

## Lesson 57: Divisions of Motion

### Introduction

We have learned that the constituents of motion exist in all motions and are invariable, and there is no difference on the basis of which different types of motion may be conceived. However, the characteristics and implications of motion are more or less different, and on the basis of these various kinds of motion can be differentiated.

For example, differences in the course of transfer are completely sensible and the different forms for it which may be imagined cause differences in the related motions. But, on the one hand, the differences in courses are not limited to a certain number of types, and on the other hand, no specific philosophical conclusions are to be obtained on the basis of such differences. Hence, a categorization of motions on the basis of differences in their courses will not be of much benefit.

Likewise, the directions of motion, even if they are generally divided into six main well known directions [will not provide for a useful categorization]. First, this division is conventional; second, the division of motion on the basis of these differences yields no philosophical fruit. Also the speeds of motion are innumerable, but these differences are inconsequential for philosophical analysis.

The division of motion on the basis of differences among its agents is really subordinate to the types of agents which have been indicated in Lesson Thirty– Eight. In general, motions may be divided into two kinds, natural and voluntary, for every intentional agent (fa‘il bil–qasd), providential agent (fa‘il bil–‘inayah), agent by agreement (fa‘il bil–ridha) and agent by self–disclosure (fa‘il bil–tajalli) is a voluntary agent.

Compelled agents (fa‘il bil–jabr) and subordinate agents (fa‘il bil–taskhir) are also considered to be particular states of voluntary agents, just as the constrained agent (fa‘il qasri) is considered to be a specific state of the natural agent.

Among all the properties of motion, the most important thing about which the philosophical discussions

of the categories of motion turn are the channel and the distance of motion. However, prior to the presentation of these discussions, it would be worthwhile to have a short discussion of a division of motion on the basis of differences in acceleration and at the same time to review the problem of the evolutionary nature of motion and its relation to acceleration.

## **Divisions of Motion on the Basis of Acceleration**

Consider an automobile the needle of whose speedometer gradually increases from zero to one hundred kilometers per hour. It goes up, then stays there for a while, and then gradually returns to zero. This automobile is transferred during the period of its motion from point A to point B, and this motion is translative and occurs in the channel of space. However, in this process, two other gradual changes are observed.

One is the change of the speed from zero to one hundred kph, and the other is the change from one hundred to zero. From a philosophical point of view, this change is also to be included in the definition of motion. It may be considered a kind of motion in quality, since acceleration and deceleration are two qualities specific to motion which are also accidents of the quantities of the speeds.

The same can be said for other types of changes or motions, so that one motion in quality may be attributed to another motion in quality from a different point of view. For example, suppose that a colorless body gradually becomes black and retains that state of blackness for a while, then its color gradually fades and it becomes colorless again.

Undoubtedly, a change in the color of a body is a motion in the category of quality. It is possible that the degree of blackening or fading is not uniform through all parts of time. For example, the speed of blackening might gradually increase and then decrease in the same manner.

This change in speed is different from the change itself in color, and for this reason it may be considered a motion which rides upon the other motion. Likewise, one may consider a constant motion to lack this sort of change, and its speed will be fixed.

Therefore, from the perspective of constancy or change in speed, motion can be divided into three kinds:

1. Constant motion without acceleration and a fixed speed.
2. Motion with increasing speed or positive acceleration.
3. Motion with decreasing speed or negative acceleration.

The existence of motion with increasing speed and of motion with decreasing speed and likewise of motion with constant speed are observed by the senses and are undeniable. One can even find instances of them by means of presentational knowledge such as changes in subjective qualities and

states which gradually increase and decrease in speed or are constant. Without a doubt, one may consider the decrease in the speed of a motion as a kind of decline, gradual weakness and imperfection in the motion.

In this way a kind of weakening and declining motion is established. It is at this point that we confront the question of whether the existence of slowing motion conflicts with some of the definitions of motion, such as, 'the gradual emergence of a thing from potentiality to actuality' or 'the first perfection of a potential existent insofar as it is potential.'

In order to answer this question, two aspects of the discussion must be distinguished, one is the perfection of the motion and the other is the perfection of the moving existent. It is possible that the moving object obtains new perfections through the course of its motion, while there are differences in the speed of these attainments. That is, in some times the speed of perfection may increase while at other times it decreases and at yet a third time this speed may be constant.

The constancy or even the decrease in the speed of attaining perfection in no way detracts from the fact that the moving object is becoming perfected. For example, a body whose rate of blackening decreases will still be ever blacker from one moment to the next, although the change in color will occur more slowly. Hence, there is no contradiction between the assumption that motion leads to the greater perfection of the moving existent and the assumption of a negative acceleration for the speed of perfection.

If someone were to claim that every motion becomes more perfect insofar as it is motion, this claim will not be compatible with the acceptance of constant motion and motion without acceleration, and it is clear that such a claim will be contrary to introspection and self-evidence. Recourse to some definitions of motion will not enable one to prove such a claim.

