

Article

Saadya on Necessary Knowledge

Xiuyuan Dong ^{1,2,*} and Abd-Salam Memet-Ali ²¹ Center for Judaic and Inter-Religious Studies, Shandong University, Jinan 250100, China² Institute of Humanities and Arts, Shandong University, Qingdao 266237, China; abdsalm23@outlook.com

* Correspondence: dongxiuyuan@sdu.edu.cn

Abstract: Most Muslim and Jewish Mutakallimūn accepted the definition of necessary knowledge as opposed to inferential knowledge, with one remarkable exception, namely, Saadya's problematic use of this term. He characterized some type of mediate knowledge as "necessary knowledge" and accordingly introduced a second-order necessary knowledge that is necessarily concomitant of the original one. This move may have marked a synthesis of the two main epistemological trends (classical intellectualism and analytical empiricism) at the time.

Keywords: Saadya; Jewish Kalām; epistemology; necessary knowledge

The distinction between necessary and acquired knowledge is the foundation of Kalām epistemology. The Jewish Mutakallimūn shared this framework with their Muslim peers, especially the Mu'tazilites. However, Saadya makes one remarkable exception, using the term "necessary knowledge" (*al-'ilm al-ḍarūrī*) in a problematic way: he seems to confuse the cognitive necessity of Kalām with the logical necessity of Falsafa. In this study, we will show that Saadya's account of necessary knowledge may be best understood in the vein of early and classical Kalām and that he in fact extended the Kalām epistemology by interpreting deduction in terms of cognitive necessity.

1. The Epistemological Background: Necessary Knowledge in Kalām

To begin with, we shall briefly look at some main points of Kalām's epistemology, both Islamic and Jewish, offering a reference of the standard use of "necessary knowledge" by mainstream Mutakallimūn.

The first point is the definition of knowledge:

Knowledge is the notion that entails a sense of certainty [in] the soul (*al-ma'nā alladhī yaqtaḍī sukūn al-nafs*) of the knower at what he has obtained. ('Abd al-Jabbār 1960–1965, p. 16)¹

The tenth to eleventh century Mu'tazilite master 'Abd al-Jabbār's definition represents the most widely accepted notion among the Mutakallimūn on the nature of knowledge. He highlights the most distinguishing characteristic of knowledge: certainty or repose (*sukūn*) that the convictions concerning some objects bring into the soul. It is remarkable that this certainty the Mutakallimūn are concerned with is a kind of subjective certainty, that is the knower's assurance or confidence of the truth of her belief, but not objective certainty, which concerns the logical (or causal) relation of the propositional contents (or objects) of knowledge.²

The first known Jewish Mutakallim al-Muqammaṣ (the ninth century) defines knowledge as "comprehending the reality of perceived objects with neither doubt nor uncertainty (*taḥqīq al-ashyā' al-madrūka bi-lā shakk wa-lā zann*) and establishing their cognizance by way



Academic Editors: Yuehua Chen, Xiaochao Wang and Ishraq Ali

Received: 27 February 2025

Revised: 24 March 2025

Accepted: 26 March 2025

Published: 1 April 2025

Citation: Dong, Xiuyuan, and Abd-Salam Memet-Ali. 2025. Saadya on Necessary Knowledge. *Religions* 16: 453. <https://doi.org/10.3390/rel16040453>

Copyright: © 2025 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

of noncontradictory definition and description".³ Later, he characterizes the truth (*al-ḥaqq*) as "a proposition with which the speaker's soul is content (*taskun*), knowing that what he said is indeed as he said it and what he described is indeed how he described it".⁴ Thus, for al-Muqammaṣ, the mental quality that makes an accurate description of the object knowledge or truth is certainty (or negatively, removal of uncertainty).

The classical Jewish Mutakallimūn, like Saadya and al-Qirḳisānī, did not give such definitions of knowledge. But in their discussion of relevant issues, they presupposed the generally accepted notion of Kalām:

And now that we have finished expounding, as much as we felt it desirable, the matter of resolving uncertainties and doubts, it behooves us to explain what is meant by conviction (*i'tiqād*). We say that it is a notion that arises in the soul in regard to the actual state of anything that is known. When the cream of speculation emerges, when it is embraced and enfolded by the intellects and, through them acquired and digested by the souls, then the person becomes convinced of the truth of the notion he has thus acquired. He then deposits it in his soul for a future occasion or for future occasions, in accordance with the statement of Scripture: "Wise men lay up knowledge" [Prov. 10:14]. (Saadya 1880, p. 11; 1970, pp. 11–12)⁵

[In order to establish knowledge of tradition:] therefore did He render the human mind susceptible to the acceptance of authenticated tradition and the human soul capable of finding repose (*li-'l-sukūn*) therein, so that His Scriptures and traditions might be acknowledged as true. (Saadya, L, 126; K, 130; R, 155–156)

The words *gladden the heart* (Ps. 19:8) convey that the heart is at rest (*yaskun ilayhi al-qalb*) on account of the truth of premises and conclusions. The words *enlightening the eyes* (ibid.) allude to the light emanating from the word (*kalām*) and the removal of ambiguity therefrom. (Al-Qirḳisānī 1918, pp. 17, 42)

Both Saadya and al-Qirḳisānī take knowledge as a conviction that brings certainty regarding the reality of its object and remove doubt and ambiguity from the mind.

Certainty is the differentia of knowledge in both Islamic and Jewish Kalām. Therefore, the key question of their epistemology is where this certainty comes from. The answer lies in the sources of knowledge or its ways of occurrence:

There are only two types of knowledge: One occurs by virtue of us in the ways mentioned above (speculation and inference), and is accordingly called acquired knowledge (*'ilm muktasab*). By nature, it can be denied by its knower from his soul with uncertainty. . . . The other is created by God in us, and accordingly called necessary knowledge (*'ilm ḍarūrī*). Its definition is that which is impossible to be denied by its knower with uncertainty. (Ibn Mattawayh 2009, pp. 601–2)

There are two kinds of knowledge [belonging to human beings and other animals]: the necessary and the acquired. Their difference lies in the fact that for the acquired knowledge, the knower has power (*qudra*) to know and infer it; for the necessary knowledge, neither his inference nor his power is involved in its occurrence. (Al-Baghdādī 1928, p. 8)

Thus, the Mutakallimūn divide knowledge into two types. One is acquired knowledge, which is obtained at our initiative through speculation and inference and achieves some degree of certainty but is always open to doubt. The other is necessary knowledge, which is imposed on us and occurs without conscious effort or choice on our part. In contrast to acquired knowledge, necessary knowledge is undoubted and accepted by all the sane people; in other words, its certainty is unshakable. In the classification of knowledge, the

Jewish Mutakallimūn were basically in line with their Muslim peers,⁶ except Saadya. We will return to this point later.

