

# The Arabic, Latin and Hebrew Reception of Avicenna's Physics and Cosmology edited by Dag Nikolaus Hasse and Amos Bertolacci

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Volume 1, 2020

URI : <https://id.erudit.org/iderudit/1087123ar>

DOI : <https://doi.org/10.33137/aestimatio.v1i1.37679>

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Éditeur(s)

Institute for Research in Classical Philosophy and Science

ISSN

1549-4470 (imprimé)

1549-4497 (numérique)

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Citer ce compte rendu

Janos, D. (2020). Compte rendu de [The Arabic, Latin and Hebrew Reception of Avicenna's Physics and Cosmology edited by Dag Nikolaus Hasse and Amos Bertolacci]. *Aestimatio*, 1, 277–284.  
<https://doi.org/10.33137/aestimatio.v1i1.37679>

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*The Arabic, Latin and Hebrew Reception of Avicenna's Physics and Cosmology* edited by Dag Nikolaus Hasse and Amos Bertolacci

Scientia Graeco-Arabica 23. Berlin/Boston: De Gruyter, 2018. Pp. 549. ISBN 978-1-61451-774-0. Cloth US \$112.10

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Avicenna occupies a unique place in the history of philosophy in Islam. Not only was the synthesis that he elaborated one of the culminating points of classical Islamic culture; it also constituted fertile ground for the flourishing of various intellectual trends in the post-classical period of Islamic history (from the early 13th century onward). His corpus, and especially his central works *The Cure* (*Kitāb al-Shifā'*), *The Salvation* (*Kitāb al-Najāt*), and *Pointers and Reminders* (*al-Ishārāt wa-al-tanbihāt*), inspired generations of Muslim theologians and philosophers, and were the object of a long and rich commentary tradition that extended up to the 19th century. But his impact was not by any means restricted to a Muslim audience. Avicenna holds the rather unique privilege among medieval thinkers of having (like Aristotle) profoundly shaped the development of Latin, Hebrew, and Arabic philosophy and theology. But while his metaphysical legacy has been appreciated for some time and has been the focus of considerable scholarly research, the physical theories that he bequeathed to posterity have not been extensively studied.

Bearing this in mind, the present volume is a rich and important contribution to the history of Avicenna's physics and its critical reception in medieval Jewish, Christian, and Islamic intellectual history. As a companion piece and sequel to the previously published *The Arabic, Hebrew and Latin Reception of Avicenna's Metaphysics* (prepared by the same editors and publisher) it

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effectively complements our assessment of the impact that Avicenna had on later philosophical activity in the Islamic world and medieval Latin Europe. The book is a collection of 13 articles written by specialists in their respective fields covering a large array of issues, with an emphasis on the physical notions of place, time, and motion, as well as on meteorology. The studies successfully combine philological expertise with insightful analyses of the main philosophical theories articulated in the works of Avicenna and his commentators. Since in many cases these studies tread new ground and delve into hitherto unexamined texts, they do not always make for easy reading and often assume a highly technical character. Accordingly, the volume is aimed primarily at graduate students and specialists in the field of medieval intellectual history rather than at a lay readership seeking to learn more about medieval philosophy.

There is a cluster of themes that run through the volume and unify its various contributions. One of them has to do with the systematic and sometimes scholastic nature of Avicenna's reception in later philosophical circles. The studies in the volume uniformly testify to the high level of philosophical reasoning and argumentation that were deployed to make sense of Avicenna's ideas, as well as to elaborate or amplify his theories and, at times, also to question or even criticize his position on specific points of doctrine. The book showcases some of the main actors and figures involved in the dissemination and interpretation of Avicenna's philosophy in the Middle Ages. In most cases, these thinkers approached Avicenna's physics in a rather programmatic manner and with a specific aim in mind, either as part of an effort to interpret Aristotle or from within the tradition established in some school of commentary on the master. In other instances, the aim was to provide a harmonizing synthesis of various philosophical sources or to refute him or even to explain some passages of scripture in a rational or naturalistic manner by relying on his works. Regardless of the specific intention orienting these readings of Avicenna, medieval thinkers in general had direct access to at least some of his principal physical works, notably, his treatises on meteorology and *Physics of The Cure* (*al-Samā' al-ṭabī'ī*), which lie at the heart of the volume.

