

IBN SĪNĀ—AL-BĪRŪNĪ CORRESPONDENCE—VII

Translated by Rafik Berjak and Muzaḥḥar Iqbal

This seventh instalment of the correspondence between Ibn Sīnā and al-Bīrūnī continues the reply of Abū Saʿīd al-Maʿšūmī, one of Ibn Sīnā's most accomplished students. Responding to the third objection of al-Bīrūnī, al-Maʿšūmī explains Ibn Sīnā's position on the eternity of the world. Then he responds to al-Bīrūnī's objections to the fourth question, which deals with divisibility of bodies; the seventh question, which deals with the different locations of sunrise and sunset; the eighth question, about the nature of fire; the ninth question, on the reflection of light; and the tenth question, about the transformation of elements. This brings to a close the response of Ibn Sīnā (sent by al-Maʿšūmī) to the first set of ten questions. The eighth and the last instalment (to be published in the next issue) will complete this provisional translation of the correspondence between Ibn Sīnā and al-Bīrūnī.

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Another Proof: If Allah—the Most High and Exalted—began the world, was there a beginning to that beginning? This would lead to an infinite regress. It thus follows that creation is eternal since pre-eternity (*azal*),

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that is, there is no beginning to the beginning; it is hence eternal. It is impossible to void the eternal by an emerging creation, because the eternal does not become voided. And we [yet] see it here voided [by your argument]; therefore, there can be no beginning for the world.

Another Proof: Furthermore, it was always in His power to create these things—and nothing could or did prevent Him from doing so—they must therefore have existed with Him eternally (*abadan*). If they did not exist with Him eternally, but came into existence temporally, then there must be another cause for their existence. If He Himself was the cause, however, then they should always have existed with Him—for [the presence of another cause implies] a cause higher than the First Cause, which is impossible.

Another Proof: He said: If the universe is preserved [by Allah] due to His goodness and generosity and is based on an orderly system—and Allah the Exalted only chooses Goodness in His actions—whoever characterizes Him as the One doing (*fā'il*) goodness and generosity in eternity, the Possessor of the rope that does not break, Creator of everything perfect and infinite: this description is far better than what you are describing, namely, that He has only been King of His kingdom for a span of six thousand-some years, which makes His dominion similar to the regality of *Iblīs*—may Allah's curse be upon him—over his devils. Hallowed is Allah, Exalted, far above such depictions. Some consider the priority (*qidmah*) of the subject (*fā'il*) over objects in terms of time only, which is wrong because priority has different aspects. This was fully explained in *Categories*, and I have sent an inquiry to my benefactor al-Rāzī for consultation. In any case, the subject has two priorities over the object: (i) honorific priority and (ii) natural priority. Honorific priority is analogous to the priority of the prince over the guard, and that of the teacher over the student; natural priority is like the priority of one over two, the priority of the sun over the day, and the simple over the compound. This is so because the subject (*fā'il*) is able to exist without the action (*fī'l*), but it is impossible for action to exist independent of the doer (*fā'il*). Bringing these two premises together, I emphasize the priority of the subject to make a sixth branch (*fann*): to say “it *must* have priority in time” is not [correct], because neither the honorific nor the natural priorities require such. Can't you see that atoms (*jawāhir*) have natural posterity over accidents (*ʿarḍ*), although atoms do not exist except with accidents—and though the day (*nahār*) exists only by the presence of the sun, this does not necessitate

a temporal posterity of the sun; and this is identical to our case?

Another Proof: He said: If the form does not exist except as *hulè* and *hulè* does not exist except by taking some sort of form, and neither can exist without the other, how did form come into existence without matter (*māddah*) and vice versa? If the existence of each is dependent on the existence of the other, non-existence will perpetuate itself—neither will exist. And [yet] we see them existing, and thus their existence must be eternal, beyond time. This does not remove the Subject (*fā'il*) from [performing] creation of the universe, despite its eternal presence with Him, because its existence [still] depends on Him and He is the cause of its being: He keeps it from disappearance and ensures its existence; without Him it would be non-existent. This is difficult to conceptualize and in truth requires more premises to recognize, but I have elaborated upon this as much as I could while not addressing what is deeper and more complicated, because [truly] comprehending this falls under metaphysics, [in which] I am a novice. This however is the best I can do, and I am sure I have not contradicted what I already mentioned in my lost letter to you, although that presented it better and was clearer. With what I have quoted from the Philosopher's proofs, this should suffice. As for your criticism of his position on infinity and your claim that he contradicted himself in his books—well, I did not bother with it here, because it is the criticism of one who neither understood what Aristotle said on infinity nor read what the commentators wrote about his books. To him and to the esteemed philosophers in general the finite and the infinite are accidents which affect the quantity; the quantities, according to them, are either connected, like bodies, surfaces, lines, place, and time, or [are] disconnected, like numbers.