According to the mainstream Kalām, necessary knowledge usually includes: sense perception; inner perception, which is self-consciousness of inner experience; perfection of intellect, which is the awareness of self-evident axioms in logic and morality; and reliable report, which is the path of revealed knowledge.⁷

‘Abd al-Jabbār also provides another taxonomy of necessary knowledge, in which he divides it into the direct and indirect ones. The direct ones include inner perception and perfection of intellect, while the indirect comprise of sense perception and knowledge that occurs through what resembles a means (like the knowledge of the state through the knowledge of the essence).⁸

Regarding the use of the concept “necessary knowledge” among Jewish Mutakallimūn, we find the earliest case in al-Muqammaṣ. He classifies direct perception of external or internal objects as necessary knowledge:

The claim of one who says that the world does not exist is unacceptable because of the self-imposing (*iḍtirār*) realization of the existence of the world and also because of the self-imposing (*iḍtirār*) realization of our own existence. (*Al-Muqammaṣ* 2016, pp. 48–49)

All this (knowledge of the affliction of one’s own body or removing of this affliction) is naturally understood by everyone; people know it intuitively (*iḍtirār*) and are not troubled by any doubts about it. (*Al-Muqammaṣ* 2016, pp. 58–59)

Obviously al-Muqammaṣ understands the term “necessary” (*iḍtirār*) in the sense of “compelling” and “primitive”. Al-Qirqisānī, Saadya’s younger contemporary, also juxtaposes necessary knowledge with sense perception, as opposed to speculation and inference (*Al-Qirqisānī* 1939–1943, p. 67).

As for the discussion of necessary knowledge in Jewish Kalām, it is mainly concerned with two issues. One is the question of if we can know God in a necessary way. Most Jewish Mutakallimūn agreed with the Mu’tazila that the knowledge of God is acquired through speculation, and thus not necessary knowledge.⁹ The other issue is if the reliable traditions (especially that of Moses) can be established as necessary knowledge. Some Jewish theologians, such as Yūsuf al-Baṣīr (d. 1040), argued with Muslim and pagan opponents for the necessity of the testimony of Moses’ prophecy and miracles by the Jewish community (See *Sklare* 2021, pp. 117, 125). It should be noted that during the inter-religious polemic on the validity of traditions, the universality of necessary knowledge seems to be compromised: it may be a knowledge only potentially known to every person, the occurrence of which depends on specific circumstances.

2. Saadya’s Necessary Knowledge

In the *Amānāt*, Saadya enumerates four kinds of knowledge:

We declare that there are three [such] bases. The first is the knowledge of observation; the second, the knowledge of the intellect, and the third, the knowledge that necessity compels to (*ma dafa’at al-darūra illayhi*). . . As for ourselves, the community of monotheists, we accept these three bases of knowledge to be true. To them, however, we add a fourth base, which we have derived by means of the [other] three, and which has thus become for us a further principle. That is the validity of authentic tradition. (L, 12–14; K, 14–15; R, 16–18)

It is difficult to categorize the third one in the Kalāmīc dichotomy of knowledge, though Saadya repeatedly called it “necessary knowledge”:

Knowledge of necessities (*'ilm al-ḍarūriyāt*) is that which, if not accepted as true, would compel his denial of a sensible or intelligible. Since, however, he cannot very well negate either of these two, the fact forces him (*al-'amr yaḍṭirruhu*) to regard the notion as being correct. Thus, we are forced (*nuḍṭarr*) to affirm, although we have never seen it, that man possesses a soul, in order not to deny its manifest activity. [We are] also [forced to affirm], although we have never seen it, that every soul is endowed with intellect, in order not to deny the latter's manifest activity. (L, 13; K, 14; R, 16–17)

Besides that it confirms for us the validity of necessary knowledge (*al-'ilm al-ḍarūrī*), [that is to say] that whatever leads to the rejection of the sensible or intelligible is false. (L, 15; K, 16; R, 19)

As for the knowledges of necessities (*al-ḍarūriyāt min al-'ulūm*), when our senses perceive and verify something, and when the conviction of that thing can be held in our souls only by virtue of the simultaneous conviction of other things, we must be convinced of all these things, be they few or many in number, since the sense percept in question arises only by means of them (*yaqūm... illā bihā*). (L, 16; K, 18; R, 21)

Against the background of Kalām terminology (both Islamic and Jewish), Saadya's account of necessary knowledge is peculiar because he includes in this category some mediate knowledge that should be seen by most Mutakallimūn as inference and thus as acquired or non-necessary knowledge. And his characterization of this necessary knowledge, "*ma dafa'at al-darūra illayhi*" ("what necessity compels to"), reminds us of Aristotle's idiom "follow by necessity" (*lazim... min al-iḍtirār*) in his definition of syllogism and his interpretation of necessity in terms of logical entailment in demonstration.¹⁰ Wolfson (1942, p. 233) and Efros (1942, p. 149) identify Saadya's necessary knowledge as Aristotle's demonstration or scientific knowledge. Does Saadya try to replace or correct the Kalām epistemology with a Peripatetic one?

To answer this question, we should make sure first that Saadya is acquainted with the use of the term necessity from both sides. In two other places of the *Amānāt*, Saadya uses the term *ḍarūr* in the sense of perception:

If, again, we assumed that these attributes appertained to them (spiritual atoms) after they had attained the composite status, then that part of these beings which is with us would necessarily (*bi-'l-ḍarūra*) be within our reach. (L, 45; K, 48; R, 54)

But suppose we note that the [pretended] prophet pays no attention to us but makes us witness the miracles and marvels so that we see them performe (*ḍarūra*). What shall we say to him in that case? (L, 133; K, 136; R, 164)

Efros found in Saadya's commentaries to the Hebrew Bible one case where he uses *ḍarūr* in the way of Kalām and several other places where he uses the term *iktisāb* ("to acquire") in the sense of inference (Efros 1942, p. 134, n.1; p. 150, n. 36). Here we just quote the passage in his commentary to the Book of Job, where both the terms "necessary" and "acquire" appear:

The wisdom (for intellect to infer the Creator's attributes from His creatures) *needs time to acquire (iktisāb)* [Kafih/Goodman: for it does not develop automatically (*bi-ḍarūra*) in a person but must be acquired]. Then it says that the wisdom in this state is as valid as knowledge of senses and necessity (*'ilm al-ḥawās wa-'l-ḍarūrāt*), deducing for us that the Creator his wisdom with him. (Saadya 1899, p. 40; 1973, p. 86; 1988, p. 247)

Now we know for certain that Saadya is aware of the Kalām distinction between necessary and acquired knowledge. As for the paradigm of demonstrative necessity, he has some knowledge of the Organon: he refers to the ten categories and to *Isagoge*, though never mentions Aristotle's name (See [Stroumsa 2002](#), pp. 27–28). If his agenda is to introduce the Peripatetic logic, it would be odd to notice that he mentioned no formal requirement of definition and syllogism in the discussion of necessary knowledge. He did not even use the terms inference/*istidlāl* or demonstration/*burhān* in characterizing the necessary knowledge. He does use the term *burhān* elsewhere, but not in the sense of Aristotelian demonstration, for example, he talks about “the miraculous proofs” (*barāhīn al-'ayāt*) as opposed to “the intellectual proofs” (*al-barāhīn al-'aqliyya*).¹¹ Furthermore, Saadya insists the priority of perception over all the other knowledge:

