct observation of dissected bodies. The baroque engravings that strove for representational accuracy displaying musculature, fasciae and tendons laid out and duly numbered made a lasting impression. Since then, I have investigated what canon this practice of drawing the interior of bodies, seemingly an early form of postmortem imaging subscribes to, and what these images tell us about the contemporaneous moment, pivotal for understanding the structures making up a body. Indeed, the lines of inquiry around medicine moved from superstitions and religiously controlled practices towards optically directed and empirically guided observations. This was reflected by physicians' practices of information collection and recruitment of artists to document findings. The contemporaneous moment was key for dissemination of printed imagery. Early modern print production and trading were saturated fields with Netherlands particularly an important centre of production and circulation. (Hoftijzer 2015) Susan Kuretsky pointed out that Bidloo's book lay

between viable worlds being ‘too large and expensive to sell widely to general readers,’ and furthermore ‘not considered complete or accurate enough [...] for scientific use.’ (Kuretsky 2014, p. 12) De Lairese’s prints rest between idealised images and functional diagrams geared towards a select, medically trained audience. The prints’ existence remains a historic curiosity which charts the beginnings of routine dissection as method, reflecting on the broadening of medical practices to newly encompass observation and evidence-based learning, while meditating on the renewed role of medical professionals as active extrapolators.

### **Anatomical engravings reflecting contemporary knowledge economies**

Musician and painter Gerard De Lairese (1641-1711) was born in Liège to an artistic family. His father was a painter and he trained in the most prestigious art form of history painting, drawing inspiration from the classical world. Known as ‘the Dutch Poussin,’ de Lairese was drawn to antique and allegorical motifs and included some in the anatomical images he produced for Bidloo. (Bernez 1994, p. 208) De Lairese used classicizing poses throughout and some of the architectural and object detail in the images, vases, cloths, other ‘props’ also come from that world. In figure I. (appendix) we see a skeleton holding a drape and stepping into a tomb. In its background looms an imposing obelisk structure with Egyptianate detailing. Obelisks symbolised rebirth after death, and the presence of a skeleton here represents a more literal involvement of death symbols. Such visual language is reminiscent of *vanitas* or *memento mori* imagery, widely rehearsed in Netherlandish still life painting at the epoch. The role of *vanitas* elements was to act in a largely Christian context as a warning against excess and earthly pleasures, representing coded meanings in a society invested in cementing morality into the pictorial arts. Skulls in paintings acted as reminders about life’s ultimate transience and underlined the importance of a moral life. (Knoeff 2012) Here the skeleton occupies a more complex role, being nestled into both an anatomical and a historicist visual context. The picture shows allegorical props and elements drawn from the context of *vanitas*, as well as showing a history painter’s fluency in ancient cultures and architectural symbolism. A painting de Lairese created in 1665 for the city of Amsterdam, *De Steedenmaagd van Amsterdam* also rehearses obelisk symbolism as a backdrop to his allegorical figures. Motifs from history painting were reused in the new scientific context of *Anatomia*. As an introductory plate to the volume, the skeleton plate acted as a bridge between the metaphor-rich worlds of death and rebirth, owing to a historicist symbology despite espousing rational and scientific elements by purpose.

As a history painter de Lairese was interested in virtuous representation through bodily perfection. Bernez has pointed out that for de Lairese, antiquity was the pinnacle of virtue and when drawing from a human model the artist ‘must not be afraid of correcting nature.’ (Bernez 1994, p. 209) To note this is important because artistic interpretation possibly placed anatomical accuracy in danger. We can however detect an intention to be accurate in the detailed rendering of the skeleton’s bones, represented with great attention to detail and duly indexed for later explanation. The detailed and true-to-life representation of the skeleton attests to an educational intention. Its surroundings act as an aestheticising backdrop — establishing a visual context for educated audiences who would have encountered death themes both in history tableaux and muchrehearsed *vanitas* imagery. Allegory of death features strongly, but it is newly relegated to a supporting role around the skeletal and hybrid main-character-cum-learning-prop.

As well as persisting in an allegorical role and acquiring a new one steeped in pragmatism, the prints in the Bidloo treatise are curiosities, opening up familiar worlds in unfamiliar ways. In the context of an emerging market for images and other luxury objects, medical illustrations were increasingly disseminated, reflecting a gradual popularisation of knowledge transmission. Anatomy prints and lectures provided a new form of spectacle to an audience fascinated with concepts of the body and its materiality. The Bidloo treatise features many images of stillborn fetuses of different developmental stages and sizes, and a plethora of pregnancy images. These are presented with intricate detailing to underline the presence of distinct body tissues. In figure II. (appendix), a piece of paper is placed under the placenta to amplify its translucent texture, exemplifying the artist’s interest in observational accuracy and underlining *material* properties. Sixteenth-century German imagery showing anomalous and potentially complication-prone fetal positions adopted a more abstracting approach. Given that their purpose was also educational, Rösslin’s earlier obstetric depictions seen in figure III (appendix) remain unrealistic from a multitude of viewpoints. The focus was on aesthetics and fetuses are displayed smiling, with full heads of hair, their posing in the supposedly spacious, balloon-like wombs giving the impression of being swept up in motion. In contrast, the Bidloo plates aim high on accuracy and completeness, while aspiring to a marginal degree of prop-based aestheticisation. The Bidloo images favored a materially based world of empiricism and realism, in a move reflecting the Age of Observation and catering to an increasingly informed and curious audience.

