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*Catalogue of the Exhibition 'Leonardo da Vinci: Anatomist'* by Martin Clayton and Ron Philo

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Visitors to the National Gallery's recent sell-out show, 'Leonardo da Vinci: Painter at the Court of Milan', were invited by director Nicholas Penny to 'suspend much of their curiosity concerning Leonardo as a "scientist" in order to focus on his achievements as a painter' [Syson 2011, 9]. However, trying to divide Leonardo's activities like this will always be fruitless, as he carried the same multifarious intellectual acuity into everything he did.

This is certainly true of his anatomical studies. In the current exhibition at the Queen's Gallery, Buckingham Palace, 'Leonardo da Vinci: Anatomist',<sup>1</sup> we find an anatomist whose achievements are the result of the same skills of observation and representation for which he was celebrated as a painter. All the works in the show are drawn from the holdings of the Royal Collection. And though displays of Leonardo's drawings from the rich collection at Windsor are not uncommon—indeed several of these drawings were featured in the National Gallery's show—this represents the most comprehensive exhibition to date of Leonardo's studies in anatomy, a field of inquiry which dominated his intellectual activity in the early 16th century.

'Leonardo da Vinci: Anatomist' focuses on the same period as the National Gallery show, around 1480 to 1514, much of which time Leonardo spent in Milan. Like the National Gallery exhibition, it poses a difficult task for its curator. Leonardo is so well studied and

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<sup>1</sup> The Queen's Gallery, Buckingham Palace, London, 4th May to 7th October 2012.

his drawings—even some of his anatomical studies—so well known, that the exhibition must aim for something more than simply comprehensiveness. Nonetheless, the sheer scale of the show is worthy of note: 87 pages from Leonardo's notebooks are on display, 24 sides of which have not previously been exhibited. Although the density of material on show makes the exhibition feel something akin to a day in an archive, browsing the walls of the gallery manages to be almost as absorbing as leafing through Leonardo's notebooks. Indeed, this is the real thrill of this exhibition: through immersing ourselves in his working notes, we learn much about Leonardo's mind and how he directed its energies. His ambitions were lofty: from planning to write a study on the body as part of a larger treatise on painting, Leonardo's interest in human anatomy gradually gained its own momentum and became a treatise project in its own right. Initially working from human bones and dissecting animals, Leonardo progressed to observing and undertaking human dissections, collaborating in his research with the anatomist Marcantonio della Torre. In this respect, the exhibition goes beyond an overview of Leonardo's anatomical career, as it traces both the development of his scientific knowledge and the progress of his anatomical thesis.

At the heart of the exhibition are two important staging posts in Leonardo's anatomical studies, known as Anatomical Manuscripts A and B. The earlier, Manuscript B, documents Leonardo's comprehensive dissection of a centenarian in around 1507:

This old man, a few hours before his death, told me that he was over a hundred years old, and that he felt nothing wrong with his body other than weakness. And thus, while sitting on a bed in the hospital of Santa Maria Nuova in Florence, without any movement or other sign of mishap, he passed from this life. And I dissected him to see the cause of so sweet a death. [17]

Filling the pages of his notebook with drawings, diagrams and descriptions, Leonardo recorded with painstaking accuracy the man's muscular, nervous, and cardiovascular systems, including one of the earliest descriptions of a cirrhotic liver:

The liver is desiccated and becomes like congealed bran broth in color and substance, so that when but a little friction is

made on it this substance falls away in minute particles like sawdust. [82]

Although Leonardo's understanding of his dissections was limited, Clayton rightly draws our attention to a drawing in which he attempts, ambitiously, to synthesize his knowledge into a single diagram of the cardiovascular system and principal organs of a woman [see [Figure 1](#)]. Despite several omissions and flaws, this is a revolutionary drawing of the human body, immediately reminiscent of modern anatomical diagrams.

As if to underline the modernity of Leonardo's approach, the exhibition also includes a number of modern medical models offering direct comparisons with the drawings and demonstrating the accuracy of Leonardo's observations. As the exhibition goes on to make clear, this strong feeling of familiarity and recognizability is a red herring: Leonardo's anatomical treatise never came to fruition and his drawings languished unknown for centuries.