By rejecting the first source (perception), they have automatically rejected the second (intellection) and the third (“necessary knowledge”), since the latter two are based upon the first. (L, 13; K, 14; R, 17)¹²

This is a radical empiricist stance, which is typical in Kalām but hardly compatible with any classical understanding of scientific knowledge (neither Platonic nor Aristotelian). In light of all this, Haggai Ben-Shammai suggests that the necessity in Saadya's definition of necessary knowledge is not logical necessity but refers to the immediate knowledge, namely perception and intuition ([Ben-Shammai 1977](#), I, p. 86, n. 177; [2005](#), p. 112, n.74). I agree with Ben-Shammai in locating Saadya back in the vein of Mu'tazilite Kalām to understand his theory of knowledge, which is also the approach shared by [Vajda \(1948\)](#) and [Hegedus \(2013\)](#). We shall see if we can interpret Saadya's necessary knowledge in the Kalām sense of necessity, namely, the compulsiveness in the occurrence of knowledge as a mental state other than the logical necessity in the propositional contents (or the causality between the objects) of knowledge. Following this approach, the definition *ma dafa'at al-ḍarūra illayhi* should be interpreted as what perception and intellectual intuition compel to. These two are the necessary knowledge in the original sense and that which they force us to accept is a second-order necessary knowledge. The latter is what Saadya means by *al-'ilm al-ḍarūrī*. But a further question is how perception and intuition drive us to this knowledge, in other words, where does this compelling force come from?

The branch “that which occurs through what resembles a means” (*mā yaḥṣul 'ammā yajrī majrā al-ḥarīq*) in 'Abd al-Jabbār's taxonomy of necessary knowledge may shed some light on the mechanism of the second-order necessary knowledge's occurrence:

That which occurs in us through a means is the knowledge of the perceptible things, and perception is the means to it. That which occurs through what resembles a means is like the knowledge of the state (*hāl*) together with the knowledge of the essence (*dhāt*), and the knowledge of the essence is a root (*aṣl*) of the knowledge of the state and resembles a means to the knowledge of the latter. The difference between what occurs in us through a means and what resembles a means is that, it is possible for the former to persist without a means; yet, this is not the case in the latter. Therefore, God may create in us a knowledge of perceptible things without perception, but may not create a knowledge of the state without a knowledge of the essence; for the knowledge of essence is a root for that of the state, and resembles a means to the latter. ('[Abd al-Jabbār 1996](#), p. 50; [Ibrahim 2013b](#), p. 112)

The example he gives is the knowledge of the state of a thing and knowledge of its essence. The knowledge of the essence is a necessary condition to know the state. Therefore, the knowledge of the essence is like a means to that of the state, in other words, the former is the root of the latter.

This kind of necessary knowledge is related to the co-presence of two knowledges that have an essential connection: without the root (knowledge of the essence), the branch (knowledge of the state) cannot occur. It causes difficulties in interpretation among modern scholars. ‘Uthman points out that this sub-division of necessary knowledge is problematic, for if it is about the state of ourselves, it will fall in the category of direct knowledge, and if it is about the state of objects other than us, it is not necessary but inferential.¹³ M. R. Ibrahim also notes that this kind of knowledge could be included in the direct knowledge, as a case of intellectual axioms, and suggests that ‘Abd al-Jabbār specifies a separate sub-division for it in order to establish the hierarchical order of knowledge (such as the priority of reason over tradition) (Ibrahim 2013b, pp. 112–14).

In fact, this knowledge is not about the state or the essence, but about their relation: neither of these two but their connection has to be necessarily known, more precisely, the epistemological priority of root or the dependence of the branch on the root is necessary. Given that without root there is no branch, the fact that we attain the branch entails that we have grasped the root in advance or simultaneously and that the occurrence of the branch presupposes the presence of the root in our mind. We find such a case in ‘Abd al-Jabbār’s discussion of perception and the concomitant knowledge of existence:

In perception, we know that the perceived thing exists, even though perception does not relate [directly] to this attribute. However, since the attribute which is perceived cannot be realized without the existence of this thing, we must know that it exists. This knowledge is like the root of the knowledge of the specific essential attribute. Therefore, as we perceive [the attribute] which cannot appear in other things, we know the perceived thing, even if we do not know any [other] state of it, like [in the case of perception of] sound. (*Mughnī*, XII, 61–62)

During the perception, what we directly perceive is the attribute of a thing, but along with this direct perception, we know the thing exists. These two knowledges are necessarily concomitant with each other. In fact, the knowledge of the existence of the perceived thing is not inferred from the knowledge of the perceived attribute, because firstly, they are simultaneously present; secondly, according to the epistemological order mentioned above (the former is the root of the latter and the knowledge of the state presupposes the knowledge of the essence), such an inference will be a circular argument.

Now we have an essential connection between knowledges: without the root, the branch cannot occur; if the branch is present, the root must be co-present (or re-present). In term of Kalām, we can say the branch necessarily draws us to the root. It is interesting to note that some Mutakallimūn, mostly Ash‘arites, made use of this necessary co-presence to prove the existence or attribute of God from his creations. Davison has summarized these arguments: they are either from the generation of the world to its generator, or from the world’s equal possibility of existing and not existing to its particularizer (Davidson 1987, pp. 154–61). As al-Ghazālī rightly put, none of these is in reality a proof but just an explanation of the terms “generator” (*ḥādīth*) and “cause” (*sabab*). If their meaning is made clear, the mind will necessarily (*muḍṭarr*) accept the truth of the principle that every generated thing has a cause.¹⁴ Similarly, his master, Juwaynī states that the observation of the perfect order of the world will forcefully (*yudṭarr*) lead to the knowledge of God’s wisdom and power.¹⁵

Now we have seen the mainstream Kalām allows some essential connection between knowledges. We shall see if this works for Saadya’s second-order necessary knowledge. In the meantime, we should take into account that all the sources mentioned above, including ‘Abd al-Jabbār, Juwaynī, and al-Ghazālī, are later than Saadya and also that Saadya does not stick to any specific doctrine of Kalām, but is much more flexible or eclectic than the Muslim and Karaite Mutakallimūn.