The rigor and technicality of the later responses to Avicenna, as well as their dialectical and sometimes scholastic style and format, are particularly well brought out in the articles by Jon McGinnis, Jules Janssens, Peter Adamson, and Andreas Lammer. These studies suggest that Avicenna, by the late 12th or early 13th century, had begun to occupy a position in the Arabic tradition comparable to that of Aristotle in the Greek commentary tradition

of Late Antiquity. Just as it was inconceivable for an aspiring late-antique philosopher not to grapple with the views of the main authorities, Plato and Aristotle, so it would have been very difficult for an Arabic scholar from the 12th century onward not to engage directly with Avicenna's writings. This point also applies to the Latin West in the aftermath of the translations of Avicenna's works from Arabic to Latin, which unfolded in particular in the city of Toledo in Spain.

As the various articles focusing on the Latin reception of Avicenna emphasize, the master's legacy proved crucial in orienting discussions on meteorology and physics in medieval Europe. Jean-Marc Mandosio's article documents the reception of Avicenna's meteorological treatises in the Latin West and argues that Avicenna became an authority in this field, to such an extent that his writings were sometimes used to fill gaps in the Aristotelian corpus. As Cecilia Trifogli's comparative study convincingly shows, Avicennian physics underpins many of Roger Bacon's (d. 1292) most important theories in his *Communia naturalium*, such as those focusing on nature and change. Katrin Fischer for her part exposes the similarities and differences between William of Auvergne's (d. 1249) and Avicenna's conceptions of efficient causality, particularly in how it relates to eternity and to God as a cause of the world.

Yet, the fact that Avicenna achieved an authoritative status in post-classical Islamic intellectual history and in the Latin West should not divert our attention from the very vivid critiques that his philosophy inspired among certain groups. Cristina Cerami's article, which systematically maps the various objections that Averroes had to Avicennian physics, is a welcome proviso regarding Avicenna's legacy, which was not always received positively or constructively. Through a meticulous analysis of Avicenna's and Averroes' physical texts, Cerami shows that Averroes' responses to Avicenna were systematic in nature and part of a general strategy aimed at purging Aristotle's philosophy from these external "Avicennizing" elements. (This thesis is also put forth in Bertolacci's study.) Likewise, the articles by Janssens and Adamson focus on the great polymath and Ash'arite theologian Fakhr al-Dīn al-Rāzī (d. 1210) and tease out Rāzī's critical attitude and free philosophical spirit, as well as his willingness to depart from Avicenna on key physical issues.

In general, however, one observes a rather conciliatory and constructive attitude towards Avicenna's legacy. Medieval scholars deployed a variety of means to interpret, adapt, and integrate Avicennian material into their systems, often in an attempt to harmonize it with religious considerations. McGinnis' article, for example, stresses the long-lasting impact of certain

Avicennian ideas that trickled through various layers of commentaries in the later Islamic tradition, and which in general were accommodated within a larger religious framework. It also bears testimony to the fact that later commentators did not hesitate to resort to Avicenna's logical and metaphysical theories in order to contextualize or explain his physical ideas. Resianne Fontaine shows that Abraham ibn Daud, a 12th-century Jewish scholar involved in the translation movement of Arabic to Latin in the Iberian Peninsula, most likely relied on Avicenna's *The Cure*, as well as on Ghazālī's (d. 1111) summary of philosophical doctrines entitled *On the Aims (or Doctrines) of the Philosophers* (*Maqāṣid al-falāsifa*), to elaborate his own doctrine. Like many other medieval thinkers, he sought to reconcile scripture and philosophy,<sup>1</sup> and Avicenna's theories played a key role in that process. Gad Freudenthal provides a thought-provoking analysis of how various Jewish thinkers grappled with the problem of "the formation and perseverance of dry land". Freudenthal's study reviews an array of "fideist and rationalist interpretations" articulated by Jewish scholars of the 13th and 14th centuries. Remarkable in this regard is Samuel ibn Tibbon's (d. 1232) willingness to borrow Avicenna's cosmological and meteorological arguments in order to argue for the periodic flooding of dry land by the sea and to provide a philosophical exegesis of certain passages of the Book of Genesis. And, while Cecilia Trifogli shows that Roger Bacon's involvement with Avicennian physics was primarily philosophical and intellectual in nature, Katrin Fischer clearly brings out the religious dimension of William of Auvergne's evaluation of Avicennian theories, particularly with regard to the controversial and religiously sensitive topic of the creation of the world; even then, William did not shy away from integrating key Avicennian concepts in his system.