After Leonardo died in 1519, his manuscripts passed to his pupil Francesco Melzi and were later sold to the sculptor Pompeo Leoni, who had the notebooks and drawings bound into several large albums. One of these albums, which contained almost all of Leonardo's anatomical drawings, made its way into the collection of Charles II and makes up a large proportion of the Windsor collection. The drawings were removed from the album in the 19th century and are now mounted individually; but the empty binding of the album is included in the Queen's Gallery display, underlining the significance of the drawings' history. Hidden between the covers of this book, Leonardo's anatomical studies garnered little attention before they were studied by the physician William Hunter in 1773 [[Clayton and Philo 2010](#), 208]. It would, nonetheless, be another century before an edition of Leonardo's anatomical works was published.

The studies which make up Anatomical Manuscript A (compiled in the space of a few months in 1510–1511) provide our only real glimpse of Leonardo's conceived anatomical treatise and make up some 24 heavily-annotated illustrations in the catalogue. The drawings begin with the superficial anatomy of the body drawn from a live subject, before moving on to detailed analysis and classification of the muscles, then bones, that are informed by Leonardo's growing knowledge gained from dissection. Leonardo goes beyond simply

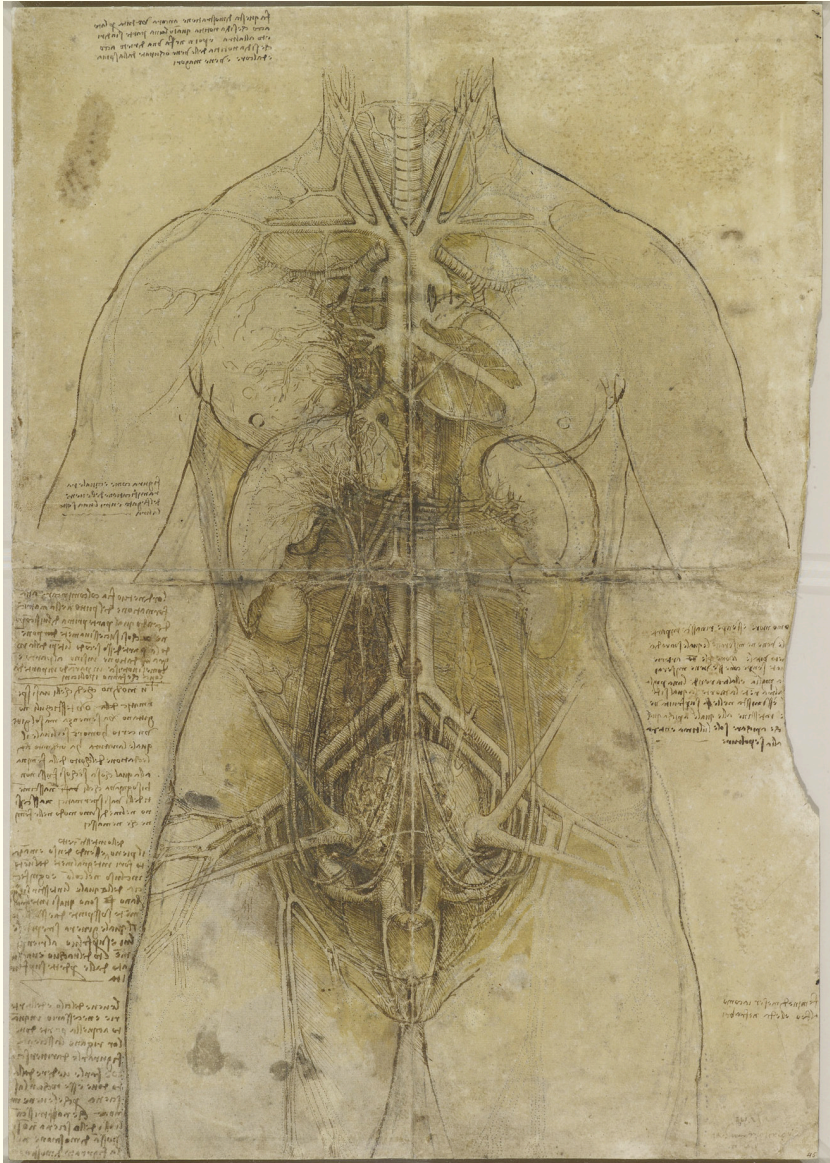


Figure 1. Leonardo da Vinci: The cardiovascular system and principal organs of a woman. Black and red chalk, ink, yellow wash on paper, ca 1509–1511

(Royal Collection Trust © 2012, Her Majesty Queen Elizabeth II)

delineating the anatomy of the body, his notes by this stage filling every blank space and offering reflections on the identity, structure, and function of every muscle and bone. But it is Leonardo the artist whose ingenuity remains most fascinating: his drawings dismantle the body with a range of views and overlays surely impossible in the dissection room. Indeed, the question of how exactly Leonardo went about making such densely detailed drawings inside (or, more likely, outside) the dissection room remains a perplexing one. The skills earlier used in his compound view of a woman's cardiovascular system are well honed: many of the sheets employ a range of 'thread diagrams' (to employ Clayton's term) that successfully articulate the layers which make up the structure of the body. The anatomical inaccuracies and speculations in these studies, carefully noted throughout the catalogue, suggest that Leonardo worked as much from his own (informed) conception of the body as he did from observation.

