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Andrew Cunningham, *The Anatomist Anatomis'd: An Experimental Discipline in Enlightenment Europe*

Laurence Talairach-Vielmas

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Andrew Cunningham, *The Anatomist Anatomis'd : An Experimental Discipline in Enlightenment Europe* (Farnham : Ashgate, 2010), 443 p, ISBN 978-0-75466338-6

- 1 After his fascinating *The Anatomical Renaissance: The Resurrection of the Anatomical Projects of the Ancients* (1997), Andrew Cunningham offers us a new study of anatomy, *The Anatomist Anatomis'd: An Experimental Discipline in Enlightenment Europe*. This time, Cunningham looks at how anatomists contributed to the creation of anatomy as a discipline in the long eighteenth century, the “Enlightenment” being a time when the discipline flourished as never before or since. Thus anatomy, throughout the hundred and fifty years that Cunningham examines, is directly linked to the quest for knowledge that defined the Enlightenment. The book immediately takes us to the heart of the subject, opening as it does with the dissection of the body of the physician Marcello Malpighi (1628–1694) in December 1694 in Rome, an event that emblemized the rise of pathological anatomy, for as Cunningham writes, “being an anatomist at the turn of the eighteenth century... demand[ed] a strong commitment to one’s discipline, a commitment that [did] not end with death” (2).
- 2 In Chapter 1, Cunningham highlights how the eighteenth century was a key moment in the construction of anatomy. Whereas, in Galen’s day, the dissection of human corpses had been forbidden (Galen anatomised apes), when the Hunter brothers came on the scene, anatomy was presented as “a key to the understanding of the 'whole plan of the Creator'” (17). From the mid-sixteenth century onwards, anatomy theatres were built here and there in Europe, and dissections advertised as public events, with research by

Andreas Vesalius (1514–1564) opening up the field of modern anatomy. Unlike the rest of Europe, in mid-seventeenth-century England, there was little, if any anatomical activity in the medical faculties at Oxford and Cambridge. William Harvey's 1628 discovery of the circulation of the blood was the greatest anatomical discovery since ancient times and probably spurred the development of anatomy from that moment on. His dissections and vivisections typified the extent to which anatomy was experimental, gradually defining anatomy as "the master discipline for the investigation of life" (19). Because anatomy studied structure, action and use (or function) it "was in fact a dynamic, demanding discipline that set the agenda for the other disciplines and sub-disciplines in which questions about life and living creatures were investigated and discussed" (20).

- 3 Chapter 2 deals with anatomists' careers and courses, explaining how anatomical knowledge became "a commodity to be bought and sold" (83) as it was based upon the supply of corpses. In the eighteenth century, becoming a professional surgeon implied training in anatomy. Many followed in the footsteps of their fathers, and Cunningham traces several anatomical dynasties, among which the Albinus family in Leiden (56 years) and the Monros at Edinburgh University (126 years). In the world of private anatomical teaching, however, merit became a key term as the criterion for advancement, as exemplified by the Hunter brothers (William and John) and their nephew, Matthew Baillie (1761–1828), for whom anatomical training was something of an apprenticeship system. Moreover, anatomy teaching developed in institutions as well. Cunningham looks at the way in which anatomy was practised and taught in Paris in three royal foundations: the Jardin Royal (later to become the Jardin des plantes), the Collège royal and the Académie royale des sciences, institutions that quickly became models. These continental examples serve to heighten the lack of investment in anatomy schools in England, especially in London where in 1763 William Hunter had suggested the opening of a Museum in London financed by royal funds for the improvement of anatomy, surgery and physic. Ironically, the appointment of royal surgeons by absolute monarchies, such as those in France or Austria, made things easier for the development of anatomical and surgical research. Cunningham then explores different approaches to investigating and teaching anatomy in eighteenth-century Europe, contrasting anatomical research in Edinburgh, Leiden, Padua (Giovanni Battista Morgagni [1682–1771]), Paris (Jacques-Bénigne Winslow [1669–1760]), London (William Hunter's [1718–1783] private anatomical teaching and John Hunter's [1728–1793] anatomical museum, proposing new principles of surgery). Cunningham even looks at women, who were either subjects of dissection or invisible in anatomical theatres and European professional institutions (with the exception of Laura Bassi [1711–1778] in Bologna), although some of them were involved through (wax) modelling.
- 4 Chapter 3 looks at sub-disciplines directly connected with experimental anatomy: physiology, midwifery, comparative anatomy and pathology. Because anatomy has always been a discipline built around experiments, especially up until the end of the eighteenth century, Cunningham explores the experiments conducted by different anatomists of the period. He explains the difference between anatomical experiment and physiological experiment (the term "experimental physiology" first appeared in 1800: before that, physiology was not defined as experimental). However, some anatomical works, such as those of Albrecht von Haller (1708–1777), indicate that certain eighteenth-century discussions, such as the one on generation, although mainly