The relegation of allegory to the background is reflective of changes in academic medicine. University medicine had been taught as one of the humanities, and physicians received thorough

groundings in classics. Medical training was on the cusp of pivotal changes whereby a new pragmatism replaced the religious superstitions having prohibited autopsies. Special theatres were built to house anatomy lessons. These sought to provide students with a better understanding of the body's inner workings but as Jose Van Dijck pointed out, the focus was on the anatomist, not the cadaver. (Van Dijck 2015, p. 122) Such events acted as advertisements for individual physicians' skill and highlighted the physician as a 'synechdoche' or a gatekeeper of sorts, to the 'medical body of knowledge.' (Van Dijck 2015, p. 123) The physician became seen as an expert mediator who opened up these unforeseen worlds to the viewer, contributing to a public perception of his field. Figure IV (appendix), an engraving by Willem Isaaczoon van Swanenburgh and based on a drawing by Jan Corneliszoon van't Woudt, shows the lecture theatre built in 1591 to house autopsies at the University of Leiden. We detect the importance of allegory, aesthetics and belief for the medical field through the image where symbol and pragmatism exist side by side. The lecture hall housed a curiosity cabinet with objects ranging from animal skeletons, taxidermy and corals, to mummy coverings, 'A Roman Lamp which burnes eternally' and 'The Entrailles of a Man, of which is made a Shirt.' (Schuyt 1697, p. 6) The collection's eclecticism, stretching from the natural-historical and the mythical to the macabre, shows that the site of learning portrayed itself between a cabinet of wonders purporting magic, and a purpose-designed site for the linear advancement of anatomic skill. De Laire's drawings, existing between the allegorical and anatomical worlds, did not stand out in their hybridity.

Contrasting aesthetics were not just a reflection of a contemporaneous shift from the old towards the new in the practice and teaching of medicine. The early modern perception of science was not similarly isolationist as it is in view of increasing specialisation today. For natural scientists lacking the knowledge of classical and quantum mechanics we now possess, spiritual and belief elements became central to how they practiced as these served to fill the gaps in their understanding. The groundings in science were humanist but they were also religious. Regional differences were reflected in the practice of the Dutch anatomist Frederick Ruysch (1638-1731), who collected and portrayed medical samples in his personal curiosity cabinet, acting as a precursor to the Leiden anatomy theatre. The desire to make advances in the field was tightly bound with the curiosity to understand the world of anatomy through its materiality, through possessing, collecting and displaying medical objects. Collecting and displaying curious or unusual objects was part of a broader process of navigating the elitist discipline of medicine. The field was perceived as likenable to humanities in that it also provided its practitioner with access a certain social standing. Religion

still had a strong footing at these higher echelons of society and featured strongly in the practice of medicine and humanities alike.

In 1628, English physician William Harvey described in *De motu cordis et sanguinis* the circulation of blood in a closed circle, where it is recycled, departing from the previously dominant belief that blood was constantly consumed and produced anew by the human system. Blood circulation had been shrouded in mystery and remained the object of superstition and belief. Harvey described the heart as giving motion to blood, yet his contemporaries understood the body in the same way the followers of Hippocrates had described it, as a ‘microcosm of the greater cosmos.’ (Harvey 2007) Aristotle saw the heart as crucial not only physically but symbolically in that it moved around the humours. Yellow bile, black bile, blood and phlegm represented the four elements of fire, earth, water and air. The heart as that which moved the four elements within the body was seen as the centre of humanity itself. In the Baroque imaginary, a model of circularity was ideal for establishing connections between the human microcosm and the world. Descartes’ account builds on the Harveian view of the closed circulation system, in addition focusing on the selfenclosure of the body and its division into anatomically and functionally distinct systems. (Judovitz 1998, p. 23) What marked Cartesianism was the move from heart-centricity to thinking of the brain, and more exactly the pineal gland as the crux of humanity. Advances in science were bound by exactness, and characterised by methodically recording observations. Logic and precision was the stuff of the rational mind, relegating the heart, repetitive and mechanical, to an ancillary role. Relating to this desire to exude virtue by way of being exact, De Lairessels drawings were made directly *ad vivum delineatis*, rather than from earlier images, attesting to the heightened role of the brain as the site of mediation of all observation. At the same time, especially the pregnancy and miscarriage images in Bidloo’s treatise find a balance of describing and simultaneously edifying that which had moved to the world beyond. The images give a soul to the soulless, elevating matter to a realm of ideas forming new bodies of knowledge. The material bodies are treated as scientific concepts surpassing in importance mere curiosities, effectively granting them a place among exacting, informative imagery. The body which gives new life is given particular prominence within the book with reproductive organs and obstetric pathology getting a focused treatment. In another obstetrics image shown in figure V (appendix) we see a dissected pregnant womb with the fetus curled up and appearing peacefully asleep. What reveals this to be an illusion are the layers of the abdominal wall, meticulously dissected and shown. Methodical observation and minute detail is complemented by the fine motoric skills of poetic meditation of the two deaths. The