It seems that Saadya's definition of necessary knowledge as the concomitant of the perception or intuition basically conforms to the root-branch or essence-state connection. They share the same structure of necessary condition. In two places, he used plural form of knowledge (*'ulūm*) and necessity (*darūriyyāt*), which implies that the necessary knowledge in question is about the relation of knowledges (L, 13, 16; K, 14, 18; R, 16–17, 21). The examples he illustrates for the single-concomitant cases (L, 13, 17; K, 14, 18; R, 17, 21), such as voice-person and soul/intellect activities, can be included in the category of connection between knowledges of essence and of state, except the fire-smoke case, but smoke may be seen as a state of fire. Besides, this can also explain the fact that Saadya does not refer to inference or proof in defining the second-order necessary knowledge, because he has the co-presence of two knowledges in mind and this kind of necessary knowledge is not bound to be inferential. His real divergency from the mainstream Kalām manifests in the expansion of the number of the knowledges involved:

Now these [necessary postulates] may be one, or they may be two or three or four or more than that. . . As an illustration of a single [concomitant] let it be supposed that we see smoke. . . We must assume the existence of the fire because of the existence of the smoke since the one can be complete (*yatimm*) only by means of the other. Likewise if we hear the voice of a human being from behind a wall, we must assume the existence of that human being. . . As an example, again, of more than one [concomitant phenomenon] that must be postulated, the following might be cited.] When, for instance, we see food go down in bulk in the belly of an animate being, and its refuse come out from it, then, unless we assume [that] four operations [were involved in the process], what has been perceived by our senses could not have been complete (*yatimm*). . . Sometimes, too, our conviction of the reality of what we observe becomes complete (*yatimm*) only by the invention of a science (*ṣinā'a*) that verifies it for us. We may even be compelled to resort to many such sciences. (L, 16–17; K, 18; R, 21–22)

Now all this is demonstrable only by means of the art of geometry, which shows us how one figure is subsumed under others through construction, after we have known the simples from which they are composed. . . We must, therefore, acknowledge all these sciences as being correct, since it is only by means of them that our conviction of the variation of the moon's course by natural law can be complete (*yatimm*). (L, 18; K, 20; R, 23)

For both the Mu'tazilite and Ash'arite, the necessary connection usually consists in only two knowledges. This is to guarantee their co-presence in mind. When Saadya extends this relation to multiple pieces of knowledge, he sacrifices the immediacy of necessary knowledge. Those knowledges from the second onward are not present at the moment when the perception occurs. And we notice that Saadya repeatedly uses the term *yatimm* ("to be complete"), which implies that the necessary knowledges are meant to be a whole within which every part entails each other. But for any specific human knower, he or she may only attain part of the whole structure at a time, while the other parts are necessarily knowable in potential. Following the proper procedure of analysis, we may actualize this chain piece by piece. In view of this, we can understand in what sense Saadya claims all the knowledge lies potentially in the intellect:

The audible things are discovered by the organ of hearing, and man testifies (*shahid*): this is what I have heard and none other. The same is true of the other organs of sensation. Similarly there is in the intellect a knowing force which, when confronted by intellectual matters, verifies them, so that the person becomes convinced that they are undoubtedly the concepts. According to this example all

knowledge lies concealed in the intellect (*maknūn fī al-'aql*); and the purpose of learning and inference (*iktisāb*) is only to discover it after its awakening, so that when it stands before the mind, the mind testifies concerning it that it is the truth. Therefore, this book with its speculation is intended to remind of (*yunabbihū*) what is in the intellect and to awaken (*yuyāqqizū*) what used to be neglected. (Saadya 1894, p. 9; Efros 1942, p. 147)

According to Saadya, all the sensual and intellectual knowledges have been witnessed and preserved in the intellect, but some of them are in a hidden or neglected state. With regard to this “concealed” knowledge, the role of inference and speculation is just to remind the intellect and draw its attention to the object (or the proper aspect of the object), so that the truth concerning this object becomes directly accessible to the intellect. Similarly, we find the Bahshamite school also acknowledge that people can be unaware of their own state of knowledge and that when someone neglects or even denies his own necessary knowledge, we cannot prove it to him in an inferential way but should remind (*yunabbih*) him of it by revealing his self-contradiction.¹⁶ Saadya seems to apply this principle of the reminder (*tanbīh*) to the second-order necessary knowledge. And he has good reason to do so: since even the simple sensation or intellectual intuition can be non-transparent to the mind, all the more so for the knowledge of their essential connection.

In addition to the role of reminder, Saadya also uses speculation as means of testing the allegations of necessary knowledge:

If we seek to establish the truth of [a conviction] in the domain of necessary knowledge (*al-'ilm al-darūrī*), we must guard it against the above-mentioned five types of vitiating factors: [a] that there is no other [means than the theory in question] of sustaining the truth of what is perceived; nor [b] any other [method] of upholding what is known [by intellect]; [c] it must not invalidate any other truth; nor [d] must one part of it contradict another; let alone [e] that [a theory] be adopted that is worse than the one that has been rejected.

[All] these [precautions are to be taken] in addition to exercising, in the determination of the sensible and the intelligible, such expert care as we have outlined before. Add to these the quality of perseverance until the art of speculation (*ṣinā' al-naẓar*) has been completed, and we have a total of seven points that must be observed to make possible for us the accurate emergence of the truth (*kharajat lanā al-ḥaqīqa ṣaḥīḥatan*). (L, 20; K, 22; R, 25–26)¹⁷

Under these conditions, speculation shows the deductive closure of necessary knowledge, and any conviction failing to satisfy this criterion is excluded. It should be noted that inference can serve as a tool to test or disclose necessary knowledge but not a mechanism to produce it, for the latter, be it actual or potential, has already existed in the mind. And it does not constitute a defining characteristic of the second-order necessary knowledges, because some of them (such as most single-concomitant cases) need no reminder to trigger, and even for the multi-concomitant cases, once actualized, the necessary connection of the knowledges becomes self-evident and compulsive to us, without resorting to reasoning anymore.¹⁸

At the end of his discussion about the sources of knowledge in the introduction of *KAI*, Saadya points to a parallel between necessary knowledge and reliable tradition:

Should, therefore, someone come to us with an allegation in the realm of necessary knowledge, we would test his thesis by means of these seven [criteria]. If, upon being rubbed by their touchstone and weighed by their balance, it turns out to be correct as well as acceptable, we shall make use of it. Similarly also must

we proceed with the subject matters of authentic tradition—I mean the books of prophecy. (L, 20; K, 22–23; R, 26)

As long as these two are both knowledge through means—other knowledge(s) or the testimony of others—their validity is not that manifest and thus needs to go through a series of examinations. Besides, there is a deeper affinity in their realization, as Saadya points out in the next section:

In this way, then—may God be merciful unto thee—do we conduct our speculation and inquiry, to the end that we may expound concretely (*nukhrij ilā fi'l*) what our Master has imparted unto us by means of knowledge and necessity (*bi-'l-'ilm wa-bi-'l-ḍarūra*).¹⁹ With this thesis, however, there is intimately bound up a point that we cannot avoid. It consists of the question: “. . . Where was the wisdom in God’s transmitting them by means of prophecy and supporting them by means of visible miraculous proofs (*barāhīn al-'ayāt al-mar'iyya*), rather than the intellectual ones (*al-barāhīn al-'aqliyya*)?” (L, 24; K, 27; R, 31)

Here the “knowledge and necessity” refers to the revealed knowledge supported by the compelling visibly miraculous proofs. This religious knowledge can be actualized into intellectual knowledge through speculating and inquiring its rational reasons. Similarly, in the case of necessary knowledge, through speculation and inference, the “hidden” essential connection between knowledges emerges in our mind.