theoretical, sometimes hinged upon anatomical research programmes (as exemplified by von Haller's *Elements of Physiology*). This also paved the way for the replacement of midwives by medical and surgical practitioners as birth started to be seen as a domain that necessitated anatomical knowledge. Midwifery was thus radically transformed by William Hunter. Pathology was also a sub-discipline of anatomy the role of which became increasingly important in the course of the eighteenth century. Pathological anatomy developed as the bodies of the poor became available and were provided by nearby hospitals. The idea that diseases were anatomically based also emerged: "anatomical seats" were identified, constructing the anatomist, whose function was to recognize structures, connections and flows, as a key figure in the medical field and the interpretation of pathologies. Whereas the interpretation of the fluids (or "humours") had formed the basis of the Galenic and Hippocratic medical traditions, the shift in focus to the organs and the body redefined pathology as a purely "anatomical matter" (197), evincing the mechanistic view of the body promoted by seventeenth-century mechanical philosophers, such as René Descartes (1596–1650) and his followers.

- 5 Chapter 4 focusses more on the supply of bodies for dissection. Surgeons, physicians and anatomists (or private surgeons) needed bodies for anatomical teaching. The rise of resurrectionism as a trade, especially before the "Murder Act" was passed by Parliament in 1752, was brought to public awareness by such cases as William Burke and William Hare (who murdered their victims to order). The increase of "wet" anatomical preparations, as practised by William and John Hunter, the use of (wax or mercury) injections, particularly between 1650 and 1750, the fashion of wax modelling (initiated by the Sicilian abbot Gaetano Giulio Zumbo [1656–1701] who collaborated with the surgeon and professor of anatomy Guillaume Desnoues), the rise of Bologna as a centre for the production of wax anatomical models, etc., all these developments help to explain the gradual shift towards pictorial representations of the body in the form of atlases. The works of Jacques Gautier d'Agoty (1716–85) or the anatomical tables of Bernhard Siegfried Albinus (1697–1770), professor of anatomy at Leiden University (with the engraver Jan Wandelaar), portrayed the human body as a work of art, an ideal body rendered by the anatomist and the artist in picturesque terms. Other examples of techniques used to portray the human body in the eighteenth century include the camera obscura method used by London surgeon and anatomist William Cheselden (1688–1752) and the use of *écorchés* figures. Cunningham also mentions growing disputes among anatomists, cases of charlatanism, plagiarism and theft.
- 6 Chapter 5 then shifts towards animal bodies and comparative anatomy, highlighting how anatomy also raised the issue of vivisection and that of the type of animals that were dissected and their origins. In the course of the eighteenth century, many exotic animals (taken from royal menageries or travelling commercial menageries and collections) were dissected, as exemplified by Clara, the rhinoceros depicted in Wandelaar's engravings which brings out the marvels of the human body and endows his works with picturesque tinges. In Paris, the animals that died in the royal collection and later, in the menagerie of the Muséum d'Histoire Naturelle, were dissected by Buffon and Georges Cuvier respectively, while John Hunter dissected the animals that died in the Tower of London. The fascination for the rhinoceros is best illustrated by Clara the "Dutch" rhino which toured Europe between 1741 and 1758 and was portrayed in both paintings and anatomical engravings (as by Wandelaar cited above). Cunningham tries to understand why these animals were of interest to anatomists specializing in the structure of the human body. To do so, he examines the different

meanings of the term “comparative anatomy” and its evolution through time, highlighting the different usages of the term throughout the eighteenth century, from George Stubbs (1724–1806), an artist whose fame was particularly sealed with his horse studies and whose comparative anatomy paved the way for modern anatomy, to Richard Owen (1804–1892), who modernized Hunter’s comparative anatomy.

- 7 In Chapter 6, Cunningham looks at the influence of Dutch anatomical knowledge in Japan and its waning as “the star of the sciences of life” (368). He goes on to consider how, with the development of physics and chemistry, experimental physiology (illustrated by the work of François Magendie [1783–1855] and Pierre Flourens [1794–1867]), comparative anatomy and the remaking of natural history (with Cuvier, for instance, and the development of Darwinian science of comparative anatomy), as well as the growth of clinical medicine, anatomy was no longer an experimental discipline. Anatomical demonstrations in anatomy theatres became less popular than in the past, the vanishing of rituals associated with dissection marching hand in hand with a secularisation of the world and of science.
- 8 Although those already familiar with the most famous figures of the eighteenth-century medical scene may not be surprised, Cunningham’s exploration of the rise and evolution of anatomy and its key figures in the course of the long eighteenth century is a highly valuable study and an important addition to earlier studies in the history of anatomy. Offering his readers a picture of anatomy through the looking-glass, Cunningham reminds us that it is crucial not to look at this aspect of medical science as a discipline thriving only on bodysnatchers and other gruesome experiments; he proposes instead portraits of men whose experiments aimed to further knowledge of the human body and who used dissection as the ultimate means of accessing the truth. His presentation of anatomy as the most significant discipline of the sciences of life will not fail to captivate readers interested in the history of medicine.

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AUTHORS

LAURENCE TALAIRACH-VIELMAS

Professeur

Université Toulouse 2 – Le Mirail

talairac@univ-tlse2.fr