Furthermore, the mentioned definitions do not prove such a claim because at most what can be concluded from them is the fact that the moving existent under the influence of motion obtains new perfection and actuality, and as was indicated, the perfection of a moving thing does not conflict with the decrease of the speed of its motion.

The next question we shall take up is that of whether every motion leads to the perfection of the moving thing or not.

## **The Evolution of the Moved due to Motion**

We have learned that the perfecting of motion, in the sense of acceleration and increasing intensity, is not universal. None of the definitions of motion indicate this. However, in the sense of the perfection of the moved under the influence of motion, it is possible to infer from the two mentioned definitions that since the moved achieves a new actuality and perfection by means of motion, it is necessary that every

motion will be an intensification and lead to the perfection of the moved.

One who reasons in this way must confront a great problem: many things gradually weaken, wilt and perish. Their gradual change and motion not only fail to increase their perfections but constantly decrease their perfections, and bring them close to death and destruction. Plants and animals, after passing through the periods of growth and flourishing, enter the stage of old age and decrepitude, and their withering and declining motion begins.

In order to escape this difficulty they have sought to find an alternative in the claim that these kinds of declining and decaying motions are accompanied by the motions of other existents which are growing. For example, while an apple rots due to affliction by a worm, the worm grows in it, and the real motion is the perfecting motion of the worm, which brings about the decrease in perfection of the apple, and its wilting and rotting are its accidental motions.

Not only is there no way to prove that in all cases the declining motion of a moving thing is accompanied by the intensifying motion of another moving thing, but also one cannot ignore the gradual declining change of an existent and dismiss it as 'accidental.' Finally, this question remains, what is the philosophical significance of this gradual declining process in the wilting existent?

Reliance on the mentioned definitions in order to deny non-perfecting motions cannot explain their undeniable existence. Assuming that the purport of the definitions is not compatible with declining motion, one must raise doubts about the correctness and universality of the definitions, instead of relying on the authority of the definitions to justify something which is unacceptable. At the same time, however, it is possible to interpret these definitions in such a way that they do not imply a denial of non-perfecting motions.

As was explained in Lesson Fifty-Two, actual and potential are two concepts which are abstracted by comparing the priority of one existent to another and the inclusion in the second existent of the whole or part of the first existent. This by no means implies that the second whole is more perfect than the first.

Likewise, considering the motion to be a preparatory perfection for the attainment of a major perfection does not imply the perseverance of all of the previous perfections in the present existent, for it is possible that a requirement for motion and the attainment of a perfection whose conclusion is being considered is that the moving object must lose some of its other perfections. The perfection which is obtained as a result of motion may be equivalent to or even less than the lost perfection.

Therefore, the correspondence of Aristotle's definition to various types of motions does not imply that the perfection which is obtained through motion is ontologically superior to the perfection lost by the moving object. It cannot be concluded that the moving existent necessarily becomes more perfect, comparing its present station with its previous condition.

It is not basically necessary to depend on the concepts of actuality and potentiality and the concept of

perfection in the definition of motion, for these concepts, which themselves are in need of explanation and interpretation, cannot remove any ambiguity from the concept of motion.

Is it really acceptable to say that everything which moves from one place to another thereby becomes more perfect and attains new perfections superior to those it had possessed? Can it really be proved that the wilting and declining processes of every vegetable and animal are the results of the perfection of another existent? Perhaps it will be asked, if motion does not bring about the perfection of the moved, then why does the moved undertake the motion? What motivation could it have?

The answer is that, first, not every motion arises from the consciousness and motivation of the moved, as was mentioned regarding natural and constrained motions. Second, it is possible for a conscious existent to perform a motion in order to attain a real or imaginary pleasure, but out of negligence for the natural consequences or due to the intensity of the desire for the mentioned pleasure, this motion leads to the loss of more valuable perfections. Anyway, the irrationality and imprudence of such a motion does not imply that it is impossible.

It is possible to say that if the resultant of the motions of the world is not positive and that the result of the collection of all their motions is not the obtaining of more perfection for existents in this world, then the creation of such a world would be vain and useless.

The answer is that on the basis of divine wisdom we can prove that the creation of the world is not vain and useless and its results are wise. However, the positive character of the resultant of the motions does not imply that every motion necessarily is perfecting and causes more perfection for the moved itself.

It may be concluded that there is no reason to hold that every moving thing under the influence of motion achieves a perfection superior to its previous perfection, regarding its ontological level. Innumerable experiences show that not only is there constant motion, but also declining and weakening motion exist, in the sense that the moved gradually loses its present perfections or possesses perfections which are not superior to those it has lost.

If some definitions of motion are not compatible with such motions, they must be considered to lack universality. The perfecting character of every motion can be accepted only in the sense that the existence of the moving thing attains to something existing, which it previously lacked, although it previously may have possessed something similar or more perfect, as was mentioned regarding the relation between the potential and the actual.

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