3. Contextual and Philosophical Explanations

Regarding the concept of necessary knowledge, Saadya’s primary source is undoubtedly the Islamic Kalām. His characterization of the first two kinds of knowledge conforms to the Mu‘tazilites’ basic understanding of necessary knowledge, while his original contribution is to develop the third kind of knowledge, namely a second-order necessary knowledge. He makes use of two Kalām concepts, employing the co-present connection between knowledges as a link to transmit the property of necessity (a combination of forcefulness, undoubtedness, and universal acceptance) from the necessary antecedent to the consequent and applying the non-transparency of knowledge to the inapparent second-order necessary knowledge. Therefore, his “reform” agenda is not to replace the Kalām epistemology with the classical concept of scientific knowledge, but to construe logical necessity in term of cognitive necessity as necessarily known in potential and thus integrate deductive knowledge into the Kalām category of necessary knowledge.²⁰ By doing so, he establishes necessary knowledge as a deductively closed set that can be extended as long as “a science” or “many sciences”.

His train of thought may be sketched as follows:

1. S necessarily knows that *p*;
2. *p* deductively entails *q*, meaning that the knowledge of *q* is contained in the knowledge of *p*;
3. So, S necessarily knows that *q* (though this knowledge could possibly be non-transparent to S).

In this vein, deductive knowledge is essentially a chain of necessary knowledge, not only the starting point but also each step (if sliced thinly enough) of which is epistemically compulsive and intuitive. As for the non-deductive inferences, they are always open to alternatives, and accordingly to doubt.

As mentioned above, Saadya’s discussion of necessary knowledge does not betray any commitment to the Aristotelian demonstrative model. From the scientific examples Saadya gives to illustrate the multi-concomitant cases, we can see clearly that his paradigm of science is geometry, astronomy, and medicine; in other words, his concept of science

is a pre-Aristotelian-turn one.²¹ Saadya's first example (four digestive force-operations) derives from Galen's *On the Natural Faculties* (III. viii) (Galen 1916). And we find in the Arabic Galen corpus the use of term "necessary knowledge":

Only those who have necessary knowledge (*al-'ilm al-idṭirārī al-wājib*) may confirm that every [individual of the species] has the substance which the paradigm has. . . As for the connection based on the course of habit, there is no certain, necessary and demonstrative knowledge (*'ilm yaqīn al-wājib idtirārī burhānī*) in it at all. (Kraus 1935, pp. 417–18)²²

The point of this argument is that, if man is compounded from a single element, the syllogism necessarily (*ḍarūratan*) implies that he cannot feel pain, since there would be nothing that would make him feel pain. . . The basis of this syllogism is sensation and is a matter of consensus. Its premises follow from that basis by means of demonstration (*burhān*), and its conclusion follows from it by demonstration. (*On the Elements*, Walbridge 2014, p. 151)

The Arabic translators and critics of Galen called demonstrative knowledge "necessary knowledge" and juxtaposed two terms denoting necessity (*idṭirārī* and *wājib*). Compared to the Aristotelian version, Galen's demonstration is less neat in form but more empirical and applicable to the particulars, taking after the model of geometry and focusing on the essential connection between the perceived facts.²³ Saadya may have come across such cases of necessary knowledge in the Galen corpus or other related scientific works, seeing in it a point of contact to bridge Kalām's cognitive necessity (*ḍarūra*) and the Hellenistic logical necessity (*wujūb*).

It should be noted that Saadya's conception of necessary knowledge is, in general, similar to the Stoic understanding of demonstration, which, as one type of sign, is an argument based on the kataleptic impression of the individuals and revealing the conclusion contained potentially in the premises.²⁴ Given that there is no evidence of Saadya's access to the Stoic logic and epistemology,²⁵ it may be seen as a recurrence of the Hellenistic intellectual movement under similar circumstances in the Medieval Islamic world.

From a broader perspective, we may find Saadya has more fellow travelers. 'Abd Jabbār reported there is a group called *Aṣḥāb al-Ma'ārif* ("the ones who have knowledge"), represented by the ninth century Mu'tazilite al-Jāḥiẓ, who claim that it is possible to have necessary knowledge of God in this world ('Abd al-Jabbār 1996, p. 52). And there is a sub-group in these people of knowledge:

There is disagreement among the ones who have knowledge: some of them said that all the knowledge [of God] is through revelation (*ilhām*) and did not make speculation an obligation; others said that all the knowledge occurs through a natural substratum (*ṭab' al-maḥall*) when speculating, and then obligated [people] to speculate on Him, but not in the same way we obligated. ('Abd al-Jabbār 1996, p. 67)

The latter acknowledged the obligation of speculating on God and placed a special faculty within human nature—which is usually called *fitra* by other authors (Abrahamov 1993, pp. 26–27)—to guarantee the theological speculation to produce necessary knowledge.

Qirqisānī also reported that there are some defenders of rational speculation who claim the truth of inference can be known necessarily:

Some responders [to the objection against speculation and inference] replied that they know that the judgment of something is necessarily the same with that of its like, and claimed that they know the truth of the inference necessarily. (*K. Anwār*, II 6.6)

Here, Qirqisānī is not necessarily referring to Saadya. But the latter does share the goal with this cross-denominational movement, that is, to establish the theological speculation as necessary knowledge. The epistemology of Kalām posed a problem of the certainty of religious knowledge. According to its distinction of necessary and acquired knowledge, the existence of God (as the imperceptible cause of the world) can only be known by means of inference, and accordingly, the knowledge regarding God is not necessary. The certainty of acquired knowledge is weaker than that of necessary knowledge. Speculation and inference are always accompanied by the possibility of being doubted. The Mu'tazilites postponed this difficulty to the afterlife and affirmed that God can be seen in the paradise ('Abd al-Jabbār 1996, pp. 52, 57). The Ash'arites admitted the possibility that God can transform acquired knowledge into a necessary one, just like He created in Adam necessary knowledge about the names of all the living things (Al-Baghdādī 1928, p. 15; Abrahamov 1993, p. 22). Some theologians, like the *Aṣḥāb al-Ma'ārif* mentioned above, tried to specify how to obtain the object of speculative knowledge in a necessary way, either through revelation or through a special faculty ('Abd al-Jabbār 1996, pp. 52, 67). This mystic approach was developed later by Sufi-inclined thinkers such as Avicenna, al-Ghazālī, and Judah Halevi. They placed a super-sense above the ordinary human rational faculty, by means of which the mystical practitioner can directly witness the divine being (Lobel 2000, pp. 89–102).

