

TIME, MOTION, DISTANCE, AND CHANGE IN THE *KALĀM* OF
FAKHR AL-DĪN AL-RĀZĪ: A PRELIMINARY SURVEY WITH SPECIAL
REFERENCE TO THE *MAṬĀLIB ʿĀLIYAH*

Adi Setia

As a corollary to his argument for the atomic conception of the body (*jism*), al-Rāzī also argues for the atomic conception of time, motion, distance and change. Aspects of his argument are presented here through a translational survey of his *Maṭālib ʿĀliyah*. For him, if any of the five (body, time, motion, distance, change) is atomistic in structure, then all the others will have to be conceived in atomistic terms as well.

Keywords: Fakhr al-Dīn al-Rāzī on time, motion, distance, change; kalām; Islamic philosophy; atomism; *Maṭālib ʿĀliyah*.

Introduction

In arguing for the atomic conception of the body,¹ Fakhr al-Dīn al-Rāzī

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1. See Adi Setia, “Atomism versus Hylomorphism in the *Kalām* of Fakhr al-Dīn al-Rāzī,” *Islam & Science*, Vol. 4 (Winter 2006) No. 2, 113-140. For a good general intellectual historical background, see Ayman Shihadeh, “From al-Ghazālī to al-Rāzī: 6th/12th Century Developments in Muslim Philosophical Theology,” *Arabic Sciences and Philosophy*, Vol. 15 (2005), 141-179. For *kalām* atomism as a constructive response to *falsafah*, see A. I. Sabra, “Kalam Atomism as an Alterantive Philosophy to Hellenizing Falsafa” in James E. Montgomery, ed., *Arabic Theology, Arabic Philosophy, from the Many to the One: Essays in Celebration of Richard M. Frank*, Leuven-Paris-Dudley, MA 2006 (Orientalia Lovaniensia Analecta 152), 199-272.
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Islam & Science, Vol. 6 (Summer 2008) No. 1

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ISSN 1703-7603 (Print); ISSN 1703-7602X (Online)

(d. 1209 CE) also has to argue for the atomic conception of time, motion, and distance, since, in a way, all four are mutually entailed. For al-Rāzī, if time, motion, and distance are discrete entities then, *ipso facto*, the physical, sensible body must also be composed of discrete minimal parts, and therefore the indivisible atom exists. Thus at the beginning of the eighteen-page fourth section of volume six of the *Maṭālib* entitled “Arguments constructed from consideration of the nature of motion and time to show the existence of the indivisible atom,” he says:

Know that we shall construct arguments to show that motion means consecutive obtainments² (*ḥuṣūlāt mutaʿāqibah*) in adjoining spaces (*aḥyāz mutalāṣiqah*) such that each obtainment is not receptive to division (*al-qismah*) at all. And we shall also construct arguments to show that time is composed of consecutive, successive adjoining present-instants (*ānāt mutatāliyah mutalāṣiqah*) such that each one of them is not at all receptive to division. Then we shall explain that once this view is established for motion or for time, it will then be imperative to conclude that the body is composed of parts that are not divisible (*murakkab min al-ajzāʾ allatī lā yatajazzaʾ*). Know that time (*al-zamān*), motion (*ḥarakah*) and distance (*al-masāfah*) are three correlated entities (*umūr thalāthah mutaṭābiqah*), such that if it is established that one of them is composed of entities not receptive to division, then all three will be so established to be indivisible also.³

But what if one of the three is infinitely divisible? If so, then all three are also infinitely divisible and hence not discrete but continuous in structure. Al-Rāzī points out that this is the view of the philosophers, especially Aristotle and Ibn Sīnā, but that he will argue the case for the atomists. One of his arguments is taken from a separate treatise on the problem of the indivisible atom (*fī masʾalah al-jawhar al-fard*) which he has written specifically on the problem of the indivisible atom, and so he refers his

For a review of past and recent research into *kalām* atomism, see Josef van Ess, “60 Years After: Shlomo Pines’s *Beiträge* and a Half Century of Research on Atomism in Islamic Theology,” *Proceedings of the Israel Academy of Sciences and Humanities* (Jerusalem: Israel Academy of Sciences and Humanities, 2002), Vol. 8, No. 2, 19-41.

2. Or “actualizations”; see the “index of technical terms” in R. M. Frank, *Beings and Their Attributes: The Teaching of the Basrian School of the Muʿtazila in the Classical Period* (Albany: State University of New York Press, 1978), 181-200 on 189, s.v., *ḥṣl*.
3. Aḥmad Hījāzī al-Saqqā (ed.), *Al-Maṭālib al-ʿĀliyah min al-ʿIlmī al-Ilāhī*, 9 vols. in 5 (Beirut: Dār al-Kitāb al-ʿArabī, 1987), Vol. 6, 29.

