

Andrew Cunningham. 'I follow Aristotle': How William Harvey Discovered the Circulation of the Blood. New York: Routledge; 2022. xii+193 p. ISBN: 0-1032162244. 49,34 €

Among the most important discoveries in early modern science and medicine, William Harvey's discovery that there is one blood, one system of flow, in one direction, round and round (p. 7) was certainly crucial. The circulation of the blood has changed the western understanding about the functioning of animal bodies, grounding a universal knowledge, shared by every educated or uneducated person today. Even the illustration of valves in veins in Harvey's text is well known by everyone. Apparently, another book on Harvey seems pointless. Yet, Cunningham presents the reader this turning point in western science and medicine under a new light, as his main thesis is that only an Aristotelian anatomist as Harvey could have discovered the circulation of the blood.

Cunningham concisely repeats the story of the movement of the blood in the Preface to his book. Since Aristotle, through the anatomical work of Erasistratus of Ceos and Galen of Pergamum, physicians and philosophers shared the idea of two virtually separate blood systems, the one nourishing the body through veins and the second vitalising the body through arteries. This explanation remained consistent in the Renaissance and seventeenth century, despite a few challenges to it especially emerging in the Italian context, in Pisa and Padua. Yet, the narrative of a slow construction of a new theory is incorrect according to Cunningham. Instead, as Cunningham notes, when Harvey arrived in Padua, a forefront university in Europe, where Hieronymus Fabricius ab Aquapendente taught, he remained fascinated by the possibilities of new anatomical investigations developed within the Aristotelian framework (discussed in Chapter 1 and 2) (on Harvey's explicit Aristotelianism, see p. 20).

This point is crucial. Cunningham argues that Harvey pursued "the Aristotle project", which helped him achieving his discovery. Accordingly, Harvey explored the heart in order to fill a gap in Fabricius' work—explored in Chapter 3 of the book. Committed to an Aristotelian approach, Harvey investigated the different hearts of animals, in order to define their final causes —the 'for what purpose' question. Still, in 1618, a decade before publishing his masterpiece, he was dismayed by the discovery that the blood circulates (p. 27).

Differently from the ways historians have treated Harvey's discovery as a topic in the history of ideas (see chapter 10 of this book), as if it was a gathering of ideas developed by earlier scholars, in his book Cunningham explores Harvey's

project of enquiry: what was Harvey doing in his anatomical studies, and why was he doing it? His answer surfaces throughout the chapters of the book, namely, that Harvey's study of the circulation of the blood "was a sub-set of his research on the generation of animals" (p. 105).

In the first 2 chapters of the book, Cunningham discusses Aristotle's study of animals, and in chapter 3 he outlines Paduan Aristotelianism. In chapter 4, he presents a short biography of Harvey. These chapters are quite useful for students and scholars in general. Yet, in chapter 5, Cunningham delves into his argumentation, moving from the vegetative soul to the sensitive and rational souls—in paralleling Harvey and Fabricius' works (see tables at pp. 70-71 and 91-92), Cunningham ultimately uncovers their Aristotelianism. While something escapes to Cunningham's very clear exploration of Harvey's vegetative soul as endowing plants, such as, the notion of *primordium vegetale*, on which Guido Giglioni has importantly written, the author importantly outlines Harvey's attention to vegetation, that is, to generation. Still, a question remains: was Harvey's *colliquamentum* a physiological, material replacement to the soul, perhaps in the same way in which the blood is life and the soul?

In Chapter 6, Cunningham discusses the circulation of the blood as a unitary and continuous activity, making clear that this results from "the *deduction* of an argument about anatomical pathways, the rate of pulsation, the capacity of the chambers of the heart, the competence of valves..." (p. 102). In this sense, the circulation of the blood is not something one would just observe. This is an important issue in Cunningham's interpretation. Accordingly, in seeking causes of anatomical structures (i.e., their functions), Harvey explores the motion of the heart and blood, following an Aristotelian line of investigation, as Harvey studies the heart without looking at the lungs as Aristotle did. Still, instead of confirming Aristotle's view of the motion of blood, Harvey's "experiments showed him that [the Ancient's opinion] was the opposite of the truth" (p. 111), outlining the marvellous description of a moment of the discovery of the circulation of the blood.

In chapter 7, the author discusses the relationship between method and experiment in Harvey, somehow reuniting the study of the generation of animals with his discover of the circulation of the blood. Yet, Harvey's account on method and experiment is taken up with Aristotle's philosophy, according to Cunningham, challenging Descartes (pp. 117-118). In chapter 8, Cunningham discusses the role of blood in medicine after Harvey, concentrating on physiological, mechanical and chymical studies at large. In chapter 9 he explores why Aristotelian study of animals remained familiar to scholars, who have adjusted Aristotle to their claims, while in chapter 10 he describes the ways historians ha-

ve interpreted Harvey, somehow misrepresenting his work, and losing the latter's focus on the animal body and the vegetative soul, that is, as a willing follower of Aristotle, and not as a mechanist.

In conclusion, Cunningham reverses a major interpretative claim: according to him, there were not 2 Harveys, the modern one who discovered the circulation of the blood (1628), and the reactionary who worked on the generation of animals (1651). Instead, starting from the investigation into generation, Harvey explored the role of the heart and blood. In doing so, he followed an Aristotelian project. Within this line, Cunningham shows that Harvey constructs his reasoning, presenting an argument for persuasion rather than putting forward experiments as such. In sum, Cunningham convincingly outlines an important argument in the history of science and medicine, namely that Harvey was deeply Aristotelian, even when disclosing a crucial challenge to Aristotelian and Galenic physiology. Yet, this also shows Harvey not as a mere anatomist or a physician, but as a philosopher, aiming to construct animal life as a whole—a big issue in the seventeenth century, ultimately revealing the centrality and modernity of Harvey. For this reason, besides the role of the blood and its circulation, in dealing with generation, vegetative soul, animal bodies and animal life, Cunningham's book appears as a crucial text in understanding seventeenth-century medicine, science and philosophy.

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Marina Rieznik, Carla Lois, dirs. Técnica y estética de las imágenes. Elementos para pensar lo visual en las prácticas científicas y artísticas. Ciudad Autónoma de Buenos Aires: Equinoctialis & GHECIT; 2023. 320 p. ISBN 978-987-28737-5-2.

Libro colectivo, que puede descargarse en pdf de forma gratuita, resultado del workshop "Las ilustraciones científicas: técnica y estética en la producción de imágenes y conocimiento científico" organizado en 2018 por el Grupo de Historia y Epistemología de la Cartografía e Imágenes Técnicas (GHECIT) de la Universidad de Buenos Aires. Los capítulos de esta publicación han sido escritos por