However, Saadya proposed another approach to addressing this theo-epistemological problem. He did not add any extraordinary cognitive faculty but chose to reformulate the ordinary ones. He interpreted the logical entailment as a kind of essential connection between direct perceptions, which has compelling power in potential over our mind. By investigation and inference, one would be in a position to disclose some hidden part of this connection and release its epistemic force, proceeding along the chain of necessary knowledge gradually from the concrete to the subtle up to the last terminal, namely the knowledge of God, which he described as “the first, the premise and the noblest” among the rational knowledge (*'ilm al-tamyīz*).²⁶

In regard to reconciling the Kalām theory of cognition with the Greek logic and sciences, Saadya is neither alone nor the first one: this trend can be traced back to as early as al-Muqammaṣ and also be found in al-Qirqisānī. In fact, it is a characteristic of Jewish Kalām. The early Jewish Mutakallimūn seem to be more committed to Greek sources than their contemporary Muslim peers, which may be due to their association with the Syrian Christian scholars (Al-Muqammaṣ 2016, Stroumsa's Introduction, pp. xv–xxiv). The confluence of Kalām and philosophy happened later in the Islamic thought, in the eleventh to twelfth century, promoted by Avicenna, al-Juwaynī, and Fakhr al-Dīn al-Rāzī.²⁷

The result of this confluence in epistemology is the synthesis of intellectualism from classical Greek philosophy and analytical empiricism represented by Islamic Kalām.²⁸ Saadya offers an original agenda for this common cause: it brings intelligible causality into the realm of necessary knowledges characterized by the mainstream Kalām as atomistic mental states allowing only minimal co-present connections, and expands the latter into a network of scientific knowledge extending in both synchronic and diachronic ways. It is remarkable that his scientific paradigm (a set of apodeictic knowledge of the sensible particulars, modeled after geometry, astronomy, and medicine) belongs to the practicing scientists represented by the physician Galen rather than the speculative philosophers, which distinguishes Saadya's agenda from most of his fellow travelers in later generations who more or less accepted the Aristotelian model of science, though they shared the same motivation to establish theology in the most certain form of knowledge, in other words, to invent a “science of [the Revealed] Law in its true sense” (Maimonides 1963, p. 5). In this

respect, Fakhr al-Dīn al-Rāzī, who developed an alternative to Aristotelian science based on the epistemological principles of Kalām, seems to have followed in Saadya’s footsteps.²⁹

Author Contributions: Conceptualization, X.D.; investigation, X.D. and A.-S.M.-A.; writing—original draft, X.D. All authors have read and agreed to the published version of the manuscript.

Funding: The research was funded by the Major Project of the Key Research Base for Humanities and Social Sciences of the Ministry of Education (No. 16JJD730001).

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Data are contained within the article.

Conflicts of Interest: The authors declare no conflict of interest.

Notes

¹ For the English translations, see (Peters 1976, pp. 47–48); Richard Frank (1971, p. 6).

² As for the distinction between subjective and objective certainty in medieval philosophy, see Robert Pasnau (2017, p. 29, n. 6).

³ See (Al-Muqammaṣ 2016, pp. 36–37). In the context, al-Muqammaṣ provides two definitions and this is the first one. The second one defines knowledge as the soul’s apprehension of the form of the sensibles and the intelligibles, whose hylemorphic terminology, as well as dichotomy of sensible and intelligible, has an Aristotelian overtone.

⁴ See Ibid., pp. 42–43. The concept of truth here requires more than the normal condition of correspondence between belief and fact, and seems closer to the concept of knowledge. It is noteworthy that al-Muqammaṣ follows the correspondence theory in his own definition of truth provided earlier (ibid., pp. 40–41).

⁵ For the English translation, see (trans. S. Rosenblatt) (Saadya 1948, p. 14). Hereafter, the two editions of *K. al-Amānāt wa-l-’Itiqādāt* (KAI, Saadya 1880, 1970) are referred to respectively as L and K and Rosenblatt’s translation (Saadya 1948) as R. The English translation has been slightly modified.

⁶ See, e.g., (Al-Qirqisānī 1939–1943, pp. 64–71); Aaron ben Elijah, *Ets Hayyim*, Chapter Eighty, in Daniel Frank (1991, pp. 18–20).

⁷ In early Kalām the status of the last one is controversial. There were some theologians, like the Baghdadi school of the Mu’tazilites, who did not accept tradition or testimony as necessary knowledge, see (Al-Baghdādī 1928, p. 12; Sklare 2021, p. 121).

⁸ *Sharḥ*, 50–51; *Mughnī*, 12: 56–66.

⁹ See, e.g., (Yūsuf al-Baṣīr 1985), *Muhtawī*, 2.640.

¹⁰ *Prior Analytics*, 24b18–20; *Topica*, 100a25–27; *Metaphysics*, 1015b7–9. For the medieval Arabic translation of these texts, see A. R. Badawi, *Manṭiq Arsīṭū*, Beirut: Dar al-qalam, 1980, pp. 142, 489; Averroes, *Tafsir ma ba’d at-tabi’a*, ed. Maurice Bouyges, Beirut: Imprimerie Catholique, 1938, pp. 516–17.

¹¹ KAI, L, 24; K, 27; R, 31.

¹² In his commentary to *Sefer Yetzirah*, Saadya also emphasizes sense perception’s status as primary source of truth with no doubt and base the proof of the Creator on this truth, see (Saadya 1891, p. 38).

¹³ ‘Uthman, *Naẓariyyat al-Taklīf*, 1971, p. 60.

¹⁴ See (Al-Ghazālī 1962), *I’tiqād*, pp. 25–26. For English translation, see Yaqub 2013, pp. 28–29.

¹⁵ See (Juwaynī 1950), *Irshād*, 1950, p. 61. For English translation, see Walker 2000, p. 36.

¹⁶ ‘Abd al-Jabbār, *Mughnī*, vol. 12, pp. 37, 42, 45, 71; for a discussion of the issue, see (Benevich 2022b, pp.12–15, 26–28). From the fact that ‘Abd al-Jabbār ascribes this position to Abū Hāshim and defends it as a reply to al-Jāhīz, it is most likely to be an early Mu’tazilite stance.

¹⁷ Related to this, when elaborating these conditions, Saadya uses the terms “analogy” (*qiyās*), “proof” (*dalīl*), and “inference” (*istidlāl*) to describe the process of approaching and weighing the alleged necessary knowledge (L, 19; K, 21; R, 24).

¹⁸ A similar view can be found in Ibn Taymiyya, *Dar’ ta’ārūḍ al-‘aql wa-l-naql, aw Muwāfaqat ṣaḥīḥ al-manqūl li-ṣarīḥ al-ma’qūl*. ed. Muḥammad Rashād Sālim. Riyadh: Dār al-Kunūz al-Adabiyya, 1979, 9:28–29.

¹⁹ I follow Landauer’s reading, while Kafih includes the phrase “bi-’l-ḍarūra” in the next sentence, which already has an adverbial “lā budd”. Putting a double emphasis on such a rhetorical question would be quite superfluous.

²⁰ Interestingly enough, al-Fārābī’s account of certitude (*yaqīn*) is like a reverse image of this agenda: he insists that only demonstration and intellectual intuition can bring about absolute or necessary certitude, while admitting lesser degrees of certitude (such as non-necessary and accidental certitude) to accommodate immediate sensible observations and testimonies as inferior forms of knowledge, in which the Kalām concept of certainty (*sukūn al-nafs*) is listed as “the most remote assent from certitude”, see (Black 2006, pp. 11–45).