readers to that work for further details.⁴

Motion, Distance, and Change with Respect to the Atomic Minimal Part

Al-Rāzī first argues for discrete motion by considering the sensible body that is initially in repose and then in motion.⁵ For the sake of keeping the discussion light, his arguments are mostly paraphrased rather than translated verbatim here. The body is first motionless then is in motion and then stops moving, and throughout these past, present, and future moments of initial repose, intervening motion, and terminal repose, the body remains a body, which indicates that motion is something existent that is distinct from the existence of the body itself. Now something, i.e., motion, has occurred to the body at the intervening moment between its initial and terminal moments of repose. If nothing, i.e., no motion, has occurred then no (relatively) initial (i.e., past), intervening (i.e., present), and terminal (i.e., future) moments of the body would have been discerned. Therefore it is established that motion has occurred at that intervening present moment between the past initial and future terminal moments of repose. Now, that intervening present moment of motion can either be supposed to be composed of two parts or not so composed. The first supposition is invalid because when the first part obtains the second is yet to obtain, and when the second part obtains the first passes away; thus no single moment wholly obtains, but only either of the two parts thereof; therefore, only a half-moment obtains in either case. Now, if one of the two parts that obtains is again divisible into two sub-parts, then not even a whole half-moment obtains but only half of a half-moment, and so on.

Hence if every subsequent half-parts is sub-divisible into further half-parts, then nothing that is a whole of any part obtains but only a part of a part *ad infinitum*, and thus nothing whole of any thing or any part obtains. This is absurd, since at least one whole moment of motion must have obtained between the initial and terminal reposes. Therefore it is to be concluded that this intervening present moment of motion is a single complete motion not receptive to division, and likewise for each and every subsequent present motion-moment throughout the duration of the motion as long as the body is moving: each present moment of motion is a complete indivisible whole, and a seemingly continuous motion is but a

4. *Maṭālib*, 6: 32.

5. *Maṭālib*, 6: 30ff.

series of consecutive and complete discrete motion-moments or motion-instants.⁶ Thus al-Rāzī says:

It is established then that the present part of motion is not receptive to division, and there is no doubt that when this present part ceases another part obtains and presents itself, and this part is also not divisible. Likewise is the case for the third and fourth [and all subsequent] parts until the end of the motion. This is a conclusive overwhelming demonstration to the effect that motion is tantamount to consecutive, adjoining obtainments such that every one of these obtainments is not receptive to division at all; and that is what is sought.⁷

His second argument is that of a cube dragged along a plane.⁸ The cube is bounded by six planes, and each plane is bounded by four lines, and each line is bounded by two points. When the cube is dragged along a plane until it reaches the end of the plane, each one of its points in contact with the plane is also dragged along the plane and thus traces out a line from the beginning to the end of the plane. The point can then be said to be in contact with every part of the line which it traces. This means it did not skip any part of the line or else it would have contacted two parts without contacting the part separating between them, in turn entailing the invalid theory of the leap (*al-ṭafrah*).⁹

So it is established that the point has contacted the whole length of the line it traced. But since it is known that a point is wholly in contact only with a single point on the line at any one time, it follows then that the point contacts every point of the line it traces, hence the traced line must be composed of consecutively adjoined points. Furthermore, these are indivisible points finite in number, for if the line is composed of an infinite number of indivisible points, it will never be traced out in finite time. Al-Rāzī then shows from the foregoing that the distance covered by the point tracing the line consists of indivisible units of space-distances,

6. *Maṭālib*, 6: 30-31.

7. *Maṭālib*, 6: 31-32.

8. *Maṭālib*, 6: 34-35.

9. That is, of the Muʿtazilite anti-atomist al-Nazzām; see *Maṭālib*, 6: 109ff, for critical discussions; cf. Alnoor Dhanani, *The Physical Theory of Kalām* (Leiden: Brill, 1994), 160ff; Shlomo Pines, *Studies in Islamic Atomism*, trans. Michael Schwarz and ed. Tzvi Langermann (Jerusalem: Magnes Press, 1997), 13ff, 14n37, 15n37, 28n60; Harry Austryn Wolfson, *The Philosophy of the Kalām* (Cambridge, MA: Harvard University Press, 1976), 514ff.

and therefore the motion of the point along the line consists of consecutive obtainments of the point in those units of space-distances.

His third argument¹⁰ may be summarized thus: motion is something extended (*mumtadd*) between the initial and terminal points of the distance (*al-masāfah*) covered. But this extended something does not have objective external, entitative existence (*lā wujūda lahū fī al-a'yān*); what exists objectively is only a part of this extended-something at any given present moment of the motion, because both the past and future moments of the motion are non-existents with respect to the present moment of motion. So if it is said that motion is a single ever-divisible continuous whole from the beginning to the end of the distance covered, this will entail the non-existent past motion-moment to be continuous with the non-existent future motion through the existent present motion-moment, but the mind can never accept that two non-existents can be in mutual continuity.

