

# Avicenna's Intuitionist Rationalism

Ismail Kurun

**Abstract:** This study is the first part of an attempt to settle an almost century-old debate among the historians of medieval philosophy by harnessing the resources of analytic philosophy. The debate in question is about whether Avicenna's epistemology is rationalist or empirical. To settle the debate, I first articulate in this paper the three basic theses of rationalism and one single basic thesis of empiricism. Then I probe Avicenna's epistemology in his major works according to the first basic thesis of rationalism (i.e., the intuition thesis). In the end, I find Avicenna committed to this thesis on at least one significant point, namely the intuition of the intelligible forms or essences. This suffices to count Avicenna as rationalist, but in a sequel, I shall probe Avicenna's epistemology according to the other two basic theses of rationalism, presenting further evidence that he was a rationalist, not an empiricist.

**Keywords:** Avicenna (Ibn Sīnā), empiricism, rationalism, intuition, abstraction

## 1. Introduction

One important problem that ignited huge controversy in the study of the history of medieval philosophy is whether the epistemology of Avicenna or Ibn Sīnā (980–1037) is rationalist or empirical.<sup>1</sup> The controversy emerged mainly due to the difficulty in interpreting Avicenna's works which continued the precarious harmonization of Aristotelian abstraction and Neoplatonic emanation effected in the late antique period. The methods of abstraction and emanation are two separate solutions offered respectively in *De anima* III.4-5<sup>2</sup> and *Enneads* IV-VI (pseudo-*Theology of Aristotle* as known in its medieval Arabic translation and adaptation) to a key epistemological problem, namely how the rational soul acquires the intelligible forms. As Avicenna is among the most influential philosophers of the Middle Ages, the result of this seminal debate emerging from this controversy is to have far-reaching consequences on our understanding of the entirety of medieval philosophy. Historians still widely disagree about the issue, although they have been discussing it since 1929 when Étienne Gilson presented the first solution.

Gilson's solution was a reduction of abstraction in Avicenna to emanation. He made this reduction for the sake of consistency, arguing, in brief, that all abstraction is emanation. This

meant interpreting Avicenna's epistemology in a Neoplatonic scheme. In this interpretation, abstraction is an activity not of the rational soul but of the Active Intellect. After the abstractive process it undertakes, the Active Intellect emanates the intelligible forms upon the rational soul. It was on this interpretation that Gilson (1930) developed his notion of *augustinisme avicennisant*, a school of thought in the Latin West, synthesizing Avicenna's emanationism and Augustine's illuminationism in a broader mystical framework.<sup>3</sup> In their own diverse ways, Fazlur Rahman, Herbert Davidson, Deborah Black, Olga Lizzini, Cristina D'Ancona, Richard C. Taylor, and Jari Kaukua argued for the epistemological primacy of emanation over abstraction in Avicenna, as I shall discuss shortly. This emanationist interpretation came to be understood as meaning that Avicenna's epistemology is rationalist, since the rational soul acquires the intelligible forms by emanation from an external source.

Dimitri Gutas developed a rival interpretation, first in a monograph in 1988. He (2014, 179–201) argued that Avicenna did not use emanation as a solution to the epistemological problem; rather, Avicenna employed emanation as a solution to an ontological problem, namely the problem of where the intelligible forms are preserved after being acquired via abstraction. Here, the Active Intellect was just a warehouse of the intelligible forms serving as a sort of external memory bank for the rational soul. Thus the rational soul acquires the intelligible forms only by abstraction. Dag N. Hasse, Jon McGinnis, and Tommaso Alpina agreed with the abstractionist interpretation despite making important modifications. According to this interpretation, Avicenna's use of abstraction, at least as his central epistemological method if not the only one, provides his philosophy with a strong empirical basis. Gutas (2012, 424) later based on this interpretation his bold historiographical claim that the thorough empiricism of Avicenna might be the precursor of Locke's empiricism in *An Essay Concerning Human Understanding* (1689). Thus we now have two opposing sides on this debate, the 'emanationists' and the 'abstractionists' as conveniently dubbed, the former arguing that Avicenna is a rationalist while the latter contending that he is an empiricist.

I believe the debate needs a closer analysis of empiricism and rationalism than has so far been conducted. It is difficult to find in the works of the debaters a detailed account of these two positions, except for in one paper by Kaukua (2020, 217–20) who provides an account of *Lockean* empiricism to challenge Gutas's claim that Avicenna was a full-blown empiricist prefiguring Locke. However, Kaukua writes that his immediate aim is not to corroborate either side of the debate; rather, he primarily intends to reject Gutas's claim that Avicenna's empiricism heralded Locke's. So, although I believe Kaukua succeeds in his purpose, particularly with the apt contrast he draws between Locke and Avicenna on our cognitive ability to know essences, his paper does not intend and thus does not settle the debate in its entirety, despite arguing for a rationalist interpretation of Avicenna's epistemology. To settle the debate, I believe we need a comprehensive analysis of rationalism and empiricism. Also, it should not be assumed that emanationism equals rationalism and that abstractionism equals empiricism, for the issue is more complicated, as I shall explain shortly.

In this paper, I start in section 2 by providing a comprehensive analysis of empiricism and rationalism as understood in contemporary epistemology. I find three basic theses of rationalism and one basic thesis of empiricism. I go on to address the risk of anachronism, explaining why and to what extent these criteria map onto the debate between the emanationists and the abstractionists. In section 3, I first explain why a close look at intuition in analytic epistemology is crucial to understand intuition in Avicenna, addressing the risk of anachronism again. I then provide the outlines of the core idea of intuition as understood in analytic epistemology. In section 4, I proceed to examine Avicenna's major works to see whether he is committed to the first basic thesis of rationalism (i.e., the intuition thesis or intuitionism) to settle the debate. I find out that Avicenna commits to intuitionism in at least one major way. I then address a potential objection to my conclusion. Demonstrating Avicenna's commitment to intuitionism suffices to show that Avicenna's epistemology is rationalist. Yet, in a second paper, I will probe Avicenna's views according to the other two basic theses of rationalism, showing that Avicenna commits to the third basic thesis (i.e., necessary/certain knowledge thesis) as well, further strengthening his rationalism.<sup>4</sup>