- 21 For the “Aristotelian turn” in the Arabic reception of Hellenic sciences advocated by al-Fārābī, see (Koetschet 2022, pp. 275–76, 287). Another remarkable pre-Aristotelian-turn figure is al-Kindī who takes mathematics represented by Euclid and Ptolemy as the scientific ideal, see (Adamson 2007, pp. 33–38; Gutas 1998, p. 120; Pasnau 2017, pp. 27, 177).
- 22 Koetschet identified this text as part of al-Rāzī’s *Doubts on Galen* (Koetschet 2022, pp. 282–85). The terms “necessary knowledge” appears in a context where the author elaborates three sorts of sign-inference from the manifest to the hidden (respectively based on paradigm, habit and trace-endeixis), contrasts the first two sorts with necessary knowledge, and seems to imply that the trace indicating to the nature of things has a close relation with demonstration. As for the Stoic origin of sign-inference in Kalām logic and its relation to Saadya, see (Van Ess 1970, pp. 26–50; Ben-Shammai 2005, p. 112, n.74).
- 23 See (Morison 2008, pp. 66–115); Hankinson, “Epistemology”, *ibid.*, pp. 165–78.
- 24 For demonstration in Stoicism, see *The Hellenistic Philosophers*, ed. and trans. A. A. Long and D. N. Sedley, Cambridge: Cambridge University Press, 1987, vol.1, pp. 213–14; R. J. Hankinson, “Stoic Epistemology”, in *The Cambridge Companion to the Stoics*, ed. Brad Inwood, Cambridge: Cambridge University Press, 2003, pp. 78–79, Susanne Bobzien, “Logic”, *ibid.*, pp. 112–13; Ludwig Edelstein, *The Meaning of Stoicism*, London: Oxford University Press, 1966, pp. 27–28.
- 25 Efros traced Saadya’s epistemology back to Stoicism, though offering no proof but similarities (1942, pp. 136–37, 139–42, 157–58). Josef van Ess suggested the Stoic logic elements in Kalām may have originated from Greco-Roman rhetoric tradition in Late Antique and Early Islam, but also admitted that the legacy of the latter is a synthesis of different schools and thus not distinctly Stoic (Van Ess 1970, pp. 32–33).
- 26 See (Saadya 1894, p. 127); L, pp. 73, 77; K, pp. 76, 80; R, pp. 87, 92. The tenth century Jewish thinker Abū al-Khayr’s statement may echo this thesis: “[The knowledge of God] is necessary from the perspective of the intellect, and inferential from the perspective of the sense perception.” (al-Tawhīdī, *al-Muqābasāt*, ed. M. Hussein, Tehran: Markaz Nashar Daneshgahi, 1987, p. 174).
- 27 See (Wisnovsky 2003, pp. 146–60; 2012, pp. 27–50).
- 28 For the analytical empiricism in Kalām and its “eastern” (Central Asian and Indian) origins, see (Dong 2018). I borrowed the term from Hao Wang, see (Wang 1985). By analytical empiricism, I mean an epistemological position holding that knowledge is primarily sense perception and conceptual knowledge is all but a conventional ordering of perceptions. In contrast, intellectualism refers to the stance that knowledge can only be attained by the intellect, while perceptions are no knowledge in its true sense but at most its raw materials.
- 29 Bilal Ibrahim characterized Fakhr al-Dīn al-Rāzī’s alternative programme to the Aristotelian–Avicennian essentialist science as phenomenalism, see (Ibrahim 2013a, pp. 379–431); Benevich analyzed the arguments of al-Rāzī, al-Suhrawardī, and Abū l-Barakat al-Baghdādī against Peripatetic scientific definition and identified their epistemological approach as a “unified direct realism”, see (Benevich 2022a, pp. 72–108). We do not suggest that al-Rāzī was under the influence of Saadya (for it is unlikely for any major medieval Muslim authors like al-Rāzī to have access to the Jewish Kalām works), but just intend to point to the common cause and approach shared by these two thinkers. A comparative research of Saadya’s and al-Rāzī’s (and possibly others’) projects of the scientific ideal is in order, and yet goes beyond the scope of this study.

References

- Abrahamov, Binyamin. 1993. Necessary Knowledge in Islamic Theology. *British Journal of Middle Eastern Studies* 20: 20–32. [CrossRef]
- Adamson, Peter. 2007. *Al-Kindī*. Oxford: Oxford University Press.
- Al-Baghdādī. 1928. *K. Usūl al-Dīn*. Istanbul: Dar al-Funun al-Turkiyya.
- Al-Ghazālī. 1962. *I’tiqād*, Ankara: Nur Matbaasi; English translation, A. M. Yaqub, trans. 2013. *Moderation in Belief*. Chicago: The University of Chicago Press.
- Al-Muqammaṣ. 2016. *‘Ishrūn Maqāla*. Translated and Edited by Sarah Stroumsa. Provo: Young Brigham University Press.
- Al-Qirqisānī. 1918. Tafsīr Bereshit. In *Qirqisāni Studies*. Edited by H. Hirschfeld. London: Jews’ College, pp. 39–59.
- Al-Qirqisānī. 1939–1943. *K. Anwār*. Edited by Leon Nemoy. New York: Alexander Kohut Memorial Foundation.
- ‘Abd al-Jabbār. 1960–1965. *Mughnī*. Edited by Taha Husayn. Cairo: Al-Dar al-Mijriyah li-‘l-Ta’lif wa-al-Tarjamah.
- ‘Abd al-Jabbār, Ahmad ibn al-Husayn Mānakdīm. 1996. *Sharh al-Usūl al-Khamsa*. Edited by A. K. ‘Uthmān. Cairo: Maktaba Wahība.
- Benevich, Fedor. 2022a. Meaning and Definition: Scepticism and Semantics in Twelfth-Century Arabic Philosophy. *Theoria* 88: 72–108. [CrossRef]
- Benevich, Fedor. 2022b. Knowledge as a Mental State in Mu‘tazilite Kalām. *Oriens* 50: 244–79. [CrossRef]
- Ben-Shammai, Haggai. 1977. (Hebrew) The Doctrines of Religious Thought of Abū Yūsuf Ya‘qūb al-Qirqisānī and Yefet ben ‘Elī. Ph.D. thesis, The Hebrew University of Jerusalem, Jerusalem, Israel.
- Ben-Shammai, Haggai. 2005. Kalām in Medieval Jewish Philosophy. In *History of Jewish Philosophy*. Edited by Daniel Frank and Oliver Leaman. London: Routledge.
- Black, Deborah. 2006. Knowledge and Certitude in al-Fārābī’s Epistemology. *Arabic Sciences and Philosophy* 16: 11–45. [CrossRef]
- Davidson, Herbert A. 1987. *Proofs for Eternity, Creation and the Existence of God in Medieval Islamic and Jewish Philosophy*. Oxford: Oxford University Press.