His fourth argument is a variation on the first and proposes that the agent executes a succession of indivisible motion-units during the duration of his motion; however, if each motion-unit is sub-divisible into ever smaller sub-units, he will never execute the motion, and this contradicts sensible evidence.¹¹

His fifth argument¹² is of some interest here, for, like Aristotle and Ibn Sīnā, he connects the notion of motion with the notion of change. Motion as change in place or local change is comparable to change in quality or qualitative change (e.g., from black to white, hot to cold), change in quantity or quantitative change (e.g., from few to many, small to big) and change in position or positional change (i.e., change or motion within the same place or location, e.g., revolution of the celestial spheres). However, he rejects the philosophers' view that these changes can be either gradual or sudden,¹³ and says that a thing changes all at once or not at all, there being no change at all in the gradual, little by little sense. This also means that an event either happens or ceases to happen all at once and not gradually. When a thing occurs it occurs wholly and not partially, for it cannot

10. *Maṭālib*, 6: 36.

11. *Maṭālib*, 6: 36-37.

12. *Maṭālib*, 6: 37-38.

13. For them qualitative and quantitative changes are gradual, whereas existential change, from non-being to being and vice versa, as in generation and corruption, is sudden. In contrast, the atomistic view is that all change, without exception, is instantaneous and sudden, and occurs all at once or not at all.

be that a part of it occurs and a part of it yet to occur, since a part of a thing is in either case not the thing itself; if a part of a thing is the thing itself, then in either case the thing is both occurring and not occurring at once, which is absurd.

That which occurs, occurs wholly, and that which thereafter ceases to occur, ceases to exist wholly; and these [occurrence and non-occurrence] are two mutually opposed situations, such that when one obtains the other does not obtain. This is the truth. Therefore the view that a thing occurs gradually or disappears gradually is an invalid, false view without substance at all for a sound mind. Once this is established, then it will be manifest that motion is tantamount to the obtainment of situations, each of which occurs abruptly and disappears abruptly. If the motion is in place [local motion] (*ḥarakah fī al-ayn*) then it is tantamount to consecutive obtainments in adjoining spaces; and if the motion is in quality [qualitative change] (*ḥarakah fī al-kayf*) then it is tantamount to consecutive [obtainments of] different, mutually exclusive qualities. Each of these obtainments does not exist except at a single present moment; likewise is the case of motion in quantity [quantitative change] (*ḥarakah fī al-kamm*) and motion in position [positional change] (*ḥarakah fī al-waḍʿi*).Such change (*al-taghayyur*), alteration (*al-tabaddul*) and motion (*al-ḥarakah*) are qualities (*ṣifāt*) occurring in discrete consecutive succession, each of which does not exist except for a single present moment (*ānan wāḥidan*), and this entails a succession of present-moments [or present-instants]. Once this is established, it is then of necessity that motion in place is a series of consecutive, indivisible obtainments (*ʿibāratan ʿan ḥuṣūlātīn mutaʿāqibatīn għayrī munqasimatīn*), and that is what is sought.¹⁴

Time with Respect to the Atomic Minimal Part

Al-Rāzī's arguments for atomic time are structurally similar to his arguments for atomic motion, since he has already argued that the two are correlated. He conceives of time as composed of an uninterrupted, consecutive succession of "nows" or present-moments because only the present-moment is observed and experienced at any one time and thus exists while the past-moment has ceased to exist and the future-moment is yet to exist. The past and the future can be considered as the two separate non-existents that are connected by virtue of the ever-present now, moreover since talk of past and future time only makes sense with reference to the

14. *Maṭālib*, 6: 38-39.

concretely experienced present, the now. Thus the seemingly continuous, seamless flow of time is but the present now ever passing into the past to be ever replaced by the future-moment which then becomes present and now. In other words, time is but an uninterrupted series of discrete “nows” coming into and passing out of existence. He gives five arguments for atomic time in this section of the *Maṭālib*,¹⁵ of which we shall discuss the first three.

His first argument for discrete atomic time is based on the above conception of the nature of the now or present-moment. The present-moment must, first of all, exist, otherwise it cannot become past or future, i.e., otherwise a past- or future-moment would be inconceivable. He thus says:

We know necessarily that the present (*al-ḥāḍir*) exists, for if it does not exist, then it would be impossible for it to become past or future, and for we know that the present-now is the end [terminal limit] of the past and the beginning [initial limit] of the future; if this present-now does not exist [as such] then it must be either the past or the future, but the past cannot be the end [terminal limit] of the past, and the future cannot be the end [terminal limit] of the past, [and also] the future cannot be the beginning [initial limit] of the future. And for we know the presence of something in the present-moment, but this knowledge is conditioned upon the the obtainment of that present-moment [itself].

He then goes on to argue that this now or present-moment must be a single indivisible whole that is either obtained altogether at once or not at all. If, however, this present-moment is divisible into two halves, then when the first half obtains, the second is yet to obtain, and vice versa. In either case only a half of the present-moment obtains while the present-moment as such does not obtain, and this entails that what is present is not quite present, but this is absurd. Therefore it is established that the present-moment as such is an indivisible whole. It follows from this that just as the present-moment obtains or comes to be all at once and not gradually, so it ceases to be all at once and not gradually.¹⁶

While the first argument for time argues for the existence of the present-moment, that it is a single indivisible whole and that it obtains and ceases to obtain all at once and not gradually, the second argument¹⁷ ar-

15. *Maṭālib*, 6: 40ff.

