

Lesson 60: Further Discussion of Substantial Motion

[A Reminder of Some Points](#)

An important problem regarding substantial motion has been raised which will be reviewed at the end of this section, but prior to this, there are several points which should be borne in mind.

1. Substantial motion is really the instant to instant renewal of the existence of a substance, and bears no relation to the motion of the stars, galaxies and nebula, or to the motions of atoms and molecules or the motion of particles around the nuclei of atoms.

Even if motion within the nucleus is assumed, this will have no relation to substantial motion, because these motions are spatial and accidental, while substantial motion is basically a philosophical and intellectual notion and not a scientific or empirical one.

2. Accidents which appear to be stationary and motionless have constant imperceptible motion, for their existences are also extended in the channel of time, and until one of their temporal parts is annihilated, another part will not appear.

Therefore, the entire material world is continuously being annihilated and renewed. No stationary and immobile existent is to be found. In other words, the existence of immobility is relative and absolute immobility does not exist.

3. It is possible for a material existent to possess numerous motions at a single time, as the planet earth, like all material substances, has substantial motion, and on that basis, its existence is constantly being renewed and likewise all its attributes and accidents are continuously being renewed in existence. Furthermore, it rotates on its axis while it revolves around the sun, and it also has other motions which have been established by astrophysicists.

Likewise, it is possible for a body subordinate to another moving body to possess one or more subordinate motions. For example, as the existents on the earth are subordinate to it, they possess motion subordinate to it, even if they do not move independently, just as the earth itself has a motion subordinate to that of the solar system in the galaxy, it also has a motion in space subordinate to that of the galaxy.

Therefore, the unity of a moving thing is no reason for the unity of motion, although the individual unity of motion would be meaningless without the unity of the moving object.

4. Sometimes, numerous motions are directly attributed to a moving object, but sometimes, motion occurs in a moving object by means of another motion, without which it could not occur, as in the serpentine motion of the earth which is obtained by means of its revolutions, which is in fact an attribute of this motion, or the motion of an automobile which is attributed to the gradual increase or decrease of its speed (acceleration), or the substantial motion of bodies, which are attributed with intensity and perfection. These sorts of motions are called motions superimposed on motions.

5. As was previously said, the concept of speed is obtained through the relation between time and distance. Hence, speed is not attributed to time itself, and naturally, acceleration or the increase and decrease in speed will also have no meaning for time.

Therefore, when it is said that time has passed quickly or slowly, this is called 'psychological time' and is a loose way of speaking, and it depends on the quality of the perception of the passage of time. Such ideas may also be applied to physical time.

Types of Substantial Motion

Substantial motion, like other kinds of motion does not by itself necessitate perfection and intensity, and the arguments for its existence do not prove anything more than gradual change and renewal of the existence of a substance. Therefore, as in the case of accidental motion, three states may be posited for it, or it may be divided into three types:

1. Constant motion in which all the potential parts of the substance are equal with respect to perfection and level of existence.
2. Intensifying motion in which every assumed part is more perfect than the previous part.
3. Weakening or declining motion in which every part is weaker and more defective than its predecessor.

Intensifying and weakening motions can be considered to be composed of two motions: (1) one which occurs to the moving thing by means of another; (2) motion without an intermediary, which represents the persistence of a substance, whereas the mediated motion represents its perfection or decline.

It is like accelerating motion, whose increase or decrease in speed is considered an ascending or declining motion over spatial or another kind of motion. A motion that begins with positive acceleration and then has negative acceleration can be represented in the form of a straight line over which from the beginning a curve rises and then falls back to meet the straight line at its end point. The ascending curve represents positive acceleration, and the descending curve represents negative acceleration.

This picture has a clearer instance in the case of substances which possess two compound forms, in such a way that the underlying form possesses a constant substantial motion, whose level of existence does not become more perfect nor decline, while the higher form possesses rising and declining motion.

For example, the component elements of a plant remain in the same condition in which they began, while the vegetable form gradually becomes more perfect, and then enters the state of withering and decaying, and at last it rots and is destroyed. This is the point at which the descending curve joins the straight line.

Those who rely on some other definitions of motion have inferred the necessity of its becoming perfect, and so, in the case of substantial motion, they have also held that its intensification and becoming more perfect are necessary, even if our senses are not able to perceive this intensification. In the same way, they have considered declining or weakening motions to be accidental. In Lesson Fifty–Seven, this inference was criticized and its weakness was made clear. There is no reason to repeat it again.

The Relation between Substantial Motion and Actuality and Potentiality

As was previously explained, the potential and the actual are two abstract concepts abstracted from the relation between two successive existents, and from the persistence of the previous existent or a part of it in the following existent.

Now, regarding the fact that all material existents are constantly in a state of renewal and coming about and passing away, the question will be raised as to how the existence of the previous existent can be imagined, and how the definition of potential and actual can apply to the beginning and end of the motion.

Sometimes the answer is given that although the previous existent does not itself remain, the perfection of its existence is preserved in the following existent. It is concluded that every motion is a becoming perfect and intensification.

However, not only does this conclusion fail to agree with entified reality, but the answer itself does not solve the basic problem, for given the annihilation of the previous existent, the preservation of its perfections can mean only that the succeeding existent is more perfect than the previous one, and this reduces to the fact that the preservation of something from a potential existent in an actual existent is not

necessary.

This meaning is compatible with the assumption of the succession of numerous existents each of which is more perfect than the other, and with the interpretation of motion as a succession of actualities which is governed by the principle of 'a succession of rests.'