pregnant body is shown opened up as one would open a pomegranate, reminiscent of Renaissance philosophies linking childbearing to a more literal fruitfulness. Instead of opting for the squarely Cartesian, proto-industrial view of the womb as a childbearing mechanism, de Lairese applied his historicist training and treated his topic with the old-world symbolism at a time when the presence of classical themes remained status quo in academic medicine. The artistic portrayal ties into a desire to elevate the immediately material and observable to a realm of poetics and symbolism, heightening the tension vis-à-vis a precise and diagrammatic rendering style.

### **Anatomy prints reflecting the moral compass**

Concepts of morality featured heavily in the art of Golden Age Netherlands. Often it was hidden under layers of meaning and evaded ready decryption. The growing body of knowledge also made some of these hidden meanings and messages easier to uncover. Thief Aris Kindt, deceased and dissected, was the object of Rembrandt's *Anatomy Lesson of Dr Tulp*, painted in 1632. Rembrandt reimagined anatomical aspects of Kindt's dissected left forearm, showing the flexor muscle group as originating on the lateral, or outer aspect of the humerus. The origin of those muscles is in fact on the medial aspect of the humerus, meaning the one closer to the torso when the palm is facing upward. This recalls the possibility of having used as reference an image of a dissected right hand's extensor muscle group, because those muscles do originate on the lateral side of the humerus. This breaking away from true-to-life depiction is possibly a moral commentary, provided as a reminder that our ability to grasp the inner workings of the human body are at best limited. Remembering this was central to the philosophy of Descartes when he posited in the annotations to his *cogito* that the premise of doubt is the only thing that cannot be doubted. (Descartes 1995) To posit one's doubt as that which is certain is a way of dealing with uncertainty in an uncertain and developing scientific landscape. Moral codes were another way to manage and control unpredictable human activity. The *Anatomy Lesson* is a Cartesian reminder of our epistemological limitedness. We can continually strive for the best knowledge and practice, but it is at best an extrapolation. This idea marked early modern philosophies of science, followed by bringing pragmatism and reasoning to the forefront. Focus moved onto the idea that the body is a set of closed systems that can be accurately measured, its innate workings grasped by way of close analysis. The notion of the all-pervasiveness of doubt birthed a new canon of seeking to understand the body as a set of systems that could and should be studied methodically and in isolation. Health and the study of disease thus became the world displaying a great amount of control and classification. Susan Sontag suggested that irrational beliefs inform perceptions around health: 'Any

disease that is treated as a mystery and acutely enough feared will be felt to be morally, if not literally, contagious.’ (Sontag 1978, p. 6) Dysfunctions of the body are more frightening the less is known about them. Each era has its own disease that captures the imagination. For the baroque observer, disease was a disorder of the humours, the four liquids defining individual behaviour and personality. Disease was then seen as something quite ontological, potentially threatening our very source. The disorders of the humors could not be seen or studied in any great detail. The way to deal with such an urgent level of uncertainty was to mediate it by other means. Moral mediation of bodies in the medical context was especially poignant as it related to anomaly. Bidloo’s bodies are not diseased, nor are they linked to moral degeneracy as in the case of Aris Kindt. Instead, their instrumentalised, autopsied status is indicative of the new role matter could have after death. Van Dijck pointed out that the interior of the body is always mediated. Mediation is needed when relating to bodies, at once objects we have perfect logistical mastery over, and foreign objects only a few grasp the hidden workings of. The Bidloo prints were among the first to look ‘under the hood’ of the human body’s system. Mediation provided an explanation for something inexplicable or apprehended. The bodies’ materiality as an object of mediation and study has elements of moral control to it — since recording, measuring and controlling in the material realm were crucial to the early modern social order.