16. *Maṭālib*, 6: 40-43.

17. *Maṭālib*, 6: 43.

gues for the existence of a consecutive, uninterrupted succession of present-moments as constitutive of the flow of time. Thus he says:

This present-moment, when it ceases to be, must be followed by the obtainment of something else that is present, for if this does not obtain then the interruption of time will be entailed, which is impossible. Likewise the case for the second and third present-moments. This necessitates the thesis of an uninterrupted succession of present-moments... As soon as the first present-moment ceases to be, the second present-moment must necessarily come to be and must be present at the moment it obtains.¹⁸

In the third argument he rejects the view that time is a continuous quantity in which the present-moment is merely a conjunction of the past-moment and the future-moment, since this would mean the conjunction of two non-existents, which is impossible. Hence time must be a discontinuous quantity consisting of whole units coming into being in uninterrupted succession, and therefore time must be composed of discrete present-moments.¹⁹

Quiddity of Motion and Change

Some of al-Rāzī's most interesting discussions of the problems of motion, change and repose are found in the *Sharḥ 'Uyūn al-Ḥikmah* (SUH) within the context of his critical engagement with Ibn Sīnā, where these three problems are to some extent considered quite apart from their implications for the problem of the indivisible part.²⁰ For instance, in the context of his discussion of the Aristotelian-Avicennan category of place (*al-ayn*) al-Rāzī differentiates between the view of the philosophers and the view of the *mutakallimīn* with regard to the reality of motion. While the latter say that motion means the obtainment of something in a place or space (*ḥayyiz*) after having obtained in another (i.e., different and previous) place, the former says that motion is translocating (*al-intiqāl*) from a first (initial) place to another (subsequent) place. The *mutakallimīn* see motion as a series of discretely obtained or accomplished movements, as "having moved" rather than "moving," while the philosophers see it as a con-

18. *Maṭālib*, 6: 43.

19. *Maṭālib*, 6: 43-44.

20. Aḥmad Ḥijāzī al-Saqqā (ed.), *Sharḥ 'Uyūn al-Ḥikmah* (SUH), 3 vols. in 1 (Tehran: Mu'assasah al-Ṣādiq, 1415H), 1: 105-106, 2: 35ff, 2: 137ff, 2: 151ff.

tinuous, progressive “moving” from one place to another.²¹ As for repose, al-Rāzī says that the philosophers are agreed that it means the absence of motion from something whose state is to move, so for them repose is merely the negation of motion and in itself it has no positive existence. As for the *mutakallimūn*, they view repose as something positive, as the obtainment of something in a place for more than one instance of time. However, al-Rāzī views this disagreement as merely verbal, and the two opposing viewpoints can be reconciled; for when the body is in repose at a place two things occur: first, cessation and absence of motion; second, persistence in that place. Viewed from the aspect of the former, repose is a negative quality, whereas from the aspect of the latter, repose is a positive quality.²²

In the *Maṭālib*, al-Rāzī gives an interesting argument for motion and repose as positive, existential attributes of the body:

We see the body being in repose after being in motion. The alternation of these two states together with the persistence of the essence [of the body] throughout the two states entails that either one of the two states is something existential. Once this is established, then of necessity each of the two states is something existential. This is so because motion means the first obtainment in the second place (*al-ḥuṣūl al-awwal fī al-ḥayyiz al-thānī*), and repose means the second obtainment in the first place (*al-ḥuṣūl al-thānī fī al-ḥayyiz al-awwal*). Hence motion and repose are alike with regard to wholeness of essence (*mutasāwīyan fī tamām al-māhiyyah*), for each of the two refers to obtainment in space, only that the difference between them is that motion’s obtainment in place is conditioned upon it being preceded by obtainment in another place, while repose’s obtainment is conditioned upon it being preceded by obtainment in that [same] place. For a thing’s being preceded by something else is an incidental attribute extrinsic to the quiddity, and attributes that are extrinsic to a quiddity do not impair that quiddity. Thus it is established that motion and repose are equivalent with regard to wholeness of essence; so if one of them is an existential attribute, then, of necessity, the other must also be likewise [i.e., be

21. This discussion is taken up again later in further detail in *SUH*, 2: 36ff. Cf. Syamsuddin Arif, “Ibn Sīnā’s Cosmology: A Study of the Appropriation of Greek Philosophical Ideas in 11th Century Islam,” doctoral dissertation (Kuala Lumpur: ISTAC, 2004), 33ff; cf. also Muḥammad ‘Āṭif al-‘Irāqī, *Al-Falsafah al-ṭabī‘iyyah ‘inda ibn Sīnā* (Cairo: Dār al-Ma‘ārif, 1971), 189ff; and Dhanani, 123ff.

