

Lesson 43: What is Time?

Discussion about the Reality of Time

Strange positions have also been reported regarding the reality of time, to which Ibn Sina has referred in the Physics of his Shifa. However, it seems that the solution of the problem of time was easier for Muslim philosophers than the problem of space, for they are almost entirely in agreement that time is a kind of continuous quantity characterized by instability and which by means of motion becomes an accident of bodies.

In this way, the position of time in the Aristotelian table of categories becomes perfectly clear. Sadr al-Muta'allihin has also presented this explanation in numerous places, but in the final analysis of the problem of motion, he states a new view which is especially important.

No matter how clear the explanation of time given by the philosophers is, if one is precise about it one will encounter ambiguous and questionable points which require deep thought. Perhaps it is these which attracted the fine and insightful attention of Sadr al-Muta'allihin, and led him to present a new theory of time.

In order to explain these points something must be mentioned about the principles of the philosophers related to this question, even though this is not really the place to discuss and research them.

Philosophers normally introduce motion as an 'accident,' but do not explain this any further. Only some of them have regarded it as of the category of 'that which acts' or 'that which is acted upon.' Shaykh al-Ishraq considered it to be an independent category alongside substance, quantity, quality and relation.

In this way, he limited the number of categories to five, and he considered the others as types of relation. Perhaps one may infer from the words of other philosophers that they have not considered motion itself to be among the categories.

Another principle is that motion is confined to four categories (quantity, quality, position, and place), and

they consider transferal to be a motion in the category of place. They imagined that motion in the other categories, including substance, was impossible. Therefore, motion, considered to be an intermediary between bodies and time, was inevitably taken to be motion in one of the four categories of accidents.

On the other hand, all of them accepted the theory of the ninefold celestial sphere as axiomatic, and they related the appearance of time to the circular rotation of the highest firmament. This point is also presented in some places by Sadr al-Muta'allihin.

Regarding these principles and points, questions may be raised about the famous definitions of time, among the most important of which are the following:

1. There is no doubt that time is extended and divisible, and hence is considered to be a kind of quantity or to possess a kind of quantity, but why should it be considered as a quantity of motion?

The simple answer which is given to this question is that time is flowing and not fixed, such that not even two moments of it coexist, and necessarily one part of it must pass before the following part may come into existence. This sort of quantity can only be related to something which is inherently flowing and not fixed, and that would be nothing other than motion.

As was indicated, this answer depends on the fact that gradualness, flux and instability are particular to motion, a motion which is presumed to be specified to the four categories of accidents, and for this reason they deny the possibility that time could be a quantity for corporeal substance. But is this doctrine correct? If it is supposed that there were no accidental motion in the world, would there then be no room for the concept of motion?

2. Motion is an intermediary between bodies and time, but what kind of intermediary is it? Is it a fixed intermediary (wasitah dar thubut),¹ from which it could be concluded that bodies themselves really possess time by means of motion, or is it an accidental intermediary (wasitah dar 'urudh), such that bodies themselves never really possess time? In other words, is the attribution of corporeal substance to time an accidental characterization (ittisaf bil-'aradh)?

Perhaps the answer which must be given on the basis of the principles [of the mentioned philosophers] to this question is to accept the second alternative. But is it correct to accept that bodies themselves do not possess time, regardless of their continuous and gradual changes? If we suppose that all changes are instantaneous but successive, will there be no precedence and posteriority among them?

Let us assume that they consider motion to be a fixed intermediary and that the true attribution of possessing time by bodies is considered to be posterior to the occurrence of motion. This assumption implies that bodies essentially have the capacity for the attribution of this quantity which results from motion, although prior to the occurrence of motion bodies do not have this attribution actually.

Before it takes the form of a ball or cube, wax has such a capability, for it possesses extension and

volume. However, the ancient philosophers did not see any way for the influence of flux and motion in the essences of bodies, so how could they accept the attribution to such existents of an attribute which is flux and instability itself?

This is just like the case in which we want to relate line, surface and volume, even if by means of a cause, to an abstract existent which lacks extension, in a way that these qualities will really be attributed to it!