The existence of infinity in all of these is impossible. In the case of connected bodies it would require the existence of a body that is infinite in actuality, and, in the case of the disconnected bodies, the existence of a number infinite in actuality and to which more cannot be added. It was proven in *Sam' al-Kiyān* that this is impossible.

As for the existence of infinity by force (*bi'l quwwah*), this is correct, as it is said of time in the future that it is infinite, and that by force a new [state] continually emerges from it; likewise, we say of the body that it accepts infinite divisibility by force; and, likewise, nothing prevents the existence of infinity in the past, and it is always so by force. No day can be imagined without a day before it, *ad infinitum*; no tomorrow can be imagined without a day after it. Even imagining it so is intellectually

difficult. Imagination and conjuncture both refuse it because they observe that times are limited from both ends, except what is similar to imagining the Creator as having infinity in His beginning. This is not impossible for the intellect, but the [truly] impossible [proposition] is the existence of an infinite time with two limited ends, or the existence of infinity in a time that has an end in actuality.

And as for your request for proof of the substance of the Philosopher's de-anthropomorphism (*tanzīh*) regarding the Creator's delay (*ta'ṭīl*) in action, that is a very great discussion and is more complicated than all of these topics, and you will understand it if you read *Metaphysics* diligently, *inshāʾaʿLlāh*. Your claim that it leads to self-sufficiency from the Creator is a conceptual mistake, because the existence [of God and the universe] together, on his view, does not prevent one of them requiring the other, like the existence of a sunbeam and color in a body together does not necessitate that both the light and the color must exist in themselves without any interdependence between them.

And as far as your recommendation regarding John the Grammarian is concerned, I hope that one [such as you], who has read each of the commentaries of John the Grammarian on these sciences and [hopefully] recognized their merits and differentiated between the right and the wrong in them, would be more knowledgeable about [John] than anyone else. But the intention of the wise one in that section [seems to have] escaped you, because he assumed the reader had already read [John's] book in which he refuted Aristotle—misleading the Christians when they accused him of blasphemy and incited his killing, whereupon he deceived them and [publicly] disagreed with the views of his teacher as he did with them regarding the trinity—while [in reality] his beliefs were in agreement with the Philosopher's. This is why he referred you to his other books, that you might discover that his actual beliefs lie opposed to what he claimed for the Christians. It is astonishing that it gave you [means] to attack John the Grammarian, and that you then went even further to attack his teacher, the Master of Philosophers, Aristotle, from whom he acquired this knowledge.

On the Fourth Question: As for your objection regarding the issue of divisibility, this is an objection of one who did not reflect on the answer nor understood it thoroughly, as you seem to think the wise one was not clear on the issue of divisibility in actuality or by force—how could that be, as it is the area of his expertise?

Upon my life, it remained unclear to you because he meant by divisibility

in action what nature divides in the process of transition, not how the butcher cuts the meat with his knife. He mentioned that whatever nature divides stays in it endlessly in actuality, and that bodies are composed of compounded finite parts. If otherwise, infinity would exist in a time limited in actuality, which is impossible. There is no part that nature will divide in actuality except that it has two ends and a middle, because the end is not limited, but everything that has two ends and a middle is divisible. The impossibility of its division in actuality is because of the inability of infinity to come out from force (*min al-quwwah*) to actuality.

As for your argument in favor of the indivisibility of the diagonal of the square by action, if you had understood the problem you would not have objected in this way, as this objection is usually raised against the followers of Democritus and not against those who accept divisibility by force for each. It must be known that those parts which nature does not divide in actuality do not allow for the composition of a square, as they [are the parts] which are necessary for its existence; if we consider them as dividers [dividing it] into two halves it will cause discrepancy, as in the case of non-spherical shapes. Can't you see that even if we compose a square from these [parts], the parts that the diagonal will cross will not be attached as the sides are—there will remain a gap between them? Consider this example: it has been made clear that the diagonal intersects the three parts separate from each other, whereas the sides intersect them when they are connected; therefore, no shape can truly be composed of these parts, be it a triangle, a square or anything else, except by approximation. This happens in the imaginary lines pictured by intellect. If you meant by it the parts of the sides and the diagonal in the imaginary lines, to me these are infinitely divisible in actuality, and their action is only imagined by the intellect, outside matter and *hulè*. Therefore, its divisibility in actuality will be imaginary, and it is an intellectual image (*al-taṣawwūr al-ʿaqlī*). Had you reflected deeper on the answer of the wise one you would have saved yourself the [trouble of] dealing with this question.