22. *SUH*, 1: 106.

an existential attribute]. Therefore it is established by what we have said that motion and repose are each existential attribute (*ṣifāh mawjūdah*).²³

The above passage may be reformulated as follows: motion and repose are positive, existential qualities or “entitative accidents” having autonomous or separate ontic status, because both are obtainments or occurrences that happen to the body and are sensibly perceived: we can actually see and determine whether a body is in motion or repose and our mind judges intuitively that motion and repose are distinct from one another and from the body itself. Now, though motion and repose are both obtainments, they are so in two different senses. The first sense of obtainment pertains to motion, which is to obtain or to occur for the initial first time in a place B after having obtained in a previous place A. This implies that the observer, in order to judge that something is moving or rather has moved, has first to see the thing in place A and then in the next instant to see the same thing again for the first time in place B. But suppose he sees the same thing again for the second time in place B? If so, then this brings us to the second sense of obtainment, which pertains to repose, which is to obtain or occur for the second instant in the same place B. This implies that the observer, in order to judge that something is in repose (has persisted or remained and not moved) has first to see that thing at B at the immediately preceding instant and then to see it again at the same place B at the subsequent present instant.

In short, motion means to be in two different but contiguous or adjacent places at two successive instants, whereas repose is to be in the same place at two successive instants. With regard to motion, if the observer was a philosopher, he would say that the thing *moves* or is moving from A to B; if a *mutakallim*, the thing *has moved* from A to B. With regard to repose, the former would say that the thing is not moving or is not in motion or lacks motion, while the latter would say that the thing persists or remains in its place. The former adheres to a continuous, progressive, or gradual (*tadrijī*) conception of motion while the latter to a discontinuous, instantaneous (*daʿʿatan*) conception of motion. The latter’s conception implies that motion can also be conceived as a series of instantaneous repose (*sukūnāt*), a series of wholly completed obtainments, occurrences, or arrivals, but in successively different places and instants, for as soon as

23. *Maṭālib*, 4: 288.

something has moved to a place it is no longer said to be moving.²⁴ Thus al-Rāzī says that motion and repose are of the same species of entities (*min naw' in wāḥidin*) and that the contrast between them may be said to be merely verbal, i.e., conceptual and not actual.²⁵ However, if one of them, i.e., motion, has been proven to have positive existence (*amr thubūtī*), then the other, i.e., repose, must also have positive existence, since both are of the same species, i.e., the species of obtainment. Thus they both have actual physical existence even though the difference between them may not be physical but only conceptual.²⁶

In both the *Mabāḥith* and *SUH*, al-Rāzī critically engages the philosophers' definitions of motion (especially that of Ibn Sīnā), either as a gradual progression from potentiality to actuality, or as "the first consummation (*kamāl awwal*) of that which exists potentially insofar as it exists potentially."²⁷ Since both these definitions entails gradual transitional states between the initial state and the terminal state, al-Rāzī rejects them by saying that a thing either moves wholly and all at once (*daf'atan*) or not at all, though in the *Mabāḥith* he seems not to have noticed the atomistic implications. Also in the *SUH*, al-Rāzī follows Ibn Sīnā in accepting the other three types of motion apart from local motion, namely, quantitative, qualitative and positional motions, but, *contra* Ibn Sīnā, he understands these motions in the atomistic non-gradualistic sense of change from one state to another that is different from the initial state. Thus, in contrast to the philosophers' view, for al-Rāzī instantaneous change or motion from one state to another is not restricted to generation and corruption, i.e., the transition from non-existence to existence and its reverse. Like Ibn Sīnā, al-Rāzī uses the terms change and motion interchangeably to refer to transition between states, and he thus says:

The quiddity of motion is change (*al-taghayyur*) from one state to [another] state, and there is no doubt that the state transitioned from (*al-ḥālat al-muntaqal minhu*) is different from the state

24. *Muḥaṣṣal afkār al-mutaqaddimīn wa al-muta'akhhirīn min al-'ulamā' wa al-ḥukamā' wa al-mutakallimīn* (Beirut: Dār al-Fikr al-Lubnānī, 1992), 76-77; *ibid.* (Cairo: Maktabah al-Kulliyāt al-Azhariyyah, n.d.), 96; cf. *Kitāb al-arba'in fī uṣūl al-dīn* (Hyderabad, 1934), 5.

25. *Ibid.*

26. *Ibid.*

27. Muḥammad al-Mu'taṣim bi'llāh al-Baghdādī (ed.), *Al-Mabāḥith al-mashriqiyyah*, 2 vols. (Beirut: Dār al-Kitāb al-'Arabī, 1990), 1: 669ff; *SUH*, 36ff; cf. Arnaldez, "ḥaraka wa sukūn" in *EI2*.

transited to (*al-ḥālat al-muntaqal ilayhā*)...²⁸

From the foregoing it is quite clear, and al-Rāzī too makes clear, that the concept of motion is inextricably linked to the concept of the entity (body or atom) which moves, and to the twin concepts of time and space (i.e., spatio-temporal dimensionality) in which motion occurs.