## 2. Rationalism and Empiricism

Rationalism is commonly regarded as a system of commitments to certain philosophical positions. John Cottingham (1997, 9) points out that rationalism has three major strands: (1) *innatism*, the view that the mind starts out with certain basic concepts or the knowledge of certain basic truths; (2) *apriorism*, the view that we can know something without using our senses; and (3) *necessitarianism*, the view that we can know necessary truths about reality. Peter Markie and M. Folescu (2021, § 1.1) too identify three claims and argue that holding any one of them is sufficient to make one a rationalist; they are (1) *The Intuition/Deduction Thesis*, namely, the claim that we can know certain propositions by intuition alone and deduce some other knowledge from these intuited propositions, (2) *The Innate Knowledge Thesis*, and (3) *The Innate Concept Thesis*, the last two together making up Cottingham's *innatism* above.<sup>5</sup>

Cottingham's and Markie and Folescu's lists encompass all fundamental theses of rationalism, and we may merge them into a single list of *basic theses of rationalism*: (1) the intuition thesis or intuitionism, (2) the innate knowledge/concept thesis or innatism, (3) the necessary/certain knowledge thesis or necessitarianism. In this list, Cottingham's criterion of apriorism is subsumed under (1) and (2), because *a priori* knowledge would amount to intuitions or innate knowledge/concepts. But note that, besides truths, intuitionism would speak of concepts and even properties, for some rationalists claim to intuit concepts or epistemic or modal properties rather than truths, as I shall explain shortly. Importantly, these truths, concepts, and properties claimed to be knowable by intuition alone provide substantive knowledge or factual content about the external world.

As opposed to the basic theses of rationalism, empiricists adopt a version of a single basic thesis, *The Empiricism Thesis*, the view that all our knowledge and concepts come exclusively from experience (Markie and Folescu 2021, § 1.2). It might be objected that this is too narrow a definition, but in fact it accurately captures the single fundamental claim of empiricism. Thus it

comprehends the empiricism of Locke and others, notably analysts, though they do not invariably hold the same version of empiricism.<sup>6</sup>

It should be noted that empiricism and rationalism are mutually exclusive, such that an empiricist cannot hold any of the three basic rationalist theses, and a rationalist cannot hold the single basic thesis of empiricism. That said, a philosopher may be a rationalist in one field, empiricist in another, or vice versa, but cannot be both in the same field. Indeed, many philosophers espouse empiricism in, say, natural philosophy but rationalism in, say, ethics. Another point to note is the fact that the empiricism–rationalism spectrum does not exhaust all ways of knowing claimed to be possessed by philosophers (Markie and Folescu 2021, § 1.2). Knowledge claims such as divine revelation, astral prognostication, divination, and perhaps theurgic gnosis (Shaw 2017, 240) are supra-rational knowledge that is neither empirical nor rationalistic.

Here emerges the concern of anachronism, namely, whether the distinction between empiricism and rationalism maps onto the debate on Avicenna between the emanationists and the abstractionists. To address this concern, I believe that the distinction between empiricism and rationalism maps largely, albeit not entirely, onto the debate in question. It maps *largely*, since the philosophical question triggering the debate between the emanationists and the abstractionists is the same as the one between empiricism and rationalism, that is, how we attain our knowledge—put differently, whether we attain it only through experience or we have any non-experiential source(s) of knowledge, be it rationalistic or supra-rational. Empiricism and rationalism are two broad terms encompassing the vast majority of solutions to this question, the remaining ones being supra-rational solutions. It was for this very reason that the debate between the emanationists and the abstractionists naturally evolved since Gilson into one between rationalism and empiricism. Moreover, the debate between empiricism and rationalism started among Greeks and many medieval Islamic philosophers including Avicenna were aware of the distinction. Because the debate springs from such a fundamental philosophical problem, it is still alive in contemporary epistemology as well. All this makes the distinction between rationalism and empiricism in contemporary epistemology indispensable to understand the debate between the emanationists and the abstractionists. However, the distinction between empiricism and rationalism does not map *entirely* on the debate at hand, since, as I shall argue in what follows, emanationism is neither empirical nor rationalist, but ‘supra-rational’.

We shall now proceed to investigate Avicenna’s epistemology according to intuitionism. As is typical with medieval thinkers, Avicenna does not present his theory of knowledge in a systematic manner. His scattered epistemological views can chiefly be found in his logic and philosophical psychology, and, to a lesser extent, in his physics and metaphysics. I shall discuss the vast secondary literature only insofar as the space permits. I first provide an outline of intuition in analytic epistemology and then argue that, unlike the common assumption in contemporary scholarship, Avicenna does not invoke intuition in only one way in his epistemology. I demonstrate that he uses intuition in at least one additional way which is

epistemologically more consequential than the first one. This shows the presence of intuitionism in his philosophical system.

### 3. What Is Intuition?

First of all, I believe that analytic philosophy offers the best tools available to understand intuition in Avicenna. This raises the risk of anachronism again. Also, why analytic philosophy and not continental philosophy or, say, Kant?

Now, intuition or the claim of intuitive knowledge/concept or some other entity is a solution to a certain problem, namely, What is the source of some of our mental content if not sense experience? Although analytic philosophy is far from perfect, this problem is an analytic one *par excellence*, which leads us to the fact that analytic philosophers arguably offer the most sophisticated treatment of the problem, and a considerable part of this effort has been spent on intuition. Thus, seeking to solve this problem, defenders of intuition, either Avicenna or some analysts, as we will discuss shortly, have come up with a similar solution, namely, that we have a capacity of rational intuition. Most philosophical ideas have been produced not in a vacuum but as solutions to certain problems, a fact which often makes philosophers of different times and places conversation partners on the same problem. Hence, literature on intuition in analytic philosophy is indispensable to understand intuition in Avicenna without incurring the risk of anachronism, as I hope will be obvious in the following.

Now, there is no agreement among analytic philosophers as to what intuitions exactly are. Yet analytic philosophers are agreed that an intuition is something immediate, not discursive or inferential. They have claimed to know intuitively truths, concepts, or entities<sup>7</sup> in various areas, ranging from mathematics and logic (e.g.,  $1+1=2$ ; and if not-not-p, then p) to more controversial ones (e.g., moral intuitions, such as: it is wrong to torture innocent children; or other intuitions about the external world). Although there is no agreement that we really know such things intuitively, particularly moral or other substantive truths or concepts or entities about the external world, there is widespread agreement that what they all share is that they are known non-inferential. The intuitive truths, for instance, just *seem* to be true as soon as we consider them. Put differently, they are immediate intellectual seemings or graspings. Hence, one can safely define intuition as (i) the *act of intuiting* certain concepts or entities or the truth of a certain proposition directly by reason in contrast to grasping it inferentially or through discursive reasoning based on empirical evidence; (ii) the *mental content acquired through this act*, the intuited; (iii) the *rational capacity that intuits*, a type of internal perception or insight. What is crucial for rationalism here is that it is only the claim of intuition of *substantive* truths or entities that makes a philosopher committed to the intuitionism of rationalism, whereas the intuition of *empty* entities (empty truths, concepts, and other entities in logic and mathematics which are only about the relations of the contents of our minds and thus lack factual content) does not commit one to intuitionism. The former is the *intuition of substantive entities*, the latter the *intuition of empty entities*. We can now proceed to scrutinize Avicenna's works to see how he uses intuition to acquire substantive entities.