Occasionally, the priority was to reconcile Avicenna with other philosophical views. As Amos Bertolacci shows lucidly, Albert the Great, in his commentaries on the *Physics* and *Metaphysics*, implemented a threefold strategy ("material", "stylistic", and "doctrinal") aimed at harmonizing Avicenna's and Averroes' physical theories, a synthesis which in turn forms a cornerstone of his own philosophical system. This feature of Albert's approach to philosophy suggests a certain evolution in his understanding of Avicennism and Averroism while at the same time underscoring his reliance on these Arabic thinkers.

<sup>1</sup> This is indicated by the very title of Abraham's main work, *The Book of Exalted Faith That Brings Agreement between Philosophy and Religion*.

Thus, in addition to providing engaging case studies of Avicenna's influence, the volume offers a more fine-grained assessment of the reception of the three great philosophical authorities in the Middle Ages, Aristotle, Avicenna, and Averroes, that shows complex and shifting patterns of influence in the works of individual Latin scholars. And, while it has long been known that Avicenna's logic and metaphysics exercised a profound influence on medieval Jewish and Christian thinkers located in the Western Mediterranean and in Europe from the 12th century onward, the studies gathered in this volume corroborate the hypothesis that Avicenna's physics was also an important source of inspiration for these philosophers.

One of the book's great merits is to dwell on and illuminate some of the key mechanisms at play in the reception of Avicenna's works. It is fascinating to realize that the process of interpreting Avicenna inevitably led to doctrinal transformation and adaptation as well, a phenomenon that is very well brought out in the volume. When it comes to physics in particular, it was common for medieval thinkers to adhere to Aristotelian and Avicennian theories, while at the same time grounding these physical theories in a cosmological and theological paradigm that was often inspired directly by the religious texts. This shows the great extent to which science—in this case physics, but the same applies to astronomy—could be reconciled with a religious worldview without preventing creative and experimental thinking.<sup>2</sup>

In other words, one could be an Aristotelian or an Avicennian regarding specific issues of physics, while otherwise upholding the tenets of divine creation or the temporal finitude of the world, and one could even rely on Avicenna to interpret specific aspects of scripture. These dynamics between Avicennian physics and religious views are examined in detail in the volume, which sheds considerable light on strategies of textual adaptation, assimilation, and harmonization, as well as on Avicenna's (largely involuntary) role in what A. I. Sabra once called the "naturalization" of science in an Islamic setting.

In this connection, the book also provides valuable information regarding exactly which Avicennian works were instrumental in shaping the later tradition of physics in Hebrew, Latin, and Arabic. This textual problem is more difficult than it first appears, since medieval scholars rarely acknowledge their sources. In particular, the issue of the putative influence of the sections of *The Cure* and *Pointers and Reminders* bearing on physics are explored in

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<sup>2</sup> For an example of the latter, see Adamson's chapter [65–100].

detail, with a complex picture arising. The reliance on either was due in part to geographic and temporal circumstances, but mostly to the way in which the Avicennian corpus was preserved and transmitted, a topic that remains only partially understood to this day.

In general, it was the part on physics in Avicenna's *Pointers* that enjoyed the most popularity in the eastern swaths of the Islamic world, although even there it was occasionally superseded by the *Physics of The Cure*. In the Latin West and in medieval Hebrew circles, where the *Pointers* remained unknown, *The Cure* (*Meteorology*, *On the Heavens*, *Physics*, and so on) represented the main text and was sometimes read in conjunction with Ghazālī's summary of Arabic Peripatetic philosophy, the *Maqāṣid*.<sup>3</sup>

In this context, the volume also usefully explores dynamics of textual transmission and translation from Arabic to Hebrew and Latin. This is the case notably in the article by Hasse and Büttner, which seeks to "lift the anonymity" of many Arabic to Latin translations by relying on computational stylometry and a careful lexical analysis of the extant translations. Their study confirms many of the hypotheses proposed by earlier scholars (notably Manuel Alonso and Charles Burnett) regarding the authorship of some important translations and supports highly plausible theories regarding other problematic texts (including Avicenna's *Physics of The Cure*, the translation of which into Latin Hasse and Büttner attribute to Gundisalvi). Ultimately, their study expands the corpora of translations attributed to key figures such as Dominicus Gundisalvi, Michael Scot, and Gerard of Cremona.