Quiddity of Time

In volume five of the *Maṭālib*, in a section entitled “discussion on the quiddity of time,”²⁹ al-Rāzī briefly reviews the various philosophical views on the nature of time:

[The view] which is followed by Aristotle and accepted by the esteemed from among his followers like Abū Naṣr al-Fārābī and Abū ‘Alī Ibn Sīnā is that it [time] is the measure of the motion of the Great Sphere (*miqdār ḥarakat al-falak al-a‘zam*). The shaykh Abū al-Barakāt al-Baghdādī, author of the *Mu‘tabar*, says that it is the measure of the extension of being (*miqdār imtidād al-wujūd*).³⁰ Another group say that it is the very motion of the Great Sphere (*naḥs ḥarakat al-falak al-a‘zam*). Yet another group says that there is no meaning to time apart from the mere measuring of time in accordance with what we interpret and discover as regards its meaning (*mujarrad tawqīt ‘alā mā fassarnāhu wa kashafnāhu ‘an mā nāhu*). Still another group says that just as the point (*al-nuqtah*) traces out by its motion a line, so similarly the present-instant (*al-ān*) by its motion does time (*al-ānu yaf‘alu bi ḥarakatihī al-zamāna*).....A major group of ancient philosophers (*al-ḥukamā*) say that time is a sempiternal, necessarily self-subsistent substance (*jawhar azalī wājib al-wujūd li dhātihī*) which has no essential nor existential connection with either the celestial sphere or with motion. The celestial sphere, by its motion, merely measures out the parts of time (*yūqaddiru ajzā’ahū*), as in the case of the *finjānah* [hour-glass?] which due to its different states measures out the parts of the night and the day....”³¹

28. *Maṭālib*, 4: 262.

29. *Maṭālib*, 5: 51ff.

30. Cf. Abū al-Barakāt al-Baghdādī, *Kitāb al-Mu‘tabar* (Hyderabad, 1939), 3: 39, where he says, “If it were said that time is the measure of being (*miqdār al-wujūd*), that would have been better than saying that it is the measure of motion, for it also measures repose; and the reposing and the moving both partake of being...” Abū al-Barakāt devotes two sections in this work to the problem of time, one in the part on physics (2: 69ff), and the other in the section on metaphysics (3: 35ff).

31. *Maṭālib*, 5: 52.

Thereafter he singles out from among those views the Aristotelian-Avicennan view for a lengthy argumentative refutation, probably because this is the dominant philosophical view which he also happens to dislike, being inclined as he does toward what he understands to be the view of Plato (*al-Imām Aflāṭūn*), which to a large extent is reflected in Abū al-Barakāt al-Baghdādī.³² He first gives fifteen arguments spread over fourteen pages to refute the notion of time as the measure of motion and then allows three counter-arguments, each of which he follows with a response. The third argument serves to expose the circularity of the Avicennan definition of time and runs as follows:

The third argument for invalidating this view [of time as the measure of motion is]: that we say that if time is the measure of motion, then time would be an attribute (*ṣifah*) from among the attributes of motion, but every attribute is dependent (*muhtājah*) on the so attributed (*al-mawṣūf*), [thus] entailing that time is necessarily dependent on motion. However motion is [itself] dependent on time, for every motion is a transition (*al-intiqāl*) from one state (*ḥālah*) to another state, and the time of the state transited from is necessarily different from the time of the state transited to. And if such is the case then the quiddity of motion is not established unless time and its successive parts are established [first]. This situation would then demands that each of the two is dependent on the other, but this is an invalid and impossible circularity (*al-dawr*).³³

Later on in a shorter seven-page section of the *Maṭālib*³⁴ he critically engages other philosophers' views of time, especially the view of Abū al-Barakāt al-Baghdādī, which he finds invalid, and the view of Plato which he sees as the philosophical view closest to the truth—namely, that time is a self-subsisting entity essentially independent of celestial motion.³⁵ Then he explains and evaluates at some length and with considerable empathy (if not sympathy) the reasons underlying the view of those who argue that time is a necessarily self-subsistent entity, thus identifying time with God.

32. As reflected for instance in the thirteenth argument (*Maṭālib*, 5: 64) and in the *Maṭālib*, 5: 75ff. Pines notes F. al-Rāzī's indebtedness to Abū al-Barakāt's "Platonic" views, and indeed F. al-Rāzī himself declares his adherence to Plato's conception of time in many places in the *SUH*, 2: 119-150 *passim*, especially, 2: 148-149. Cf. Pines, 94-95.

33. *Maṭālib*, 5: 58-59.

34. *Maṭālib*, 5: 75-81.

35. *Maṭālib*, 5: 76-77, 5: 91, 103-104; cf. *SUH*, 2: 148.