Measuring as a gesture was indeed portrayed across a lot of early modern imagery, connoting an increasing focus on rationality and exactness. The anatomy theatre at Leiden boasted among its collections many whale-themed images. Whale beachings held moral significance as supposed reminders that the accumulation of earthly wealth was soon to be if not the single cause then a precipitator of moral decline. Whales symbolised the eventual great seaborne disaster in a country whose arable land was largely reclaimed from unforgiving bodies of water. The resulting discourse, thorough documentation of the beachings and measuring of whale appendages was an exercise in moral control, considered necessary to master these forms of natural (and moral) disaster. Pictures of beached whales portray the concerned public engaging in acts of measuring. We see similar concerns around morality and measuring in de Lairese’s image with a skull, notation and an inkwell (figure VI in appendix). In it we see the idea of measuring and scale as extended portrayals of moral aptitude, tinted with a *vanitas* sensibility. Measuring has connotations of justness and fairness. Meticulous and true to scale depiction of the skull coupled with the introduction of the notation page and inkwell as if ‘for scale’ indicate a desire to be exact. It was furthermore seen as helpful to mediate the image with mundane objects to render it intelligible and aesthetic in its scientific pallor.

The obsession with measurement comes from a need to make sense of a messy reality. The interest with it is to overcome a *de facto* entropy in nature, and to counter chaotic early modern life. The desire to control and predict is exemplified as a preference for the logos, the rational, the classifiable. Classing citizens according to how their bodies could be seen was a concrete manifestation of exerting moral control over the populace. This idea, and the newly popular interest in bodies and their functioning resulted in making autopsies public. Public autopsies doubled as a spectacle akin to public executions, possibly surpassing their cruelty by serving as post-mortem punishment for those on the autopsy table. Subjects were thieves, vagrants and others leading itinerant and impoverished lives, possibly without next of kin. Thus, they were forced to offer their bodies in the service of science and wonderment. Observers also received prescriptive ethics in the process. Gaining access to see the events unfold in the anatomy theatre not only represented an instance of morbid entertainment for the lay follower, it also acted as a deterrent from doing crime. Being involuntarily dissected after one's passing would have been seen as an ultimate punishment in that it reached beyond death, a process seen by the early modern observer as particularly sacred. Ultimately, given the fact that the autopsy tickets were expensive and the attendees had a high social standing, this spectacle appears as class tourism, comparable to the Amsterdam public prison tours of the Spinhuis, mainly housing prostitutes. (Schama 1997, p. 22) This is to say that in a stratified society, moral spectacles of various forms existed in order to cement class divisions into place, simultaneously underlining them and creating the comfortable illusion of their immutability. Peer or class-transcending observation extending into the medical realm had to do with a surveillance based social order, with sight implying moral control. Being able to see inside the neighbour's house held particular prominence in Netherlandish society where optical access allowed by the deliberate omission of curtains could be a measure of the observee's moral standing. By extension, to be able to see inside a body was to be able to discern that person's moral standing. Gaining access to view the inside of a body similarly became to connote assessments of that person's purity or impurity. The social strata implications of being laid bare was that this was seen as a way to control an 'unruly mass' of the lower classes. De Laire'sse's hand images in the Bidloo volume (Fig VII.) continued a tradition set by Andreas Vesalius, the likeliest source for Rembrandt's *Anatomy Lesson*. Such imagery provided captive audiences with an illusion of moral control by way of seeing. Through exposing the mechanism of a hand that stole the loaf of bread or the apple, is to take a closer look at crime itself. Gaining visual access was seen as a form of moral control. Early Modern Dutch society was concerned with the optics of decorum, exemplified by ritual habits of scouring and cleaning that did not appear to respond to necessity. Promoting an appearance of morality and cleanliness had to do with simultaneous efforts at defining a national character,

emerging as a call to rally culturally disparate provinces under nationalistic auspices. Maintaining the outward image of moral aptitude became central in this nation-building effort.

### **Looking to cure, looking one's best**

Relating to a modern effort at creating bodies of observed knowledge, anatomical prints represented a shift to the optical mode, where information is gathered and transmitted by means of sight. Seeing was a first step towards being able to take informed action. This is a modern vision and it comes into focus in the myriad of imaging techniques in use today, appearing on the same nonlinear continuum of development having started with the early modern practice of recording autopsies. Reproducing realistic renderings of the human body was pivotal in establishing a visual corpus around worlds being uncovered. Cartesian philosophy preferred to look at the body as a mechanical entity distinct from or primary to concepts like soul or spirit. Susan Kuretsky pointed out that Descartes's position, published in 1637 in *Discourse on Method*, had 'profound consequences for developments in anatomical illustration' noting that '[de] Lairese's illustrations, with their emphasis on the internal systems and workings of the body isolated from the whole,' belonged to this new world. (Kuretsky 2014, p. 16) The Bidloo treatise reflected the isolationist turn with its focus on the optical. What we understand here by isolationism is that all body systems were best studied separately. We see quite directly the effects of such new lines of thinking of the body comprising of diverse systems in the Bidloo treatise, most strikingly in the arm pictures (Figure VII in appendix), with muscles and tendons pinned out to better display them to the viewer as parts of a functioning whole. The pinning of the tendons works to make the drawings akin to schematic images of mechanical parts, taking the treatise towards considering the body as schematically describable interlinked parts, comparable to pulley systems, central to Dutch mercantile imaginary. Pulley systems used to hoist up goods during the 17th century still remain visible in the upper part of old Dutch building facades. In the same way the mechanical workings of a pulley system could be schematically described, the body's inner workings could be broken apart and studied, aiding the process of understanding.