I have a few qualms with the volume. One of them is that the editors nowhere provide a sustained and satisfactory explanation of the term "cosmology". This is problematic inasmuch as classical Arabic does not have a word that neatly corresponds to it. What may approximate it best is the expression «'ilm al-hay'a», which eventually came to designate "astronomy" in the Arabic tradition, especially in post-classical times, but which during the classical period co-existed with a variety of other locutions such as «'ilm al-nujūm» and «aṣṭrunūmiyā», with which it bears an ambiguous relation (notably when it comes to the place and legitimacy of astrology). In this connection, the editors' proposal in the introduction [1] to construe the expression «ḥikma muta'āliya» as meaning cosmology seems unconvincing,

<sup>3</sup> It should be noted that the latter was sometimes erroneously perceived as a genuine philosophical work, when Ghazālī in fact had probably intended it as a premise to his critical onslaught on the Arabic philosophical position as embodied in his *Incoherence*.

and this idea is at any rate not explored in detail in the article by Gutas that deals exclusively with the meaning of this phrase. Gutas' erudite study unravels the syntactic, lexical, and terminological problems associated with «al-ḥikma al-mutaʿāliya» (a *hapax legomenon* in the Avicennian corpus). Thanks to a detailed philological analysis of the later Arabic commentaries on Avicenna, it provides an illuminating case study of the relation between language and philosophical meaning. At any rate, it would have been worthwhile for the editors to devote more space to the notion of cosmology, all the more so since it is distinguished from physics in the title of the book, and since most of the articles deal with the sublunary world rather than with the heavens and heavenly phenomena *per se* (arguably the first sense of cosmology).

Furthermore, although one can only applaud the breadth of the volume and the high quality of its individual contributions, a critical reader may remain skeptical at the attempt to address the Jewish, Christian, and Islamic traditions in a single stroke. Although the book succeeds in corroborating Avicenna's position at the confluence of these three traditions, and thus also in stressing some of the textual and intellectual commonalities that connect them, it inevitably only scratches the surface of what appears to have been an extremely complex, widespread, and multifaceted phenomenon, one, that is, which seems too broad to fit within the covers of a single volume. In this regard, if the Muslim reception of Avicenna is adequately represented (six articles, two of which focus on the works of Fakhr al-Dīn al-Rāzī, which seems justified given his sheer stature in Islamic intellectual history and his pivotal role in the later interpretation of Avicenna), the Christian reception is less well represented (five studies, or rather four, since one article deals with technical issues of translation); and the Jewish reception, inadequately so, with only two studies focusing on this theme.

Moreover, this approach also leads to some lacunae and glaring omissions relative to the tradition to which Avicenna himself belonged. For example, one regrets the absence of a study on the Arabic Jewish philosopher Abū al-Barakāt al-Baghdādī (d. 1165), who often adopted a highly original approach to physics, and whose works effectively underscore the complex dynamics of borrowing and departing from Avicenna. Likewise, one misses a study on Naṣīr al-Dīn al-Ṭūsī (d. 1274), one of the great exponents of Avicennian philosophy in the 13th century and a towering theorist of Shīʿī theology, or of Mīr Dāmād (d. 1631) and his pupil Mullā Ṣadrā (d. 1640), whose evaluations of Avicennian physics and metaphysics in the 17th century represent a



fascinating aspect of the reception of Avicenna's ideas, but one not explored in the volume.

In view of the limited time span covered by the book, its title may strike one as somewhat overstated and perhaps better adapted to a multi-volume publication. At any rate, a chronological pointer inserted in the title would have been a welcome addition. Perhaps somewhat inadvertently, therefore, the volume raises some acute methodological and terminological questions that derive from the very subject that it tackles: How can we cogently and systematically study a phenomenon as broad and rich as the reception of Avicenna's philosophy in three distinct religious traditions? Should we not distinguish between different Avicennian or Avicennizing trends, that is, between various Avicennisms? Are general notions such as cosmology at all meaningful when applied to such varied endeavors and interpretations? More insight into these questions would have been welcome.

In spite of these minor shortcomings, the volume is an essential contribution to the history of Avicennian and post-Avicennian philosophy. It treads new ground, and there can be little doubt that the various avenues of research it opens will be thoroughly explored in the decades to come.