## 4. Intuitionism in Avicenna

### 4.1. Avicenna's 'Empty' Use of Intuition: *Ḥads*

Traditionally, historians of Avicenna assume<sup>8</sup> that Avicenna's theory of intuition is *exclusively* presented in his notion of *ḥads* whose *literal sense* is 'intuition'. Here is how Avicenna (2011, 148.iii, p. 134) defines *ḥads* in his *Deliverance: Logic (al-Najāt: al-Manṭiq)*: "Sharpness of intellect is a capacity of preparedness that belongs to intuition (*ḥads*). And intuition (*ḥads*) is a movement towards correctly hitting upon the middle term when the problem has been posited." Avicenna (2014, III.11, p. 103) describes *ḥads* similarly in his *Remarks and Admonitions (Kitāb al-Ishārāt wa-l-Tanbīhāt)* as swiftly hitting upon the middle term in a syllogism, taking his cue from Aristotle's *APo* I.34 about 'quick wit (*agchinoia*)'.<sup>9</sup>

Before coming to my analysis of intuition in Avicenna, it is helpful to consider the criticism of inconsistency Rahman leveled at Avicenna's idea of *ḥads*. According to Rahman (1981, 94–5), deducing validly from a syllogism is a strictly step-by-step process which therefore can never be instantaneous. Consider the following syllogism:

All men are mortal. Socrates is a man. ∴ Socrates is mortal.

As in all valid syllogisms, the conclusion that Socrates is mortal is deduced from the two premises in a technical way that can never be immediate, that is, through intuition, Rahman argues. However, I contend that a charitable interpretation can assume that what Avicenna means by *ḥads* is just swiftly spotting the middle term which leads to a *very quick* deduction, though it must be through a step-by-step process, as Rahman rightly points out. We know intuitively that  $1+1=2$ ; similarly it can be said that we intuitively know, given the two premises mentioned above, that Socrates is a mortal. So we can consider *ḥads* intuition.

This said, *ḥads* does not commit Avicenna to the intuitionism of rationalism, for *ḥads* does not provide *new* knowledge in a syllogism. At first glance, scholars of Avicenna may object to this point and argue that *ḥads* provides substantive knowledge. The problem with this objection is that the substantive knowledge *ḥads* provides is not new, that is, the knowledge is already contained in the premises which are based on sense experience. So, although it seems, *prima facie*, that *ḥads* provides substantive knowledge, because the knowledge that is not new cannot be regarded as substantive, we must conclude that *ḥads* does not provide substantive knowledge. Reconsider the syllogism about Socrates above. What *ḥads* leads to is merely deducing from two premises put into a logical relationship with each other via a middle term. In other words, if you only have the two premises of a syllogism and not the conclusion, you already have all the knowledge, implicit though some of it may be, because you do not add any new sense experience to the premises while deducing from them. What you do is merely drawing the conclusion in a technical way. The function of *ḥads* then is to help you find the middle term so that you can realize that the two statements may be put together in a way that the implicit knowledge within the premises is made explicit. So, *ḥads* may seem to be a confusing term but, epistemologically speaking, it is no more than merely being able to deduce quickly from two premises in a syllogism. As it does not amount to a claim to acquire substantive knowledge directly through reason, it does not commit Avicenna to intuitionism.

However, it is premature to assume that there is no other way in which Avicenna uses intuition just because Avicenna does not employ the term *ḥads* in other ways. We should look at the reference (denotation) of Avicenna's ideas, not at the literal sense of the words he uses, as we learn from Frege's distinction between sense and reference (1892, trans. Black 1980). The 'sense' of *ḥads* is intuition, and there is no other word in Avicenna that *literally means* intuition, but there may be other words or ideas which *refer to* intuition (i.e., knowing something non-inferential, directly through reason). So we should investigate whether anything other than *ḥads* in Avicenna *refers to* intuition. And there is indeed at least one important way in which Avicenna utilizes intuition and this time to acquire substantive entities about the external world.

#### 4.2. Avicenna's 'Substantive' Use of Intuition

In his *The Healing: Logic, Introduction (Al-Shifā': al-Manṭiq, al-Madkhal)*, Avicenna (1952, I.3, p. 17–8) argues that we acquire knowledge in two stages: first, the acquisition of the intelligible forms and/or the formation of our concepts (*taṣawwur*), and second, assenting to the truth of a proposition composed of forms and/or concepts (*taṣdīq*). He maintains that the first stage leads to definitions, the second to demonstrations. In the first stage, Avicenna argues that our concepts are formed by our acquisition of the intelligible forms, mentioning two ways of acquiring them. On the one hand, he contends that the intelligible forms are acquired through a process of abstraction (*tajrīd*) involving external and internal senses. On the other, he holds that we get these forms via emanation (*fayḍ*) from the Active Intellect during the contact (*ittisāl*) with it. This at least *prima facie* inconsistency between the two ways of acquiring the intelligible forms created the initial debate as to whether Avicenna uses emanation or abstraction in his epistemology.

At the beginning of this study, we briefly saw that the problem triggering the debate has been over time transformed into a question of whether Avicenna's epistemology is rationalist or empirical. While generations of historians from Gilson to Kaukua argued for a rationalist interpretation relying on their claim that Avicenna only or predominately uses emanation in his epistemology, historians from Gutas to Alpina argued for an empiricist interpretation based on their claim that in his epistemology Avicenna uses only or predominately abstraction.<sup>10</sup> However, the problem of whether Avicenna uses abstraction or emanation in his epistemology, as I shall explain below, has to do *solely* with the intuitionism of rationalism. This means that the debate has often been reduced mistakenly to one basic thesis of rationalism, namely intuitionism. So I examine almost the whole debate in the scholarship only in this section on intuitionism.