It might be said that according to the position of the constancy of motion, the earlier and later parts are not numerically different in actuality, but all of them are an existent with a single existence. This is contrary to the position of a succession of rests, according to which each of the temporal parts will have a specific actual existence. According to the former position, a single flowing existence is infinitely analyzable, contrary to the latter position which is based on finite unanalyzable parts.

However, the discussion is not about the potential parts of motion, but about the potential and actual as the beginnings and ends of motion which are outside the scope of the motion itself. This may be explained further by pointing out that motion has been defined as the gradual process of the emergence of the actual from the potential, such that the potential is the beginning of the motion and the actual is its end.

However, to call the earlier part of motion potential in relation to a later part is to use a specialized expression, according to which the perseverance of something from the earlier part is not considered necessary, and in this way there no longer remains room for a gradual process from potentiality to actuality and a temporal gap between them.

It seems that the application of the above definition to substantial motion is extremely difficult. It is only in the case of the compound forms whose underlying form is a previous existent that it can be considered potential in relation to the occurrence of the higher form, which is the substantial motion itself, although this higher form is the very motion, for the perseverance of a part of its motion is sufficient during the occurrence of the higher form.

However, in the case of simple and constant substantial motion the potential and actual cannot be proven to be two existents outside the scope of motion as its beginning and end.

If we assume that there is nothing but a simple body in the world, and throughout time it remains with the same constant level of existence, and that its potential parts continuously come into existence and are annihilated, is it necessary for there to exist an existent prior to or after it as its beginning or end?

Therefore, it becomes clear why it is preferable to define motion generally as 'gradual change' rather than in the other ways proposed.

The Continuity of Substantial Motion

In Lesson Twenty-Nine, the unity of the world was discussed, and different meanings which have been assumed for it were reviewed. However, the establishment of unity in none of the mentioned senses

depended on the establishment of substantial motion. Sometimes, substantial motion is used as a justification to establish the unity of the material world, and the unity of the world is even considered to be one of the conclusions of the doctrine of substantial motion.

It is said that with the establishment of substantial motion, the entire material world will be a single substantial motion, from each of whose slices a specific whatness is abstracted, and the multiplicity of material existents depends upon the numerical differences among these essences.

This subject may be interpreted to mean that the accidents and motions of a material existent are aspects and representations of the existence of a substance. In fact, their existences are derived from the existence of the substance. The material substances themselves are in fact continuous substantial motions which can be considered a single existent given their attachment to each other. On this basis it may be claimed that the entire material cosmos is a single continuous existent.

The continuity of substantial motions may be interpreted in two ways: one is the continuity of motions which are brought about successively during time, which may be called vertical continuity; and the other is the continuity of simultaneous motions which occur along with each other, which may be called horizontal continuity. Therefore, each of the two forms will be discussed separately.

Vertical Continuity

Regarding the vertical continuity of material existents and their substantial motions, it can be said that every particular material existent which may be considered is a particular substantial motion which appears in matter. For example, the existence of a plant is a substantial motion which occurs in its component elements. But its prior matter also has a substantial motion in its own turn.

Likewise, however far we go back we always reach another substantial motion, and among them there is never any gap brought about by rest. Therefore, it can be said that successive phenomena are a single substantial motion possessing numerous slices, from each of which specific whatnesses are abstracted.

This explanation is debatable in two respects. First, it is not the case that each of the particular slices possesses a single existence and a single substantial motion; rather it is possible that a compound existent may be compound in several ways and possess several substantial motions, as was established in Lesson Fifty-Four.

Second, the continuity of two successive substantial motions will have unity in a real sense when there is no distinctive boundary between them, while the transformation of one material existent to another is not like this. The reason for this is that there are various effects for each of them.

For example, vegetative effects, that is, growth and reproduction, are new effects which appear in matter, and there is no precedent for this in lifeless matter, and it begins when the vegetable form occurs in matter. Even if the vegetable form is the same as the vegetable substantial motion, it possesses a

determinate boundary which separates it from the substantial motion of the previous matter. In other words, in the extension of the substantial motion of matter there are points which are boundaries between mineral and vegetable, and from these points new substantial motions appear which can be shown by a curved line which meets the underlying straight line at two points.

Therefore, successive substantial motions are continuous linear fragments which are distinguished from one another by specific points, each of which linear fragments possesses its own characteristics.

Since these points are drawn by means of the higher lines, the underlying straight line which continues through time can be considered a single line which shows the continuous unity of the prime matter of the cosmos through time. And it is only in this sense that the unity of the material cosmos can be established.

Horizontal Continuity

Regarding the horizontal continuity of material existents and their substantial motion, it may be said that since nothingness has not made any gaps between the parts of matter, and there is no pure vacuum between them, all of them possess a unity of continuity, and this unified thing possesses a single substantial motion.

Aside from the fact that in the above explanation the continuity of substantial motion is inferred from the unity of matter, not that the unity of the cosmos is established through the unity of substantial motion, there is another problem with this view, that is, the unity of continuity for the matter of the cosmos is no reason for the unity of its forms and the unity of their substantial motions, for it is obvious that each of the forms possesses a distinctive boundary and particular effects which have no relation to the effects of the common matter. Therefore, the correctness of the doctrine of the horizontal continuity of material existents and their substantial motion is merely due to the unity and continuity of their matter.

This sort of unity and continuity is not incompatible with the multiplicity of forms and their generation and corruption.

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