Leonardo's drawings and investigations ended abruptly, and inconclusively, with his departure for Rome in 1513. The exhibition reflects this sudden suspension of activity, ending similarly abruptly with a closing group of studies of the heart. These studies follow on from Manuscript A and Leonardo's collaboration with the anatomist Marcantonio della Torre at the University of Pavia in 1510–1511, the period in which he had the greatest access to dissections. Leonardo's depictions of muscles from that period are amongst his most detailed and most accurate. His subsequent studies of the heart perhaps mark the apex of his anatomical career, providing the first descriptions of the atria and the blood flow through the aortic valve, although they also reveal his struggle to comprehend the results of his research; an understanding of the circulation of blood remained elusive. As Clayton reflects in the catalogue:

There is a pervading sense in Leonardo's notes on the heart, running to many thousands of words, that he could go no further. Faced with an impasse between his physical understanding and the accepted physiology of the heart, he was doomed to keep on describing the motion of the blood through the valves in ever more detail. And there, apparently, his anatomical work came to an end. [24]

It is to the catalogue's great advantage that it is the product of a collaboration between a curator and a professor of anatomy;

engaging with Leonardo's work is always challenging and it is only expert guidance—in the form of notably detailed and explicatory catalogue entries—that prevents his anatomical studies from being overwhelming.

This is a great achievement; there is no escaping the fact that we are looking at Leonardo's drawings on a scale and with a focus usually reserved for scholars. In this respect, the show is timely: in the wake of the National Gallery exhibition, Leonardo is very much in the public consciousness and little introduction is necessary. Like the National Gallery exhibition, however, putting Leonardo in context remains a difficult proposition, and the nature of his collaboration with Marcantonio della Torre remains as unclear as his relationships with those contemporary Milanese painters who figured so strongly in 'Painter at the Court of Milan'.

Another important feature of the Queen's Gallery display is the use of a number of double-sided frames, which allow both sides of particularly interesting sheets to be seen, although it remains hard to escape the desire for a table, chair, and magnifying glass when studying such demanding drawings. It is for this reason that the very comprehensive exhibition catalogue and iPad app are so useful and deserve to be recommended highly. The well-produced catalogue follows the chronological structure of the exhibition, and includes high-quality color illustrations of every work exhibited. A number of photographs taken under ultraviolet light allow some additional detail to be seen on the more faded sheets, and a readable introduction gives a good overview of Leonardo's anatomical work and its significance. With such a great deal of material in the exhibition, the catalogue remains—perhaps understandably—a little light on context. This is best evidenced by an underdeveloped section on Leonardo's preparatory studies for the mural 'The Battle of Anghiari' commissioned in 1503 for the Palazzo della Signoria in Florence. Though the accuracy of musculature on the nude figures Leonardo sketched for the mural do owe something to his understanding of anatomy, the relation between his anatomical and artistic practice still needs greater treatment. The iPad app is of particular benefit, as it allows the user to browse the drawings with overlaid translations of Leonardo's dense textual notes.



Both catalogue and app are as well realized as the exhibition itself and underline the fact that this show—in many ways an elaboration of two earlier exhibitions of Leonardo's anatomical works curated by Martin Clayton<sup>2</sup>—is the result of decades of research. As an exploration of the unique scale of Leonardo's scholarly output, 'Leonardo da Vinci: Anatomist' offers the most detailed insight into a great Renaissance mind yet assembled.

#### BIBLIOGRAPHY

Clayton, M. and Philo, R. 2010. edd. *Leonardo da Vinci: The Mechanics of Man*. London.

Syson, L. 2011. ed. *Leonardo: Painter at the Court of Milan*. London.

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<sup>2</sup> Namely, 'Leonardo da Vinci: The Anatomy of Man', Museum of Fine Arts, Houston, 1992 (this exhibition also travelled to Philadelphia and Boston that year and to Tokyo and Nagoya in 1995), and 'Leonardo da Vinci: The Mechanics of Man', Vancouver Art Gallery, Vancouver, 2010.