Now, first of all, in this debate, there seems to be confusion created by Avicenna's continuation of the late antique syncretization of two explanations incongruous with each other (i.e., the Aristotelian abstraction, *aphairesis*, and the Neoplatonic emanation or 'outflowing', *aporrhoê*), as to how humans acquire the intelligible forms.<sup>11</sup> If we take the emanationist interpretation of Avicenna's epistemology,<sup>12</sup> then his epistemology can by no means be empirical, as all historians are agreed. Therefore the emanationists have so far called it rationalistic. However, I think that it is more accurate to call it 'supra-rational' because emanation comes not from human reason but from an external source. Avicenna's emanationism

seems in close vicinity of divine revelationism because both views hold that man acquires knowledge from an outer source, that is, through the Active Intellect or an intermediary angel respectively. Depending on this outer source of knowledge involved, Kaukua (2020, 215) argued that Avicenna’s emanationism commits him to, in Kaukua’s words, an “outsourced rationalism,” that is, “a peculiar kind of rationalism in which the ultimate source of knowledge is an intellect, albeit one extraneous to the human mind.” However, the basic theses of rationalism involve the epistemic contributions of *human* reason, not *any* reason (i.e., the reason of God, the Active Intellect, or other rational beings). Hence, Avicenna’s emanationism lies outside of the empiricism–rationalism spectrum and should be regarded as supra-rational.

On the other hand, if we take the abstractionist interpretation which is—to my knowledge—unanimously considered empirical by Avicenna scholars engaging in the debate, I contend that the method of abstraction as employed by Avicenna commits to the intuitionism of rationalism because the intellection or grasping of the intelligible forms or essences at the *final step* of the abstractive process *refers to* intuition as knowing something directly through (human) reason. This can be noticed based on the epistemological account of intuition I provide in this paper.

For the ‘intellection’ of essences, Avicenna uses a diachronically loose cluster of locutions such as *‘aql* (intellection) (2011, 148.i, p. 134; 1956, I.5, p. 69 and III.5, p. 222–3), *fikr* *‘aqlī* (intellective thinking) (2011, 148.v, p. 135), and *akhdh* (grasping) (1981, VII, p. 38; 1982, II.6, p. 205).<sup>13</sup> In *Deliverance: Logic*, for instance, he (2011, 148.v, p. 135) writes, “Intellective thinking (*fikr* *‘aqlī*) acquires universals insofar as they are abstracted. Sensation, imagination, and memory acquire particulars.”<sup>14</sup> In *The Healing: Logic, Demonstration (Al-Shifā’ : al-Mantiq, al-Burhān)* (henceforth: *Burhān*), he (1956, IV.10, p. 331) writes, “And after this conceptualization, we intellect their essences (*na ‘qiluhā bi-l-dhāt*). And this conceptualization is one of their principles [conceptual principles, i.e., essences].” On the following page, he adds that *‘aql* (intellective reason) divests the attachments of a man, leaving only the abstract man (*al-insān al-mujarrad*) which does not differ in Socrates or Plato.<sup>15</sup> He goes on to argue manifestly that neither sense (*al-ḥiss*) nor estimation (*al-wahm*) can do this act of intellection. This is in line with the fact that Avicenna (1956, IV.2–3, p. 270–87) argued earlier in *Burhān* that a definition is not acquired by division or demonstration.<sup>16</sup> So he effectively rules out other options before ultimately coming to his argument that definition is carried out through intellection at the *final step* of the abstractive process.<sup>17</sup> Scholars have often assumed that this *‘aql* is merely intellect taken as a whole (i.e., simply reason), but this is an erroneous rendering based on, again, the *literal sense* of *‘aql*, since Avicenna distinguishes between the functions or powers of the intellect in that passage and the following one, and he clearly uses the word *‘aql* there to *refer to* the intuiting part of the rational soul. All this is conspicuous in a critical passage from Avicenna’s *Deliverance: Psychology (Al-Najāt: al-Nafs)*:

It is probable that all perception is but the *grasping* (*akhdh*) by the percipient subject *of the form of the perceived object* in some manner. . . . But the faculty in which the fixed forms are either the forms of existents which are not at all



material and do not occur in matter by accident [such as in mathematics or metaphysics], or the forms of material existents though *purified in all respects from material attachments* (‘*alā’iq al-mādda*) [such as in physics]—*such a faculty obviously perceives the forms by grasping them as completely abstracted from matter* (*akhdhan mujarradan ‘an al-mādda*) in all respects. This is evident in the case of existents which are in themselves free from matter [mathematicals and metaphysicals]. As to those existents which are present in matter, either because their existence is material or because they are by accident material [bodies and their physical accidents like color, odor, etc.], *this faculty completely abstracts them both from matter and from their material attachments* in every respect and *grasps them in pure abstraction* (*akhdhan mujarradan*). . . . *In this way the knowledge of the various judging faculties—sensation, representation, estimation, and intellect* (‘*aql*)—*is distinguished.*” (emphases added) (1982, II.6, p. 207, 209–10; trans. Rahman 1981, VI, p. 38, 40)

Scholars of Avicenna have well noted that Avicenna’s concepts of ‘*aql*, *fikr* ‘*aqlī*, and *akhdh* correspond to Aristotle’s *noûs* and Plato’s *noêsis* (as opposed to *aisthesis*),<sup>18</sup> but they have rendered these terms as ‘intellect’, ‘mind’, ‘intellection’, ‘grasping’, ‘abstraction’, etc., as we saw above, which do not *refer to* the meaning that Avicenna intends to convey. What Avicenna’s concepts mentioned *refer to* is ‘intuition’.<sup>19</sup> Hence, Avicenna’s (i) act of intellection, (ii) the rational capacity of intellection, and (iii) the content of intellection should be understood as (i) ‘intuiting’, (ii) ‘intuitive reason’ or ‘intuition’, and (iii) ‘intuition’ or the ‘intuited’ respectively. To my knowledge, this *substantive* role that intuition plays in Avicenna’s philosophy, a role of paramount importance, is gone unnoticed in contemporary scholarship, except in one study by Lenn Goodman (1992, ch. 3, esp. 146). A major consequence of this neglect in the scholarship is that scholars of Avicenna tend to speak, somewhat anachronistically, more of ‘concept acquisition’, which is merely a psychological act, whereas the ‘intuition of essences’ has strong metaphysical overtones and cannot be reduced to mere ‘acquisition of concepts’. Avicenna conflates the psychological act with the metaphysical (intuitionist) claim, but the distinction between the two is of vital epistemological and thus metaphysical import. Thus I believe that harnessing the resources of analytic philosophy is key to a fruitful settling of the debate as I hope to have presented in this paper.<sup>20</sup>

So, in the end, even though one prefers the abstractionist interpretation of Avicenna’s account of the acquisition of the intelligible forms rather than the emanationist interpretation, one must conclude that a rationalist element looms in his first epistemological stage. And I think Avicenna resorted to both emanationism (a supra-rational way of knowing) and abstractionism (a rationalist way of knowing) in his first epistemological stage.