By isolating one bodily system, one could see and closely study that system, to analytically determine its inner workings. Autopsies, striving to see inside the body, are closely related with optics. The word autopsy is formed of two roots: the ancient Greek *autos* for self and *optos* for seen. It translates into 'to see for oneself,' or to 'self-reveal.' The early modern mind did not quite equate

the physician looking with curing. Rather, seeing was a step towards gaining the necessary understanding and thus a prerequisite of curing. Seeing was to understand more about the patient's condition, whereas earlier methods had involved secrecy, ritual and beliefs. Medical images' dissemination in illustrated treatises not only shaped perceptions about the healing process as based on optics, but also contributed to a collective understanding of disease and new therapeutic intervention. Van Dijck mapped the ideal of the transparent body, achieved by rendering the body's workings transparent through several layers of looking. The transparent body was conflicting for the early modern observer as its idea was sense-based and senses were considered the domain of empiricism. Descartes doubted empiricism, because to him our human senses were fallible. On the other hand, Descartes' own rationalism based on logical reasoning, and a lot of his scientific texts base on observed data, pointing to unmined potential of the senses as scientific basis. Seeing was akin to being informed and in certain cases a prerequisite to ascertaining more detail.

Looking as a method and the eye as a mechanical device was developed by Johannes Kepler, who in the late sixteenth-century developed his mechanical model of the eye, a trend inspiring painters to produce realistic pictures as if to precociously mimic the idea of the eye as a *camera obscura*-style device. The Keplerian model presented the eye as a system of lens and chamber, its mechanism gathering and inverting light rays onto the retina. The final interpretation of the image in the brain was a process his contemporaries placed firmly in spiritual and therefore unscientific domains. The implication of such a complex mechanical process preceding the conscious process of viewing naturally raised the Cartesian question of statistics. When so many stages were passed through by the light ray in order to form the basis of all observation, many things could go wrong on the way. The human-machine was fallible, and any perception of reality at best a wavering reflection. We see this principle of the eye as the best bad system at our disposal in de Lairese's print of a skull fragment laid next to an inkwell and a pen, later its concave interior exposed and this time laid on top of musical notation. (Figure VI in appendix) We are first presented with the illusion of a full cranium, but it is revealed on closer inspection to be a fragment. This tension between illusion and exactitude amounts to a reminder of our limited capacities for viewing. The fallibility of optics acts as a reminder of the growing scope of medicine, where new discovery raises more potential for uncertainty and doubt, forcing medical professionals to reckon with their limits.

Optics as a guiding principle for art and science was not without its subversions and opponents. Physicians' training did not involve human autopsies until the seventeenth century so

one relied on knowledge gained by examining corresponding structures in animals. Because reliable information was difficult to come by, anatomists had found other ways to practice and to partially ground their lines of inquiry in theatrics, belief and aesthetics. Southern practitioner Frederick Ruysch's cabinet of wonders was a prime example of a pre-rationalist aestheticisation of death and bodies. Aestheticisation predated but also laid the foundations for opticity, in that it represented finding meaning through vision in a time where meaning was rigorously sought but answers were difficult to obtain. Anatomy was long relegated to being aesthetic and mystical, its links to academy found in its classicising treatment. In the physician's cabinet of wonders the macabre met the poetic and music inspired matter. Theatrics were seen on the skeleton plate of the treatise, acting as introductory matter to an audience accustomed to seeing anatomy only in the context of sumptuous material cultures. The portrayal of allegorical and classical motifs was a way to secure the sympathies of an audience, before introducing them to new, more analytic ways of seeing.

Svetlana Alpers evoked the importance for early modern painters to look inside the materials they depicted, as she puts it, '[c]heeses are cut into, pies spill out their fillings,' lemon peels 'sliced and unwound to reveal a glistening interior [...] subject not to the ravages of time but to the probings of the eye.' (Alpers 1984, pp. 90-91) The philosophical implications of breaking something to look inside it is in line with the thinking of Kepler and Descartes, while meditating on temporality. Such ventures to break into one's subject matter were crucially prompted by the occasional attempt to self-aggrandize and to show one's skill. The moment was rife for the monetization of one's trade and this included medicine. As well as a way for de Lairese to assert his skill in observation and realistic rendering, in the same vein this book offered Bidloo to assert his professional and academic stature through displays of humanist and classical virtues, alongside claiming authority, knowledge and access in medicine. As a history painter de Lairese would have normally engaged with larger-than-life historical and allegorical motifs. While subscribing to the more modest genre of still life, drawing bodies' likenesses from the broken-open, stilled objects was evidently important to the artist given its radical potential for the depiction of an entirely new type of object. He was faced with previously unconquered terrain to further elevate his status as a painter in a saturated and high-competition image economy. As objects focusing on the process of showing, the prints absolutely attest to a level of self-promotion by their makers, encouraging audiences to be impressed by them, their level of access and expertise, as well as the novel objects themselves.