On the Seventh Question: Regarding your objection about the right side of the heavens: know that the wise one did not favor this issue because he considered the heavens without a specific direction—but in case this direction does exist, the priority to him is for the east to be in front, the west behind and the north to the right, and the south to the left, and its highest surface to be above and the side which touches

ether as the bottom-most. At the least he has clarified for you the opinion of the philosophers as per your question. As for what you have mentioned about the difference of sunrises and sunsets being related to the location of places—you should know that the philosopher does not believe that the heaven has a left and a right of its own, but he added to it a left and a right in addition to the difference of locations because it is continually moving. If it truly had its own “right” side, not one superadded to it, its right would turn towards its left everyday at sunset; but, its right being determined merely from our perspective, this should not be difficult for you to imagine.

On the Eighth Question: The reference in this case came from you because you operated on a false premise, which is that fire is a result of the movement of the heavens. Based on that foundation you branched off to another concept—that of the movement of the two poles—and you based your conclusion on that. These objections apply to whoever accepts that fire is the result of the movement of the heavens, but does not arise for one who asserts fire is a sphere and an element like other elements, and not the result of anything else. You did not ask for proof of [fire] being an element; instead, your objection arose from a corrupt foundation. Were it not a lengthy process, requiring much elaboration, I would have clarified it for you.

On the Ninth Question: Your question about the nature of the reflection of light: You should know that light travels through a transparent body which allows it to travel to the opaque body upon which it then appears. In the case of a transparent body between two opaque bodies, such as with air, light appears on the second opaque body through the transparent body between them; this is called reflection. The thicker the body and darker the color, the stronger the reflection will be. If the light reflects, its reflection creates heat; if the reflection becomes stronger and focused and gathers from many different directions—as you see in burning mirrors—it leads to the heating of the Earth by the sun, because light is more intense when it is closer to the sun; in that [case] it reflects at a right angle, and bounces back in the same manner in which it is received, and becomes like a vertical line, and therefore its heat is more intense.

As for that part of the Earth far from the sun, light reflects on it at obtuse angles and it does not focus on one spot, and therefore its heat is weaker. And this light that is being reflected upwards from the earth become weaker the further it travels from the earth, until, in the middle of the

atmosphere, it disappears—and there the air will be in its natural state in actuality. But your denial of his claim that “the light is the color of the transparent [body] because it is transparent”—well, his saying was figurative, as air does not have a color but yet light appears in it, so it is permissible to call the light its color; if you wish you may say that the light makes the transparent complete because the transparent will not be transparent except in light. And the meaning of our saying “the perfection of a thing as however it is so” lies in that a thing can have many, perhaps differing attributes, and can yet be described as perfect using any one of these aspects alone. [For example,] a person can be described as perfect from the point of view of his sensitivity and not his ability to speak, and vision [can also be described] as the perfection of the person as one who sees, not as that of one who listens. Using this terminology is useful, but it is not frequently employed in these sciences. This is similar to [the case when] air is not transparent in actuality, and light does not exist in it; then it is [transparent] by force, as light is its perfection: he brought it from force to actuality that it be transparent.

And for your objection regarding the denial of the ray of light being a body: whoever says this proves the existence of vacuum, and it does not nullify that by which the wise one responded to you because you did not enter into a debate but only asked him about the nature of the ray, and he clarified it for you. Had you asked him about the issue, he would also have clarified that for you. And what the Philosopher has said in the fourth chapter of his book *as-Samāʾ al-Ṭabīʿī* regarding the impossibility of vacuum is sufficient for the one who has [properly] conceptualized [the matter].

And your objection after accepting the impossibility of vacuum, that the ray always exists from numerous sides of the earth—what do you say about the light of the moon at the time of eclipse: if light were a body, what would [come to] replace it? Vacuum does not exist, although we see the spreading of the rays of the sun simultaneously with the rise of the sun, and the body does not move or travel a distance except in time.

On the Tenth Question: And regarding your denial of the transformation of elements, one to the other, and your claim regarding the breaking of a heated flask, if it were sealed at its mouth [to prevent] the entrance of particles of fire into it; they are false. Either the fire and the water will enter it [together], and this is impossible—because it is impossible for

two bodies to be in one place—or an equal amount of water will leave to allow the entrance of fire, which case will not cause the breaking of the flask. But how would particles of fire and water meet in one place as they are opposites, without the stronger destroying the weaker, I wish I knew! He referred you in this matter to sources; if you had reviewed them you would have reached the coolness of certainty in this matter. And your saying that we have never seen water except in its watery image, unless solidified—no one disputed you in this matter, and yet is it not transformation, as you have just mentioned? No one says that the body will not be able to return to its original form after transformation. What you have mentioned further emphasizes the [fact] bodies always accept transformation. The contraction of a body as a result of the expansion of another has been observed, because when the body is heated and expanded, it puts pressure on what is near to it, and it contracts those bodies as you see in the case of rising steam. And likewise you see in the baths: steam expands by heat, and it exerts pressure on particles [of steam] that are above, and it condenses on the ceiling, and turns them into water, which is why it appears as if it has sweat—and this is enough evidence for the impossibility of vacuum and the transformation of things, even if we do not [directly] observe it.

(To be continued)