3. Another question is what kind of relation is that between motion and time? Is motion the cause for the appearance of time, as so many of the philosophers seem to hold, or is it merely that which serves as the subject of the accidental attribution of time? In any case, in what category should motion itself be included? How is its attribution to time to be determined?

It was previously indicated that some of the philosophers, such as Shaykh al- Ishraq, considered motion to be an independent category of accidents. Others considered motion to be two-sided: they considered the side related to its agent [i.e., the mover] to be in the category of that which acts and they considered the side related to its object, the moved, to be in the category of that which is acted upon.

Other philosophers have given no clear explanation. In any case, the answer to this part of the question requires greater precision. However, the application of cause and effect to motion and time may be considered a kind of development of the terminology of causality, similar to what was indicated in Lesson Thirty-Seven.

4. Another question which can be raised is that if the standard for relating time to motion is its essential instability, this is found in all motions; so why do the philosophers relate time to the rotation of the Sphere of Atlas [the highest of the celestial spheres of traditional cosmology]?

And if there were no Sphere of Atlas or it had no motion, would the other phenomena of the cosmos not possess temporal priority or posteriority? And basically, how can an accident which depends on its own subject be considered the realm for other things and phenomena?

To this question an answer may be given in the following form: The time whose appearance is related by philosophers to the highest sphere is continuous and perpetual, or in other words, absolute time. This does not contradict the claim that every specific phenomenon has its own limited and specific time.

What is meant by saying that the time associated with the celestial spheres is a realm for the occurrences of other events is nothing more than that the temporal extension of each of the events corresponds to a part of the temporal extension of the motion of the celestial sphere.

We know that 'this house is ruined from its very foundations,' for the hypothesis of the celestial spheres has been falsified and has lost its credibility.

With the raising of these questions and the attempts to answer them it has become clear that the

problem of time cannot be solved as easily as was first imagined, and the theory popular amongst the philosophers is not convincing.

Now the time has come to explain the discovery of Sadr al-Muta'allihin in this regard.

The Theory of Sadr al-Muta'allihin

With the acceptance of the positive points previously made pertaining to time, Sadr al-Muta'allihin removed the weak points and compensated for the deficiencies and shortcomings in the theories of the ancient philosophers. In conclusion, he presents a new view that solves the problem of time and the problem of substantial motion simultaneously. Truly, this must be considered one of his most valuable innovations in philosophy.

The positive points [he accepted from the ancient philosophers] are the following:

1. Time is extended and divisible and in one sense is a quantity.
2. Time and motion have a close and inseparable relation, and no motion occurs without time, as, likewise, the occurrence of time without the existence of a sort of continuous gradual motion and alteration is impossible. This is because the passage of the successive parts of time is itself a kind of gradual alteration (motion) for the time-bound thing.

The weak points he found in the views of the ancient philosophers which he tried to compensate for are the following:

1. The ancient philosophers considered time and motion to be accidents external to things, whereas in Sadr al-Muta'allihin's view they are analytic accidents (*awaridh tahlili*), and it is not the case that they may be considered to have existences removed from that of their subjects, but, rather, it is only in the realm of mental analysis that attribute and object of attribution, accident and its object are separable from each other. Otherwise, in the objective realm there is no more than one existence.
2. The philosophers confined motion to accidents, and for this reason they denied that there is an immediate relation of time to bodies, while the most basic motion must be considered motion in substances, for it is impossible that something whose whatness is without a transient extension should be characterized by a transient quantity by means of something else, as will be explained in the discussion of motion. Hence, time must be directly related to the things themselves, and it will be counted as their fourth dimension.²

It follows that according to the theory of Sadr al-Muta'allihin, time is a transient extended dimension of every corporeal existent, which is to be added to the non-transient spatial dimensions (length, width, and depth).

His answer to the first of the four questions mentioned above is that time is combined with substantial motion which is the very existence of bodies, and it is not confined to accidental motion.

His answer to the second question would be that time and motion do not have a double existence so that one can be considered the cause of the appearance of the other, and so that we may imagine that bodies are related to time by means of motion external to their essences, and so that there may be room for a question regarding the quality of this mediation.