## Conclusion

Gerard de Lairesse's prints for Bidloo's 1685 atlas reflected transformations to the Netherlandish society, such as the strengthening of the nation's commercial position. The country's material wealth compounded with its cultural heterogeneity made it a prime site for encounter and creation of value, allowing scientific development to take place. One key advancement was the use of autopsies to learn about the body. The emerging model was based on isolationism, propelled by the belief that to closely examine each system in the body would bring new knowledge. Indeed, this new information replaced falsehoods reached by extrapolating from animal cadavers. Anatomy prints by de Lairesse followed this pragmatism. De Lairesse did not produce diagrams, nor did he opt for purely aesthetic impressions. The pictures waver between the two prominent models for assessing reality, reflecting a shift from an affective and superstitious world towards a world of ratio, afforded by the advent of new knowledge. De Lairesse made a parallel gesture to Vesalius whose works were the first to correctly describe a human body's interiors. Indexical and methodical representation of the body's structures speak to a quintessentially Dutch habit of exerting control through exactness. Classical details acted as an appropriate aesthetic introduction to new ideas of body transparency, pandering to tastes prevailing among predicted audiences. Bodies became elevated beyond their status as reliquary detritus of the living, or as mere sites of godly judgement or pardon. They became seen as instruments for the cementing of prevailing moral standards and became the new instruments for the lofty goals of education — both anatomical and moral. Observing bodies predated knowing about them, and seeing bodies was analogous with controlling them. Processes of sighting were instrumental in gaining knowledge and also vehicles towards the ultimate realization that doubt only grew with new information.

The body being cut into and its systems exposed also made for complex implications for the body as a seeing object, an object which sees, and an object which could be seen. Through a contrasting mixture of the observed and the idealised, de Lairesse meticulously represented the bodies but also attempted to describe the limitations of representation — a characteristically modern gesture. Through the mixing of theatrics and allegory to a purely scientific style, the viewer of the prints is positioned like the observer of a play or a spectacle. The viewer as a fallible and susceptible being is proposed by introducing theatricality and self-promotion. These elements represent contemporary print economies and momentarily undercut purely scientific propositions laid out by the book. To describe anatomy in pictures was to conquer new ground and to take liberties outside one's artistic jurisdiction.

## Bibliography

Alpers, Svetlana. 1984. *The Art of Describing. Dutch Art in the Seventeenth Century*. Chicago: University of Chicago Press.

Bernez Marie-Odile. 1994. Anatomy and Aesthetics: Gérard de Lairesse's illustrations for Bidloo's *Anatomia Humani Corporis*. *Interfaces. Image-Texte-Langage* [Online] 5. 207-229. [https://www.persee.fr/doc/inter\\_1164-6225\\_1994\\_num\\_5\\_1\\_942](https://www.persee.fr/doc/inter_1164-6225_1994_num_5_1_942). (28 November 2024)

Descartes, René. 2004. *Discours de la Méthode*. Project Gutenberg e-book edition. <https://www.gutenberg.org/files/13846/13846-h/13846-h.htm>. (2 May 2024)

Descartes, René. 1972. *Treatise of Man*. Harvard monographs in the history of science edition. Cambridge: Harvard University Press.

Forsius, Arno. 2001. *Ihmisiä lääketieteen historiassa*. Helsinki: Suomen lääkäriliitto.

Harvey, William. 2007. *De Motu Cordis*. Glasgow University Library Special Collections online edition. <https://www.gla.ac.uk/myglasgow/library/files/special/exhibns/month/june2007.html>. (27 April 2024.)

Hoftijzer, Paul G. 2015. The Dutch Republic, Centre of the European Book Trade in the 17th Century [Online]. <http://www.ieg-ego.eu/hoftijzerp-2015-en>. (3 May 2024)

Judovitz, Dalia. 1998. Virtual Bodies: Anatomy, Technology, and the Inhuman in Descartes. *Paroles gelées* [Online] 16. <https://escholarship.org/uc/item/5ww094n7>. (5 May 2024)

Knoeff, Rina. 2012. Dutch Anatomy and Clinical Medicine in 17th-Century Europe. In *Brewminate*. <https://brewminate.com/dutch-anatomy-and-clinical-medicine-in-17th-century-europe>. (6 May 2024)

Odell, Dawn and Jessica Buskirk. 2014. *Midwestern Arcadia: Essays in Honor of Alison Kettering*. Northfield: Carleton College.