An objection might be raised here. Two texts of Avicenna seem to compromise his theory of the intuition of forms, *al-Shifā’ : al-Nafs* (1959, III.8, p. 160–1) and *al-Ta’līqāt* (2013, 62, p. 71). There Avicenna appears to hesitate about or even reject his standard theory of intuition of forms and concede to skepticism about the human capacity to know essences. However, Kaukua

(2020, 227–33) convincingly responded to this objection, arguing that the epistemological consequences of *al-Shifā'*: *al-Nafs* III.8 remain uncharted by Avicenna and that *al-Ta'liqāt* 62 presents only a unique piece of evidence for Avicenna's alleged skepticism about the human capacity to intuit essences, as opposed to Avicenna's widely-recognized epistemological optimism about this capacity in numerous other places. Indeed, this rational capacity is arguably the backbone of Avicenna's philosophical system, which cannot be plausibly called into question in light of the entirety of his corpus. Moreover, the textual history of *al-Ta'liqāt* remains uncertain (Kaukua 2020, 231). Given all this, it is safe to accept that these two texts do not cancel Avicenna's standard theory of the intuition of forms.

Two notes are in order before concluding. First, there is another way in which Avicenna uses intuition to acquire substantive knowledge, namely the intuition of the necessary or certain first principles of demonstrations, but I hope to take it up in the sequel to this paper, as it better fits the third basic thesis of rationalism (i.e., the necessary/certain knowledge thesis). Second, by committing to intuitionism, Avicenna commits to apriorism as well, since apriorism comprehends intuitionism and innatism, as I explain in Section 2. Apart from the traditional peripatetic intuition of the intelligible forms, there seems to be another way in which Avicenna commits to apriorism, namely, where he argues that the floating or flying man in his eponymous thought experiment knows the existence of his rational soul. This self-awareness of the floating man seems to be *a priori* knowledge, but it is not clear at first glance whether this apriorism involves intuition or innate knowledge. Showing that it is *a priori* and also investigating whether it is intuitive or innate requires a study of its own, as scholars of Avicenna widely disagree on this issue too. Therefore I evade this particular debate here for space reasons.

## 5. Conclusion

I attempted in this paper to settle a protracted debate in the study of the history of medieval Islamic philosophy about whether Avicenna's epistemology is rationalist or empirical. To accomplish this, I articulated rationalism and empiricism by fleshing out their criteria as three basic theses of rationalism and one single basic thesis of empiricism. Then, according to the first basic thesis of rationalism (i.e., intuitionism), I investigated Avicenna's views in his major works related to epistemology. Consequently, I found Avicenna committed to intuitionism on at least one important point, showing that he uses intuition not only where he invokes the empty concept of *ḥads* but also in his claim about the intuition of essences. I explained that this claim is sufficient to make Avicenna a rationalist and also more consequential than Avicenna's notion of *ḥads* because, unlike *ḥads*, intuiting essences provide substantive knowledge.

It should be noted that the findings of this study show that Avicenna is a rationalist only in areas where he employs intuitionism. The intuition of the intelligible forms imbues almost the entirety of Avicenna's philosophical system, notably his natural philosophy and metaphysics. Thus Avicenna's natural philosophy (including scientific methodology) and metaphysics commit to the intuitionism of rationalism. In this paper, however, I have not examined his medicine which remains understudied and may turn out to be empirical upon scrutiny.

Avicenna's adoption of intuitionism had not only far-reaching ramifications in his own philosophical system but also long-term and significant consequences on the history of Islamic philosophy in general. In the past few decades, scholars have largely come to notice that the post-classical Islamic philosophy, which came to be widely called 'philosophical theology' by contemporary scholars, was heavily influenced by Avicenna; it embraced what one might call, in light of the findings of the present study, the 'intuitionist rationalism' of Avicenna which has largely persisted till this day, surviving in major strands of contemporary Islamic thought. In a sequel to this study, I will investigate Avicenna's epistemology according to the other two basic theses of rationalism I mentioned earlier in this work, presenting further evidence that his epistemology is rationalist, not empirical.

*Vanderbilt University*

---

## NOTES

<sup>1</sup> This paper draws on my Ph.D. dissertation on Avicenna's epistemology that I completed at Ankara University under the supervision of Prof. Hasan Yücel Başdemir to whom I thank for his generous support and patient revision of my work. I am grateful to the dissertation committee members, Prof. Celal Türer (Ankara), for his generous support and invaluable comments, and Profs. M. Cüneyt Kaya (Istanbul), İbrahim Aslan (Ankara), and Hasan Akkanat (Ankara Hacı Bayram Veli) for their helpful comments and suggestions. I presented earlier versions of this paper at the Inaugural Conference of the Society for Renaissance and Medieval Philosophy held at the University of Notre Dame in South Bend, Indiana (Oct. 3–6, 2021) and at the Milwaukee Aquinas and the 'Arabs' International Working Group 9<sup>th</sup> Online Graduate Conference (Mar. 19–20, 2021). I thank the organizers of these conferences and the participants for their helpful comments. I owe special thanks to Prof. Lenn E. Goodman (Vanderbilt) for his unstinting support and invaluable suggestions on earlier drafts of this paper. I am also indebted to Profs. Richard C. Taylor (Marquette), Dimitri Gutas (Yale), Dag Nikolaus Hasse (Würzburg), Jari Kaukua (Jyväskylä), Andreas Lammer (Trier), Fedor Benevich (Edinburgh), Tommaso Alpina (LMU Munich), Amos Bertolacci (Pisa), Ahmad Atif Ahmad (UCSB), Laura Hassan (Oxford), and Dr. Yusuf Daşdemir (Jyväskylä) for their helpful comments and suggestions on earlier drafts of this paper.

<sup>2</sup> Whether Aristotle had a theory of abstraction is still a matter of controversy, but I think that *De an.* III.4, *Posterior Analytics* I.18, and *Metaphysics* XI.3–4, where Aristotle mentions abstraction (*apheiresis*), largely show that he effectively uses abstraction, though he does not articulate it as a theory (and though it is admittedly odd that he does not mention abstraction in such places as *Apo* II.19 and *Met.* I.1 where he explains how humans acquire universals). For more on abstraction in Aristotle, see Bäck (2014) and cf. with Cleary (1985). Taylor (2016, 273) argues that it was Alexander of Aphrodisias (late 2nd and early 3rd century CE) who first explicitly articulated the doctrine of intellectual abstraction of the intelligible forms, but Taylor admits that the doctrine exists implicitly in Aristotle's texts. Geach (1957, 18–38) argued that abstractionism is dead.

