



Andrew Cunningham, *'I Follow Aristotle': How William Harvey Discovered the Circulation of the Blood*, London and New York: Routledge, 2022, pp. X + 180, ISBN 9781032162232, £130

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The title says it all. Cunningham argues that, when Harvey wrote, 'I follow Aristotle', he really meant it and, specifically, that it is *De anima* which provides the key to understanding his entire research programme. He was 'an Aristotelian in his anatomical investigations from the very beginning to the very end' (p. 116), and it was only because of this focus that he could discover the circulation of the blood. While explaining what this means, Cunningham reflects on the history of ideas and its assumptions about how discoveries happen.

Cunningham opens by reminding us of the importance of the discovery of circulation: 'simply the most important discovery about the functioning of the human and animal body ever made' (p. 1). Precisely because it underlies everything we believe today about the body, all our medicine, this discovery seems to us obvious and inevitable. In terms of observing its movements, very little about the heart is self-evident (p. 114), but the effect of Harvey is that we are now unable to see the heart *without* all that he discovered, seeing its structure through understanding its function.

What would happen if, instead, we were to read the heart through Harvey's eyes, as part of asking 'how new views about nature ever arise' (p. 27)?

One of the stories we tell about Harvey is that he somehow discovered the circulation of the blood entirely on his own and not even in one of the main anatomical research centres of the time. But Harvey was not on his own: he had Aristotle, and he had one of his teachers from Padua, Girolamo Fabrizi d'Acquapendente (Fabricius). Aristotle was his 'General' and Fabricius his 'Guide'. Sixteenth-century Padua had a particular focus on Aristotle which included *De anima*, and Fabricius's interest in the entire animal kingdom was, as Cunningham demonstrates in a detailed section on *De anima*, an Aristotelian project. Aristotle did not study the animal kingdom in

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order to classify it, but because he was interested in universals: 'the animal' rather than just man, or even just animals. Specifically, Aristotle studied animals in order to understand what makes us alive: the soul, and the body was the vehicle of the soul.

For Aristotle, there was one soul but with five different 'faculties' – and man has all of these faculties, whereas plants have only the nutritive faculty (pp. 49–50). In this project on the soul, the heart is the most important part of the body, because it is the centre of the 'vegetative soul', the first part to come into being and the last to die: so, the soul is localized in the heart.

'Natural philosophy', unlike 'science', continued to be concerned with God and the soul (p. 40), and Fabricius took up Aristotle's research project. For him and for the others studying Aristotle in Padua: 'The soul is the act of the body' (pp. 67, 69), potentially a difficult position to take as it suggests that the soul dies when the body dies, thus contradicting Christian teachings.

There is evidence that some of Fabricius's students were not entirely happy with his teaching, perhaps, Cunningham suggests, because they were there to learn about human bodies, rather than 'the animal', which was the focus of both Fabricius and Aristotle. Cunningham makes the very interesting point that, with one of his jobs being the professor of anatomy and surgery at the College of Physicians for over forty years, Harvey was 'a semi-professional anatomist, the only one in England' with far more experience of human dissection than anyone else (p. 87). But in his *private* research, what he did was work on animals; further evidence that he, too, was driven by the Aristotelian programme on 'the animal'.

One of Cunningham's key arguments is that we need to read Harvey's 1628 treatise on the heart as part of the same Aristotelian research project which led to his 1651 treatise on generation. In 1651, Harvey wrote that Fabricius had 'left only the heart untouched' (p. 20). But Harvey was not trying to 'prove' the circulation of the blood: it was an entirely unexpected discovery and not one to which his research programme was directed. The heart had not previously been seen as anything to do with the blood; it was part of a different body system, linked to the arteries which carried 'spirit'. As this was one large project, Harvey's treatise on the heart – although published earlier – came *from* the treatise on generation and, specifically, from seeing the *punctum rubrum saliens*, the bloody point in the hen's egg. Aristotle wrote about how blood is present from the start of life in blooded animals, formed in the heart at the earliest stage of generation. What was new here for Harvey was the realization that the bloody point is blood, not a tiny heart; that blood comes first. This also made it possible to see blood itself as something to be studied.

In this persuasive reading of Harvey, Cunningham is clear on the dangers of wrongly labelling the different ways people in the past have studied the world. Current disciplinary boundaries, like biology, philosophy, comparative anatomy or taxonomy, hinder our understanding of history. He also rightly attacks the view that Harvey was the person who finally put together all the pieces of the jigsaw puzzle already found by his 'precursors'. The history of ideas creates precursors by a process of 'backward causation' (p. 140), often by promoting one's national heroes as almost, but not quite, making the great discovery. Cunningham quietly fumes, 'whenever these days I see historians writing about "precursors", I curse quietly to myself' (ibid.).

As part of his study of the historiography of Harvey, Cunningham has much to say about why certain writers or texts of the past feel more familiar to us than others. Why do we even want modern disciplines, such as biology, to be provided with a ‘history’? He goes back through various translators of Aristotle – D’Arcy Thompson, William Ogle, Jules Barthélemy-Saint Hilaire, George Henry Lewes, Armand-Gaston Camus – to identify the different ‘Aristotles’ they created, their translations being the product of how they saw Aristotle, for example as biologist or zoologist.

This is a readable, convincing and impassioned account of Harvey and is recommended not just for those studying the seventeenth century but for anyone working on Aristotle and his reception.

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