Ramakers, Bart. 2015. To be read tastefully and Fruitfully. Petrus Camper in context [Online], conference proceeding, University of Groningen. 153-185. [https://pure.rug.nl/ws/portalfiles/portal/25496106/To\\_be\\_read\\_tastefully\\_and\\_fruitfully.pdf](https://pure.rug.nl/ws/portalfiles/portal/25496106/To_be_read_tastefully_and_fruitfully.pdf). (2 May 2024)

Schama, Simon. 1997. *The Embarrassment of Riches. An Interpretation of Dutch Culture in the Golden Age*. New York: Vintage Books.

Schuyf, Frans. 1697. *A Catalogue of All the Cheifest Rarities in the Publick Theater Anatomie-Hall*. Leiden: Hubert van Der Boxe.

Sontag, Susan. 1978. *Illness as Metaphor*. New York: Farrar, Straus and Giroux.

Van Dijck, José. 2005. *The Transparent Body: A Cultural Analysis of Medical Imaging*. Seattle: University of Washington Press.

**Appendix: Plates**

Figure I.





Figure II.

ist hat gessen/ und ob oher  
r/hindernuß halb / so sol die  
s zü samen bindē/ mit einer  
ürt senffrem ziehen dē kind  
die aller sorgklichst geburt.



¶ Wo aber das kind k̄  
me mit einer seite an die  
geburte So soll aber die  
hebam̄ das kind schicken  
richten und wysen ober  
sich/ wie es vo:hin in m̄  
ter leib gefessen ist/ vñ im  
darnach zü bequēliche  
rfigang helfen.

¶ So aber das kind kem mit ge  
reutē füessen/ So sol die hebam̄  
die füeß zü samen thun / vñ dar  
nach vffsüre/ als obstadr. Doch  
soll sie allzeit fleiß ankeren / das  
die hend des Kindes neben seiner  
seiren hinab gestreckt seynt/ als  
dieß gemelt ist.



12

Figure III.

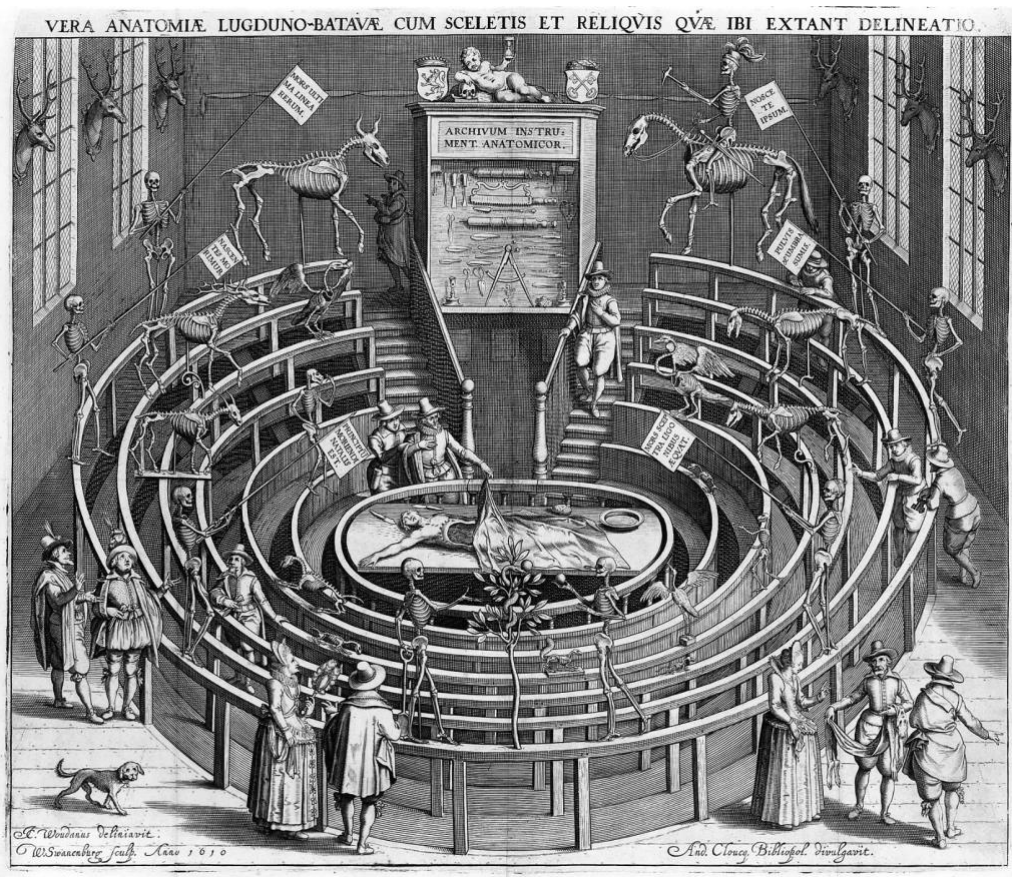


Figure IV.

Figure V.