- Dong, Xiuyuan. 2018. The Presence of Buddhist Thought in Kalām Literature. *Philosophy East and West* 68: 944–73.
- Efros, Israel. 1942. Saadia's Theory of Knowledge. *The Jewish Quarterly Review* 33: 133–70.
- Frank, Daniel. 1991. The Religious Philosophy of the Karaite Aaron ben Elijah: The Problem of Divine Justice. Ph.D. dissertation, Harvard University, Cambridge, MA, USA.
- Frank, Richard. 1971. Several Fundamental Assumptions of the Baṣra School of the Mu'tazila. *Studia Islamica* 33: 5–18. [CrossRef]
- Galen. 1916. *On the Natural Faculties*. Edited by Georg Helmreich. Translated by Arthur Brock. Cambridge: Harvard University Press, pp. 274–75. [CrossRef]
- Gutas, Dimitri. 1998. *Greek Thought, Arabic Culture*. London: Routledge.
- Hegedus, Gyongyi. 2013. *Saadya Gaon: The Double Path of the Mystic and the Rationalist*. Leiden: Brill.
- Ibn, Mattawayh. 2009. *Al-Tadhkira fī Ahkām al-Jawāhir wa-l-a'rād*. Edited by Daniel Gimaret. Cairo: Institut Français D'archéologie Orientale.
- Ibrahim, Bilal. 2013a. Fahr al-Din al-Razi, Ibn al-Haytam and Aristotelian Science: Essentialism Versus Phenomenalism in Post-Classical Islamic Thought. *Oriens* 41: 379–431. [CrossRef]
- Ibrahim, Mohd Radhi. 2013b. Immediate Knowledge according to al-Qāḍī 'Abd al-Jabbār. *Arabic Sciences and Philosophy* 23: 101–115. [CrossRef]
- Juwaynī. 1950. *Irshād*. Cairo: Maktaba al-Khaniji, (English translation, P. Walker, trans. 2000. *A Guide to Conclusive Proofs for the Principles of Belief*. Reading: Garnet Publishing).
- Koetschet, Pauline. 2022. What Level of Certainty Can Medical Sign-Inference Reach? A Discussion of Galen's Demonstrative Method in the Islamic World. In *Galen's Epistemology*. Edited by Robert J. Hankinson and Matyáš Havrda. Cambridge: Cambridge University Press, pp. 275–89.
- Kraus, Paul. 1935. *Jabbir Ibn Hayyan, Volume 1: Textes Choisis*. Cairo: Librairie el-Khandgi.
- Lobel, Diana. 2000. *Between Mysticism and Philosophy: Sufi Language of Religious Experience in Judah Ha-Levi's Kuzari*. Albany: State University of New York Press.
- Maimonides. 1963. *The Guide of the Perplexed*. Translated by Shlomo Pines. Chicago: The University of Chicago Press.
- Morison, Ben. 2008. Logic. In *Cambridge Companion to Galen*. Edited by R. J. Hankinson. Cambridge: Cambridge University Press, pp. 66–115.
- Pasnau, Robert. 2017. *After Certainty: A History of Our Epistemic Ideals and Illusions*. Oxford: Oxford University Press.
- Peters, Johannes Reinier Theodorus Maria. 1976. *God's Created Speech: A Study in The Speculative Theology of The Mu'tazili Qadi l-Qudat Abul-Hasan 'Abd al-Jabbar ibn Ahmad al-Hamadhani*. Leiden: Brill.
- Saadya. 1880. *K. al-Amānāt wa'l-I'tiqādāt*. Edited by Samuel Landauer. Leiden: Brill.
- Saadya. 1891. *Commentaire sur le Séfer Yesira, ou Livre de la Creation*. Translated and Edited by Mayer Lambert. Paris: É. Bouillon.
- Saadya. 1894. *Version Arabes des Proverbes*. Translated and Edited by Joseph Derenbourg, and Mayer Lambert. Paris: Libraire de la Societe Asiatique.
- Saadya. 1899. *Version Arabes du livre de Job*. Translated and Edited by Wilhelm Bacher, Joseph Derenbourg, and Hartwig Derenbourg. Paris: Libraire de la Societe Asiatique.
- Saadya. 1970. *K. al-Amānāt wa'l-I'tiqādāt*. Edited by Josef Kafih. Jerusalem: Sura.
- Saadya. 1973. *Iyov 'im Targum ve-Perush ha-Gaon Rabbenu Saadya ben Yosef Fayyumi*. Edited by Josef Kafih. Jerusalem: Sura.
- Saadya. 1948. *The Book of Beliefs and Opinions*. Translated by Samuel Rosenblatt. New Haven: Yale University Press.
- Saadya. 1988. *The Book of Theodicy: Translation and Commentary on the Book of Job by Saadia ben Joseph al-Fayyūmī*. Translated by Lenn E. Goodman. New Haven: Yale University Press.
- Sklare, David. 2021. Epistemology in the Service of Polemic: Yūsuf al-Baṣīr's Kitāb al-Isti'ānah: Text and Translation. In *Polemical and Exegetical Polarities in Medieval Jewish Cultures: Studies in Honour of Daniel J. Lasker*. Edited by Ehud Krinis, Nabih Bashir, Sara Offenberg and Shalom Sadik. Berlin: De Gruyter.
- Stroumsa, Sarah. 2002. Saadia Gaon: A Jewish Thinker in a Mediterranean Society. In *Jewish Culture in Muslim Lands and Cairo Geniza Studies*. Edited by M. A. Friedman. Tel-Aviv: Tel Aviv University, pp. 7–42.
- Vajda, Georges. 1948. Études sur Saadia. *Revue des Études Juives* 109: 68–102.
- Van Ess, Josef. 1970. The Logical Structure of Islamic Theology. In *Logic in Classical Islamic Culture*. Edited by Gustave E. von Grunebaum. Wiesbaden: Otto Harrassowitz, pp. 21–50.
- Walbridge, John. 2014. *The Alexandrian Epitomes of Galen, Volume 1: On the Medical Sects for Beginners; The Small Art of Medicine; On the Elements According to the Opinion of Hippocrates*. Provo: Brigham Young University Press Utah.
- Wang, Hao. 1985. Two Commandments of Analytic Empiricism. *The Journal of Philosophy* 82: 449–62. [CrossRef]
- Wisnovsky, Robert. 2003. *Avicenna's Metaphysics in Context*. Ithaca: Cornell University Press.
- Wisnovsky, Robert. 2012. Essence and Existence in the Eleventh-and Twelfth-Century Islamic East: A Sketch. In *The Arabic, Hebrew and Latin reception of Avicenna's Metaphysics*. Edited by Dag Nikolaus Hasse and Amos Bertolacci. Leiden: Brill.

-
- Wolfson, Harry Austryn. 1942. The Double Faith Theory in Clement, Saadia, Averroes and St. Thomas, and Its Origin in Aristotle and the Stoics. *The Jewish Quarterly Review* 33: 213–64. [[CrossRef](#)]
- Yūsuf, al-Baṣīr. 1985. *Muhtawī*. Edited by Georges Vajda and David R. Blumenthal. Leiden: Brill.

Disclaimer/Publisher’s Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.