Finally he makes explicit and unambiguous his own personal view, as follows:

The closest [to the truth] from among these views [is the view in which] it is said: The evidences show that the necessarily self-subsistent is one, and it is established that the necessarily self-subsistent is necessarily existent in all its aspects (*wājib al-wujūd min jamī‘ al-jihatihi*). This negates His being a substrate (*mawrid*) for changes and alterations. But duration (*muddah*) or time (*zamān*) is a substrate for changes and alterations with regard to the successive arrival (*tawārud*) upon it of the priorities (*al-qabliyyāt*) and the posteriorities (*al-ba‘diyyāt*), thus it is not necessarily self-subsistent in all respects, and hence not necessarily existent with respect to its essence but [only] possibly existent in its essence. As for Allāh, He is the Existent Sanctified from [all] changes, Aloof from being touched by anything potential. This is what we say and upon it we are resolved, and Allāh is the Guide.³⁶

Time is obviously not God, but what then is the final, positive position of al-Rāzī with regard to the nature or quiddity of time, i.e., what time is rather than what time is not? For al-Rāzī time is not the measure of motion or change, hence not dependent on motion or change; therefore, if it has a positive entitative existence this existence is independent of the existence of motion and change, though, as the above passage shows, not independent of God. This would mean that time has no eternal, necessary existence but was brought into being with the world, created with the creation of the cosmos as an integral but autonomous cosmic component. As a matter of fact, in the *Mafātīh*,³⁷ he talks of time as being just as created as space and as being possibly existent. This view would then be compatible with one of the three main interpretations of Platonic time in the *Timaeus*, namely that “time began with the ordered kosmos, and there was nothing before that.”³⁸ So when al-Rāzī says that time is an independent substance, he means independent not of God but of motion. Hence Zarkān need not have been too worried about al-Rāzī’s bestowing the honour of godhood on time.³⁹

36. *Maṭālib*, 5: 81.

37. *Mafātīh*, 1 (1): 163; 10 (29): 441.

38. Richard Sorabji, *Time, Creation & the Continuum* (London: Duckworth, 1983), 268.

39. Muḥammad Ṣāliḥ al-Zarkān, *Fakhr al-Dīn al-Rāzī wa arā’uhu al-kalāmiyyah wa al-falsafīyyah* (Beirut: Dār al-Fikr, 1963), 457.

The next question that then arises for al-Rāzī concerns the role of this motion-independent time in relation to physical realities like motion, actions, and change, for time, though independent, is inextricably linked with all three. As a matter of fact, he compares time to space in the sense that just as the latter is a receptacle of entities, bodies, and atoms, so the former is a receptacle of actions, events, and accidents.⁴⁰ If time is not the measure of motion, then can it be the other way round, i.e., motion is the measure of time, or motion measures out the duration of time? He says that time obtains whether or not motion obtains, and that though the latter has no influence whatsoever on the existence of time per se, it functions to measure and to determine time just as various instruments are used to measure out the duration of the day into parts and halves, despite the obvious fact that these instruments do not generate nor existentiate time. So, similarly, celestial motions merely measure temporal duration, and moreover, motion occurs in time but not vice versa.⁴¹ So it seems that for al-Rāzī, time is the objective indeterminate substance or physical dimension that is measured and hence determined or marked out by the accidents of motion and repose which inhere in it. Instead of time being the measure of motion, we now have the relation inversed: motion is the measure of time.

Time (*al-zamān*) and its Cognates

Al-Rāzī devotes an interesting five-page section in volume five of the *Maṭālib*⁴² to clarify the semantic relations between time understood generically as *al-zamān* with its various (denotative) cognates like *al-muddah* (duration or temporal extension), *al-waqt*, *al-sarmad*, *al-azal*, *al-abad*, *al-nahār* (day-time), *al-layl* (night-time), *al-yawm* (day), *al-sā'ah* (hour), *al-ḥīn*, and *al-ajal*. This section may be summarized as follows:

Al-muddah (duration or temporal extension) is time (*al-zamān*) insofar as it is extended or “stretched out” (*yamtaddu*, *imtidād*) by division into consecutive present-instants (*al-ānāt al-ḥāḍirah*). *Al-zamān* (generic time) is the time that is measured by celestial or instrumental motion. *Al-waqt* (unit time) is the individual or special time that is linked to a particular event that is known to occur, like your saying: “I’ll meet you [at the time of] the appearance of the new moon.” *Al-nahār* (day-time) is the time during which the sun rises and appears, whereas *al-layl* (night-time) is the

40. *Maṭālib*, 9 (25): 128; 9 (26): 275; 10 (28): 202.

41. *Maṭālib*, 5: 104.

42. *Maṭālib*, 5: 103-107; cf. *SUH*, 2: 148-149, and Pines, 57ff.

time during which the sun has set. *Al-dahr* and *al-sarmad* (absolute time or unqualified time) are two names for time considered apart from or devoid of occurrences and changes. *Al-azal* is *al-dahr al-mutaqaddim* (pre-eternal time) having no beginning and no initial moment, whereas *al-abad* is *al-dahr al-muta'akhkhir* (post-eternal time) having no ending or terminal moment.