<sup>3</sup> See esp. Gilson (1930, 65): "toute abstraction est une émanation."

<sup>4</sup> This two-part arrangement is necessitated by the detailed nature of the debate in question, but each paper stands on its own feet, as each investigates distinct parts of Avicenna's rationalism.

<sup>5</sup> It is odd that, except Cottingham's and Markie and Folescu's explorations, there is no other sustained and systematic exploration of the *constituents* of rationalism in the contemporary scholarship that I am aware of, though there are many defenses of empiricism (notably by Ayer, Reichenbach, Carnap, John Anderson, Patrick Suppes, and Bas C. van Fraassen) and rationalism (notably by Kripke, Bonjour, Philip Kitcher, George Bealer, Peter Carruthers, and Michael Huemer).

<sup>6</sup> Some scholars (e.g., Gregory W. Dawes [2017]) have seen certain historical phases of the development of empiricism as different versions of empiricism. The history of epistemology shows us that empiricism has gradually taken shape throughout this history in parallel to the process of the empiricization of knowledge. Therefore it is arguable that these phases should rather be seen as phases of rationalism being relinquished, not of empiricism taking shape, since rationalism has multiple basic theses whereas empiricism has one single basic thesis. So it would

---

be more accurate to model the epistemological transformation in history as a spectrum going from strong rationalism to moderate rationalism to weak rationalism and ultimately to empiricism, rather than the other way around.

<sup>7</sup> What philosophers typically claim to intuit is the truth of propositions, but it is crucial to note that they sometimes claim to intuit other epistemic entities too. For instance, BonJour (2001, 677–8) uses ‘intuition’ to mean the grasping of certain perceptual sensations. Therefore the word ‘intuition’ can be used for concepts, epistemic properties, and modal properties claimed to be intuited too. For a treatment of intuition in contemporary philosophy, see Pust (2019).

<sup>8</sup> For a few examples, see Gutas (2007), Ivry (2012, § 3), Avicenna (1981, VI, p. 35–7), cf. its Arabic original: Ibn Sīnā (1982, II.6, p. 205–6), Avicenna (2011, 148.iii, p. 134), Avicenna (unpublished trans. Marmura and Black, I.4.1 and V.6.25) (I thank Prof. Black for permitting me to use and cite this draft.). Gutas (2014, xii–xiii) stated in the second edition of his 1988 monograph on Avicenna that he will no longer render *ḥads* as ‘intuition’ since it had misled scholars into thinking that Avicenna accepted “something mystical or extra rational.” Gutas therefore declared that he will henceforth render *ḥads* as “guessing correctly.” However, most if not all other scholars still translate and construe *ḥads* as intuition, with which I agree for the reason I shall explain shortly.

<sup>9</sup> Scholars have often, and rightly, rendered Aristotle’s *agchinoia* in *APo* I.34 as “quick wit”; for instance, see Ross’s translation in Aristotle (1957, 609): “Quick wit (*agchinoia*) is a power of hitting the middle term in an imperceptible time; e.g., if one sees that the moon always has its bright side towards the sun, and quickly grasps the reason, viz. that it gets its light from the sun.” Barnes renders it as “acumen” in Aristotle (2002, I.34, p. 47, p. 77 [in “Synopsis”]: “Acumen—the art of hitting on a middle term (89b10)”), p. 202 [“Commentary”], p. 281 and p. 285 [“Glossaries”]. Sorabji (2010, 4) renders *agchinoia* as “being good at spotting” and likens it to the usage of *noēsai* in the example of glass in *APo* I.31. Aristotle uses *agchinoia* in *Rhetoric* I.6, 1362b15 as well, and Kennedy renders it as “quick wittedness” in Aristotle (2007, 63). A *Begriffsgeschichte* of *ḥads* is a desideratum to understand how this word became established in medieval Islamic philosophy and Avicenna’s corpus as the *exclusive* rendition of Aristotle’s *agchinoia*, while it was not used to render *noûs* which, as I will argue shortly, Aristotle used in some places of his corpus as *referring to* ‘intuition’ as knowing something directly through reason. Most likely, it must be Ḥunayn ibn Iṣḥāq (d. 873) who first used *ḥads* to render Aristotle’s *agchinoia* in his translations from Greek to Arabic.

<sup>10</sup> An exhaustive survey of numerous contributions by the two opposing camps is beyond the scope and purpose of this study and can be found in Taylor (2019, 59–72) and Alpina (2014, 135–42). For major contributions from the emanationist camp, see Gilson (1930), Rahman (1958, 15), Davidson (1992), D’Ancona (2008), Black (2014), and Kaukua (2020, 215–40). For major contributions from the abstractionist camp, see Gutas (2014, 179–201; 2007), Hasse (2007; 2013), McGinnis (2007; 2008), and Alpina (2014), though McGinnis’s and Alpina’s works accept the role of the Active Intellect in Avicenna’s epistemology to a greater extent. More recently, there is a shift toward reconciliation between the two camps, which is discussed in Ogden (2020).

<sup>11</sup> For more on this syncretization, see Wisnovsky (2005, 99ff).

<sup>12</sup> This interpretation has clear textual basis in Avicenna (1959, V.5, p. 234–6 and 2014, III.13, p. 104–5), among others.

<sup>13</sup> This is similar to Avicenna’s use of loose terminology to render Aristotle’s ‘form’ or ‘essence’, employing locutions such as *ḥaqīqa* (reality or truth), *dhāt* (self), *ṣūra* (picture), *ṭabī‘a* (nature), and *shay‘iyya* (thingness). For Avicenna’s usage of these terms, see Wisnovsky (2000). Aristotle rendered ‘essence’ in his corpus by using multiple locutions too, such as *to ti esti* (the what it is), *to einai* (the being), *ousia* (being), *hoper esti* (precisely what something is), *to ti ên einai* (the what it was to be), many of which he coined.

<sup>14</sup> Avicenna (2014, VII.2, p. 166) therefore argues that “If the rational soul acquires the fixed habit of conjunction with the agent intellect, the loss of the [bodily] instruments will not harm it [the rational soul’s intellection],” as intellection is carried out by the intellect.