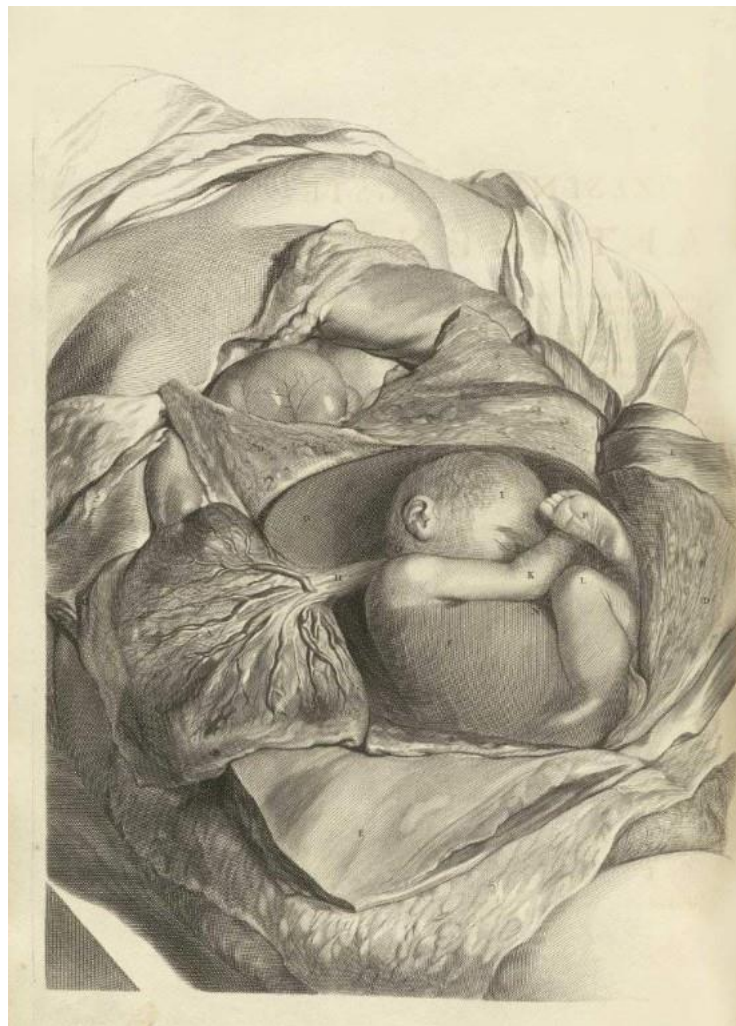


Figure VI.

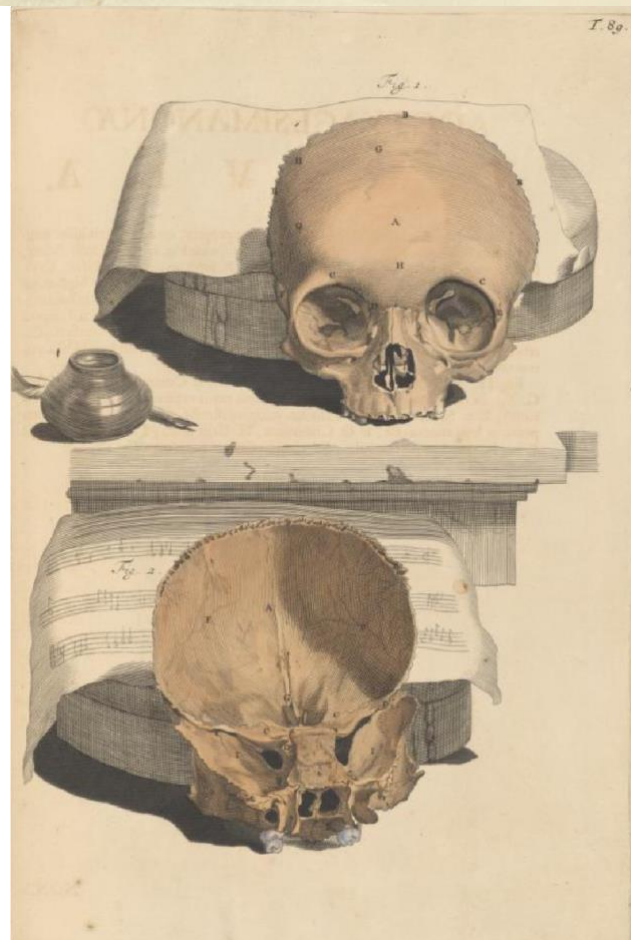




Figure VII.

Figures I, II, V and VII. Gerard de Lairesse, for Govard Bidloo, *Anatomia Humani Corporis*, engravings by Abraham Blooteling and the brothers van Gunst, 1685.

Figure III. From Eucharius Rösslin, *Der Schwangern frawen und he bammen rosgarten*, woodcuts, 1513.

Figure IV. Jan Cornelisz. van 't Woudt, *Anatomy theatre, Leiden University*, engraving by Willem Isaacsz. Swanenburg, 1690.