Pre-print; published version: “Fabrizio Baldassarri, Il metodo al tavolo anatomico. Descartes e la medicina. Canterano: Aracne, 2021. 259 pp. ISBN: 9788825539059,” *Nuncius. Journal of the Material and Visual History of Science*, 38(2), 2023, 481–484. DOI: https://doi.org/10.1163/18253911-bja10062

Fabrizio Baldassarri, *Il metodo al tavolo anatomico. Descartes e la medicina*. Canterano: Aracne, 2021. 259 pp. ISBN: 9788825539059.

The monograph *Il metodo al tavolo anatomico. Descartes e la medicina* by Fabrizio Baldassarri aims at “exploring the connection between Descartes’s philosophy and medicine [and] shedding light on its obscurities.”[1] Such a goal is attained by discussing Descartes’s philosophical, anatomical and therapeutical ideas and activities through an introduction and six chapters.

In the introduction Baldassarri discusses the relations of Descartes’s medical project, intended by Descartes as the ultimate step of his intellectual endeavours, with his overall philosophical ideas. In particular, Baldassarri focuses on the relations among disciplines such as metaphysics, physics, physiology and anatomy, showing how metaphysics enables to distinguish body and soul, physics provides a conceptualization of matter and the mechanical laws of movement, while physiology addresses the main notions of medicine (such as the heat of the heart), and anatomy empirically corroborates such physiological principles. On the ground of such a preliminary discussion, by considering chiefly Descartes’s posthumous *Regulae ad directionem ingenii* (written c. 1628) and his *Discours de la méthode* (1637), in chapter 1 Baldassarri explores (1) Descartes’s idea of *scientia*, consisting of the very certainty of the mind of itself, and (2) the method by which medicine can be purged of its traditional errors, that is by relying both on the intuition of evident and clear notions (such as that of the self), and on the use of deduction, through which physiological processes can be traced back to the mechanical causal relations established in physics. In this causal reconstruction, anatomy plays a crucial role because, through it, one can ascertain which combinations of matter and motions are involved in such processes. In order to introduce the reader to the next chapters, Baldassarri concludes the first one with an intellectual-biographical overview of Descartes’s medical interests (section 1.6) and of his relations with Dutch physicians (section 1.7)—though non-expert readers would probably have benefitted from a more extended treatment of such topics; in fact, in the course of the book Baldassarri considers Descartes’s medical ideas in the light of his exchanges with correspondents and criticizers and of their chronological evolution.

Hence, in chapter 2 Baldassarri starts to discuss Descartes’s physiology, focusing on its fundamentals, namely the accounts of the movement of the heart and blood circulation. In particular, Baldassarri explores the evolution of Descartes’s theory of heart beat, considering first

1 (p. 16): “intendo sviluppare il collegamento fra la filosofia cartesiana e la medicina, metterne in luce gli angoli oscuri, e scioglierne i nodi.”

his posthumous *Traité de l'homme* (written in 1630s), where the movement of the blood is explained by the idea of the heat of the heart, which makes the blood rarefying by a process of fermentation, and Descartes's *Discours*, where the heat of the heart is treated as the cause of all the other physiological processes, being the very internal principle of motion of the body. Second, by analysing Descartes's subsequent polemics with Vopiscus Plempius and his posthumous *Excerpta anatomica* (tracing to 1630s) and *Description du corps humain* (tracing to 1647–1648), Baldassarri shows how Descartes partially refined his account of heart beat; in fact, he took into account also anatomical observations, admitted that the heat of the heart has specific features, and introduced chemical principles in explaining the process of rarefaction of blood. Eventually, the author explores Descartes's attack, in a number of letters and in his *Description*, to the theory of the movement of the heart by William Harvey, who saw the heart as an active organ, namely a pump moving the blood, while Descartes criticized such a view maintaining that it is the blood which moves the heart.

Chapter 3, in turn, is devoted to Descartes's theory of sensations and passions, by which Descartes abandoned the traditional idea of sensitive soul. By taking into account Descartes's *L'homme*, *Excerpta*, and *Dioptrique* (1637), Baldassarri provides a full-blown reconstruction especially of the sense of vision, before discussing the subsequent evolution of Descartes's treatment of the idea of pineal gland, considered before 1640 as the seat of common sense, and progressively treated afterwards, as in his correspondence and *Les passions de l'âme* (1649), as the seat of the soul. The issue of the union—consisting, in Baldassarri's reconstruction, in sensations themselves and in the movements that the soul impresses to the body through the gland—, is addressed by considering first Descartes's treatment of mental diseases and showing how their healing is nothing but the method itself, namely the rigorous ordering of thoughts. In other words, the mind itself is a separate substance and its condition of sickness consists only in its bad directing. Second, Baldassarri reconstructs Descartes's account of passions by distinguishing between sensations—referring to external objects—and passions themselves, which still depend on the movements of the parts of the body, but more properly concern soul.