<sup>15</sup> For the same usage of the ‘intellective reason’, see also Avicenna (2005, III.8.6, p. 109), but N.B., Michael Marmura, the translator of this work, rendered ‘intellective reason (*‘aql*)’ as ‘mind’ in the translation of the page referred. This argument of Avicenna corresponds in Aristotle to *APo* II.19, 99b35–100b5 where Aristotle does not yet use *noûs* (intellective reason) but will do in the next passage where he explains how the first principles of demonstrations are intellected. So both Aristotle and Avicenna argue that the first principles (principles of conceptualization, i.e., essences, and principles of demonstrations, i.e., premises, alike) are intellected, but in this paper, I deal only with the intellection of essences. The details of the divesting process is explicated in Avicenna (1959, IV.1–4, p. 163–201; trans. Marmura and Black, IV.1–4, p. 92–112) and Avicenna (1981, VI–VII, p. 37–40), where Avicenna articulates our cognitive powers. Also see Ibn Sīnā (1906, V–VI, p. 43–67).

<sup>16</sup> There is an English translation of this chapter in Strobino (2010, 149–62). With this argument, Avicenna follows *APo* II.4–7 where Aristotle discusses and ultimately rejects several ways of defining something, namely, division (*diareseis*), demonstration (*apodeixis*), induction (*epagôgê*), and perception (*aisthesis*).

---

<sup>17</sup> Avicenna indeed tells in the very beginning of *Burhān* (1956, I.1, p. 51) that conceptualization (*taṣawwur*) is obtained through definition (*ḥadd*) (and demonstration, *taṣdīq*, through syllogism.)

<sup>18</sup> For a brief philosophical treatment of *noûs* and *noêsis* in Greek philosophy, see Peters (1967, 121–6 and 132–9 respectively).

<sup>19</sup> The case is similar with the scholars of Aristotle, who use various terms for the intellection (*noûs*) of essences in *De an.* III.4, 429a23, though this intellection refers to intuition as well. Bolton (2014, 40) for instance, sees it as “our general faculty of reasoning.” Likewise, Smith renders it as “thought” in Aristotle (1995). Gendlin (2012) leaves *noûs* untranslated. As ancient Greeks often lacked sophisticated philosophical terminology to differentiate mental functions and states, and therefore used one term for multiple of them, Aristotle might have used *noûs* to mean simply ‘reason’ in other places, but the usage of *noûs* to mean ‘a special part of the soul’ that intellects essences does not refer to simply ‘reason’; it refers to intuition. (Aristotle speaks of the functions of the soul as if they are parts of the soul.) That I contend that Aristotle’s intellection of essences refers to intuition does not mean that I reject that Aristotle argues in *APo* II.19, against Plato’s theory of recollection, that the concepts are acquired through induction. Rather, I argue that Aristotle believes that the essences are intuited at the final step of this induction which he sees as a process. The equivalent in Plato of Aristotle’s usage of *noûs* with this meaning (i.e., as referring to ‘intuition’) is found in *Republic* 510, 534, which is *noêsis*.

<sup>20</sup> For further details on Avicenna’s intuitionism, see pp. 197–237 of my Ph.D. dissertation (2021).



## REFERENCES

### *Avicenna's works*

- Avicenna. 1959. Avicenna's De Anima (Arabic text): Being the Psychological Part of Kitāb al-Shifā'. Edited by Fazlur Rahman. London: Oxford University Press.
- . 1981. Avicenna's Psychology: An English Translation of Kitāb al-Najāt, Book II, Chapter VI with Historico–Philosophical Notes and Textual Improvements on the Cairo Edition. Translated by Fazlur Rahman. Westport, Connecticut: Hyperion Press.
- . 2005. The Metaphysics of The Healing (al-Shifā': al-Ilāhiyyāt). Translated by Michael E. Marmura. Provo, Utah: Brigham Young University Press.
- . 2011. Avicenna's Deliverance: Logic. Translated by Asad Q. Ahmed. Karachi: Oxford University Press.
- . 2014. Ibn Sina's Remarks and Admonitions: Physics and Metaphysics. Translated by Shams Inati. New York: Columbia University Press.
- . The Psychology of The Healing. Unpublished translation by Michael E. Marmura and Deborah L. Black.
- Ibn Sīnā. 1906. A Compendium on the Soul. Translated by Edward Abbott van Dyck. Verona, Italy.
- Ibn Sīnā. 1952. Al-Shifā': al-Mantiq, al-Madkhal. Edited by Georges C. Qanawātī, Maḥmūd al-Khuḍayrī, Fuād al-Ihwānī. Cairo: al-Maṭba'a al-amīriyya.
- . 1956. Al-Shifā': al-Mantiq, al-Burhān. Edited by Abū-l-'Alā 'Afīfī. Cairo: al-Maṭba'a al-amīriyya.
- . 1982. Kitāb al-najāt fī l-hikma al-mantiqiyya wa-l-tabī'iyya wa-l-ilāhiyya. Edited by Mājid Fakhrī. Beirut: Dār al-āfāq al-jadīda.
- . 2013. Al-Ta'liqāt. Edited by Seyyed Hossein Mousavian. Tehran: Iranian Institute of Philosophy.

### *Other Sources*

- Alpina, Tommaso. 2014. "Intellectual Knowledge, Active Intellect and Intellectual Memory in Avicenna's *Kitāb al-Nafs* and Its Aristotelian Background." Documenti e studi sulla tradizione filosofica medievale 25: 131–83.
- Aristotle. 1957. Aristotle's Prior and Posterior Analytics. Translated and commented by W. D. Ross. Oxford: Clarendon Press.
- . 1995. On the Soul. Translated by J. A. Smith. In Aristotle, The Complete Works of Aristotle, Volume 1, edited by Jonathan Barnes, 641–92. Princeton, NJ: Princeton University Press.