In their whatness and substances, bodies have both a true attribution of motion and transformation and a true attribution of time and transience. Just as spatial extension is an aspect of their existence, temporal extension is another aspect of their existence, as well.

His answer to the question about the category to which motion belongs is that motion is not a whatish concept or category, but it is an intellectual concept which is abstracted from the nature of material existence, as the concept of stability is derived from the nature of the existence of immaterial things. Just as stability is not something which is objectively an accident of immaterial and stable things, neither is motion an objective accident of material existents. It is the human mind which analyzes existence into essence and attribute, accident and its object.

Likewise, his answer to the question about the quality time has, of being a realm for events, is clear, for time is not an independent realm for things and phenomena, so that it has a separate existence and temporal things are contained in it. Rather, like the volume of a body, it is an essential and internal characteristic of body, and naturally, every phenomenon will possess a specific time for itself which is considered to be an aspect of its existence.

At the most, to determine precedence and posteriority of things in relation to each other, a longer temporal extension must be taken into consideration, and the temporal position of each of them is to be determined through a comparison with other times. If the celestial spheres exist, whose temporal extension is greater than that of any other existent, and then they would be able to play this role.

If they do not exist (as in fact they do not), the very temporal extension of the entire corporeal world will be the standard for determining the temporal positions of particular phenomena, as the volume of the entire world is the standard for determining the spatial positions of particular phenomena.

The similarity and harmony of time and space become clearer with this explanation along with the profundity of the interpretation given for space.

An Explanation of Some Points

1. The expression 'instant' (an), which is employed in ordinary language for a tiny part of time, in philosophical terminology means the extremity of a fragment of time, similar to a point in relation to a line.

A line is infinitely divisible, and each part of it also will have extension, even if our minds cannot imagine extremely short extensions, so just as a point is never reached by dividing a line, each part of time, no matter how small it is assumed to be, will have an extension, and an instant will never be reached by dividing time. Therefore, the composition of time by successive instants is no more than an illusion.

2. The expression 'aeon' (dahr), which in ordinary language has the meaning of a long time, in philosophy means something like a container for immaterial things, as opposed to time (zaman) which is taken to be a container for material things.

In reality, aeon [in the sense of perpetuity] indicates the lack of temporal extension of immaterial things. Likewise, the expression 'eternity' (sarmad) is specific to the divine station which indicates the transcendence of the Sacred Divine Existence over the attributes of all created things.

Likewise, these two expressions [dahr and sarmad] are used in contrast to the relation of where (mata), and for this reason it is said that the relation of immaterial to material things is the aeon (dahr), and the relation of divine station to created things is eternity (sarmad). It is also said that God the Exalted has an eternal priority (taqaddum sarmadi) to all creatures, and that the immaterial things have a perpetual priority (taqaddum dahri) over material things.

3. The ancient philosophers, who considered time to be an implication of motion in accidents, took the substances of bodies, and even more certainly the substances of the celestial spheres, to be beyond the scope of time, although they believed in their perpetuity coextensive with time.

However, regarding substantial motion and the influence of time and its passage on the essences of material existents, these [material existents] must be considered without exception to be temporal.

4. Temporal priority and posteriority are particular to events which exist in time. They themselves will also have temporal extension. However, existents which are beyond the scope of time and which possess an existential permanence are unchanging and nontransient and will not have a temporal priority or posteriority with relation to temporal things.

Rather, in reality, their existence encompasses temporal things, and past, present and future are equal in relation to them. For the same reason, it is said that events are scattered over the surface of time, and are collected in the container of perpetuity (dahr), 'Separate things in the container of time (zaman) are collected in the container of perpetuity (dahr).'

[1.](#) A fixed intermediary is one which is applied or fixed directly to an object, as opposed to an accidental intermediary which is applied indirectly to an object because of some accidental feature or association of the object with something else.

Motion is a fixed intermediary between time and bodies if the body in motion is in direct relation to time; otherwise motion is an accidental intermediary and the relation of body to time is indirect and accidental. [Tr.]

[2.](#) It must be noted that 'the fourth dimension' in philosophical terminology is different from its meaning in the physics of Einstein's theory.

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