In chapter 4, Baldassarri moves to Descartes's treatment of nutrition and accretion, traditionally labelled, together with generation, as vegetative functions. First, he illustrates how nutrition and accretion are only marginally treated in Descartes's *L'homme* and *Discours*, where Descartes focused on the topic of digestion only as part of his treatment of heart beat and blood circulation. The digestion is, in fact, considered just as the process of generation of blood. Moreover, by showing how Descartes treated digestion just as a process of fermentation, Baldassarri claims that Descartes failed in providing an exhaustive and complete account of the topic. On the other hand, in two 1637 notes contained in his *Excerpta—Compendium de partibus inferiore ventre contentis* and *De*

*accretione et nutritione*—Descartes acknowledged in the functioning of the stomach a certain independence from heart beat and blood circulation, stating that the stomach is provided with his own kind of fire. Moreover, he successfully distinguished between non animated and animated bodies: the former, like rocks, do not nourish themselves, and their accretion or growth is just an apposition of parts; the latter, in turn, nourish themselves, and their accretion is the result of an internal change of the parts of the body, or *immutatio*. Such an idea is treated by Baldassarri against its Scholastic background, i.e. by a kind of analysis which, if applied to other traditional notions in physiology—like those of the vegetative and sensitive soul, manifest and occult qualities, forms, and faculties—could have provided the reader with a benchmark to acknowledge to a fuller extent both Descartes's innovations and the incompleteness of some of his accounts. In fact, as noted by Baldassarri, Descartes does not explain, in such texts, how animated bodies grow: this process is addressed by him only in a note on plants, contained in his *Excerpta*. It was only in his *Description* that Descartes eventually developed an account of accretion of animal bodies, where it is nonetheless treated briefly, and without a clear relation with the process of digestion.

In turn, in chapter 5 Baldassarri discusses Descartes's treatment of the last vegetative function, namely generation. In Baldassarri's reconstruction, in his *L'homme*, Descartes aimed at grounding the explanation of generation on the use of the method and mechanical principles: an explanation which he hence developed mostly in his anatomical notes. In his *Excerpta* and posthumous *Primae cogitationes circa generationem animalium* (tracing to 1647–1648) Descartes distinguishes the particles and movement of the seeds of plants and animals, which respectively have a circular and spherical movement, leading to the growing of beings attached to the ground (plants) or free in their movement (animals). On the basis of this theoretical-mechanical framework, Descartes explains how plants and animals grow from seed, by using observations, hypotheses and examples, all consistent with his theoretical model. In particular, as far as animals are concerned, Descartes develops a theory according to which heat is the primary factor allowing the union of the seeds and the growing of the organism: a growth which is described in his texts (including his *Description*) as following different, progressive steps. Accordingly, Descartes managed to develop an embryology based on mechanical laws—albeit fundamentally incomplete, given the lack of sufficient anatomical observations, as noted by Baldassarri.

Eventually, in chapter 6 the author addresses Descartes's therapeutics, showing how, despite having been labelled by Descartes himself as the goal of his philosophy, it had a limited development, due to (1) the uncertainty of the knowledge of human body and remedies, (2) the limited knowledge by Descartes of pathologies, and (3) the relations of method and therapeutics, leading Descartes to assume a more theoretical than practical approach. The focus is on the diagnoses and remedies suggested by Descartes to his correspondents. Baldassarri shows that Descartes interpreted diseases

in terms of obstructions of vessels (a theory whose reception should perhaps have deserved more attention in the book, as it inspired a major post-Cartesian approach to medicine, namely iatromechanics), and provided remedies consisting mostly in dietetics, grounded on the idea that the body has capabilities of self-healing and can recognize by sensory experience what is good for itself. In the last part of the chapter Baldassarri faces with the problem of the presence of a science of life in Descartes's philosophy, discussing some recent positions in secondary literature (Gideon Manning, Barnaby Hutchins, and others), and showing how Descartes successfully differentiated animated bodies from machines, as the former can grow and nourish itself by an internal principle, while machines can only undergo an external apposition of parts. This notwithstanding, the problem of life was not explicitly discussed by Descartes, whose medical theory was moreover left largely incomplete, and whose main merit was to have attempted to develop a medicine on the basis of an up-to-date, 'modern' philosophical account.

In conclusion, Baldassarri offers a reliable reconstruction of Descartes' main positions in medicine: he systematically enters into details and shows how Descartes developed his medical theories from his physical principles and methodological precepts, and how such theories evolved over time and through Descartes' social and intellectual network.

*Andrea Strazzoni* | orcid: 0000-0001-5552-2592 Università degli Studi di Torino, Turin, Italy
*andreastrazzoni@gmail.com*