Al-Rāzī seems to have forgotten to define the remaining three cognates: *al-sā'ah*, *al-ḥīn* and *al-ajal*, but in the *Mafātīḥ* these three are given definitions which are here summarized. *Al-ḥīn* (unspecified temporal period) refers to an unspecified temporal period that can either be short or long, as when you say to a friend, "I've not seen you for some time." It can also mean an aggregate number of days just as the term *al-ummah* (nation) refers to an aggregation of people.⁴³ *Al-ajal* (appointed time) refers to the time appointed for terminating a temporal period such as the period or span of one's life.⁴⁴ *Al-sā'ah* (instant) refers to the smallest unit of time.⁴⁵

As for *ʿasr*, Al-Rāzī reports four opinions (*aqwāl*) on its meaning in the *Mafātīḥ*, the first of which equates it with *dahr*. The second deems it to refer to the two extremities of the daytime (*ṭarafay al-nahār*), namely the morning when people arise to begin their work and the evening when they retire to end it and are then held to account for it. The third has it to mean the late afternoon prayer (*ṣalat al-ʿaṣr*), whose virtue is underlined by the fact that people in general have to turn away from their frenetic late afternoon preoccupations with trade and livelihood in order to perform it. The fourth interprets the verse "*wa al-ʿaṣr*" to mean that Allāh the Most High is swearing by the time of the Prophet (*annahū qasama bi zamān al-Rasūl ʿalayhi al-salām*), that is, by the specific era or age in which Muḥammad, *ṣallaḷlāhu ʿalayhi wa sallam*, and his *Ummah* live, which is the last age of humankind before the end of days, like the late afternoon (*ʿaṣr*) brilliance before the looming darkness of nightfall.⁴⁶

Conclusion

From the foregoing we may conclude that al-Rāzī inclines to the views that (i) motion is the measure of time, (ii) time is not prior to the cosmos but begins with it, and (iii) time is the measure of existence. However, as the

43. *Mafātīḥ*, 1 (3): 464-65; 6 (18): 453; 10 (30): 739.

44. *Mafātīḥ*, 3 (7): 91-92; 4 (12): 480-481; 5 (14): 234.

45. *Mafātīḥ*, 5 (14): 234.

46. *al-Taṣīr al-Kabīr* (also known as *Mafātīḥ al-Ghayb*), 32 vols. in 11 (Beirut: Dār Iḥyāʾ al-Turāth al-ʿArabī, 1996), 11: 277-279.

following quotation shows, he allows the question of the true conception of time to be left open for further investigation and surrenders its complete resolution to divine knowledge.

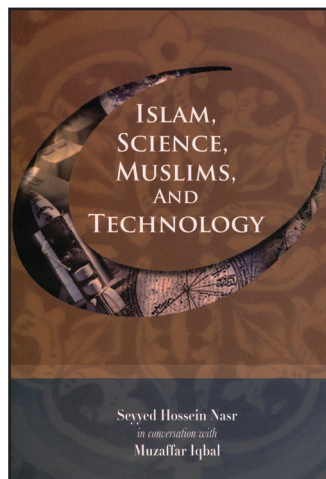
In the *SUH*,⁴⁷ after a long drawn-out critical engagement with Ibn Sīnā regarding the true conception of time, he states his final, “Platonic” position, and spells out the precise relationship between *al-sarmad*, *al-dahr*, and *al-zamān*.

It is clear that the partisans of the view⁴⁸ (*madhhab*) of Aristotle (*Aristāṭālīs*) that time is the measure of motion are not able to pursue further into any of the strictures of the inquiries regarding time except by referring to the view of Plato (*al-Imām Aflāṭūn*). The closest view to the truth for me with regard to [the problem of] time in principle (*fī al-mabdaʾ*) is the view of the Imām Plato, which is that it [time] is an essentially autonomous, self-subsistent existent (*mawjūdun qāʾimun bi nafsihī mustaqillun bi dhātihī*). If we consider the relation of its essence to the essences of enduring, changeless existents, it is named *al-sarmad* by virtue of this consideration. And if we consider the relation of its essence to that before the occurrence of motions (*al-ḥarakāt*) and changes (*al-taghayyurāt*) then that [time] is *al-dahr al-dāhir*. And if we consider the relation of its essence to the changes [or changing things] being in conjunction (*mutaqārinatan*) with it [time], then that is what is named *al-zamān*. As for the view of Aristotle (*Aristū*) that time (*al-zamān*) measures (*muqaddir*) motion, you have already known by decisive arguments of its invalidity (*fasādih*). As for the view of the Imām Plato, it is closer to [what] the demonstrative sciences (*al-ʿulūm al-burhāniyyah*) [demand], and farther away from the darkneses of ambiguities. Yet, despite this, complete knowledge of the realities of things (*ḥaqāʾiq al-ashyāʾ*) is but only with God the Sublime, the Transcendent.⁴⁹

47. *SUH*, 119-150.

48. Reading *madhhab* instead of *adhab*, which is obviously an error.

49. *SUH*, 2: 148-149; cf. R. M. Frank, “The non-existent and the possible in classical Ashʿarite Teaching,” *MIDEO*, Vol. 24 (2000), 1-37 on 7-10.



6x9, Pb; pp xii+212;
 ISBN: 978-983-9154-99-3; \$ 24.95
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