- . 2007. On Rhetoric. Translated by George A. Kennedy. Oxford and New York: Oxford University Press.
- Bäck, Allan. 2014. Aristotle's Theory of Abstraction. Dordrecht: Springer.
- Black, Deborah L. 2014. "How Do We Acquire Concepts? Avicenna on Abstraction and Emanation." In Debates in Medieval Philosophy: Essential Readings and Contemporary Responses, edited by Jeffrey Hause, 126–44. New York and London: Routledge.
- Bolton, Robert. 2014. "Intuition in Aristotle." In Rational Intuition: Philosophical Roots, Scientific Investigations, edited by Lisa M. Osbeck and Barbara S. Held, 39–54. New York: Cambridge University Press.
- BonJour, Laurence. 2001. "Précis of In Defense of Pure Reason" and "Replies." Philosophy and Phenomenological Research 63, no. 3: 625–31, 673–98.
- Cleary, John J. 1985. "On the Terminology of 'Abstraction' in Aristotle." Phronesis 30, no. 1: 13–45.
- Cottingham, John. 1997. Rationalism. Bristol: Thoemmes Press.
- D'Ancona, Cristina. 2008. "Degrees of Abstraction in Avicenna. How to Combine Aristotle's *De Anima* and the *Enneads*." In Theories of Perception in Medieval and Early Modern Philosophy, edited by Simo Knuutila and Pekka Kärkkäinen, 47–72. Dordrecht: Springer.
- Davidson, Herbert A. 1992. Alfarabi, Avicenna, and Averroes, on Intellect: Their Cosmologies, Theories of the Active Intellect, and Theories of Human Intellect. New York: Oxford University Press.
- Dawes, Gregory W. 2017. "Ancient and Medieval Empiricism." In The Stanford Encyclopedia of Philosophy, Winter 2017, edited by Edward N. Zalta. <https://plato.stanford.edu/archives/win2017/entries/empiricism-ancient-medieval>.
- Gilson, Étienne. 1930. "Les sources gréco-arabes de l'augustinisme avicennisant." Archives d'Histoire Doctrinale et Littéraire du Moyen Age 5: 1–107.
- Frege, Gottlob. 1892. "Über Sinn und Bedeutung." In Zeitschrift für Philosophie und philosophische Kritik 100: 25–50. Translated as "On Sense and Reference" by Max Black in Translations from the Philosophical Writings of Gottlob Frege, edited and translated by Peter Geach and Max Black, 56–78. Oxford: Blackwell, 1980.
- Geach, Peter. 1957. Mental Acts: Their Content and Their Objects. London: Routledge and Kegan Paul.
- Gendlin, Eugene T. 2012. Line by Line Commentary on Aristotle's De Anima Book III. Spring Valley, NY: Focusing Institute.
- Goodman, Lenn E. 1992. Avicenna. London and New York: Routledge.



- Gutas, Dimitri. 2007. "Intuition and Thinking: The Evolving Structure of Avicenna's Epistemology." In Aspects of Avicenna, edited by Robert Wisnovsky, 1–38. Princeton, NJ: Markus Wiener Publishers.
- . 2012. "The Empiricism of Avicenna." Oriens 40: 391–436.
- . 2014. Avicenna and the Aristotelian Tradition: Introduction to Reading Avicenna's Philosophical Works, 2nd revised and enlarged edition. Leiden: Brill.
- Hasse, Dag Nikolaus. 2007. "Avicenna on Abstraction." In Aspects of Avicenna, edited by Robert Wisnovsky, 39–72. Princeton, NJ: Markus Wiener Publishers.
- . 2013. "Avicenna's Epistemological Optimism." In Interpreting Avicenna, edited by Peter Adamson, 109–19. New York, NY: Cambridge University Press.
- Ivry, Alfred. 2012. "Arabic and Islamic Psychology and Philosophy of Mind." In The Stanford Encyclopedia of Philosophy, Summer 2012, edited by Edward N. Zalta. <https://plato.stanford.edu/archives/sum2012/entries/arabic-islamic-mind>.
- Kaukua, Jari. 2020. "Avicenna's Outsourced Rationalism." Journal of the History of Philosophy 58, no. 2: 215–40.
- Kurun, Ismail. 2021. "İslam Felsefe Tarihinin Eleştirel Yeniden-İnşası: İbn Sina Epistemolojisi Örneği [The Critical Reconstruction of the History of Islamic Philosophy: The Case of Avicenna's Epistemology]." Ph.D. dissertation, Ankara University.
- Markie, Peter and M. Folescu. 2021. "Rationalism vs. Empiricism." In The Stanford Encyclopedia of Philosophy, Fall 2021, edited by Edward N. Zalta. <https://plato.stanford.edu/archives/fall2021/entries/rationalism-empiricism/>.
- McGinnis, Jon. 2007. "Making Abstraction Less Abstract: The Logical, Psychological, and Metaphysical Dimensions of Avicenna's Theory of Abstraction." Proceedings of the American Catholic Philosophical Association 80: 169–83.
- . 2008. "Avicenna's Naturalized Epistemology and Scientific Method." In The Unity of Science in the Arabic Tradition: Science, Logic, Epistemology and their Interactions, edited by Shahid Rahman, Tony Street, Hassan Tahiri, 129–52. Dordrecht: Springer.
- Ogden, Stephen R. 2020. "Avicenna's Emanated Abstraction." Philosophers' Imprint 20, no. 10: 1–26.
- Peters, Francis E. 1967. Greek Philosophical Terms: A Historical Lexicon. New York, NY: New York University Press.
- Pust, Joel. 2019. "Intuition." In The Stanford Encyclopedia of Philosophy, Summer 2019, edited by Edward N. Zalta. <https://plato.stanford.edu/archives/sum2019/entries/intuition>.
- Rahman, Fazlur. 1958. Prophecy in Islam: Philosophy and Orthodoxy. Chicago and London: Allen and Unwin.

- . 1981. “Commentary: Historical and Explanatory Notes.” In *Avicenna, Avicenna’s Psychology: An English Translation of Kitāb al-Najāt, Book II, Chapter VI with Historico–Philosophical Notes and Textual Improvements on the Cairo Edition*. Westport, Connecticut: Hyperion Press.
- Shaw, Gregory. 2017. “Iamblichus and the Talisman of Gnosis.” *Gnosis: Journal of Gnostic Studies* 2: 235–45.
- Sorabji, Richard. 2010. “The Ancient Commentators on Concept Formation.” In *Interpreting Aristotle’s Posterior Analytics in Late Antiquity and Beyond*, edited by Frans A. J. de Haas, Mariska Leunissen, Marije Martijn, 3–26. Leiden and Boston: Brill.
- Strobino, Riccardo. 2010. “Avicenna on the Indemonstrability of Definition.” *Documenti e studi sulla tradizione filosofica medievale* 21: 113–63.
- Taylor, Richard C. 2016. “The Epistemology of Abstraction.” In *The Routledge Companion to Islamic Philosophy*, edited by Richard C. Taylor and Luis Xavier López-Farjeat, 273–84. London and New York: Routledge.
- . 2019. “Avicenna and the Issue of Intellectual Abstraction of Intelligibles.” In *Philosophy of Mind in the Early and High Middle Ages: The History the Philosophy of Mind*, Volume 2, edited by Margaret Cameron, 56–82. London and New York: Routledge.
- Wisnovsky, Robert. 2000. “Notes on Avicenna’s Concept of Thingness (Šay’iyya).” *Arabic Sciences and Philosophy* 10: 181–221.
- . 2005. “Avicenna and the Avicennian Tradition.” In *The Cambridge Companion to Arabic Philosophy*, edited by Peter Adamson and Richard C. Taylor, 92–136. Cambridge, UK: Cambridge University Press.