Indivisibilty And Its Significance

Post by “Cassius” of December 28, 2019 at 12:06 PM

ce. We need more
ırsue this right now,
't analyse the issue

The structure of the atom

The reform of atomism also looks at the very structure of the atom. According to Democritus, the atom, although three-dimensional, is indivisible because of its smallness and solidity. If we set aside a report by Simplicius that attributes to Democritus the idea of atomic parts, we have no reason to question the consensus that a Democritean atom has no parts.[16] Aristotle objected, however, that because of the continuity of motion, the atom cannot escape mathematical division (*Phys.* 240b8–241a6). Even if we suppose with the atomists that it is *physically* indivisible, no extended body can as a whole instantaneously cross a spatial limit. We ought, therefore, to be able to distinguish those parts of the atom which have moved past a certain point and those which have not. For that reason, according to Aristotle, an indivisible ‘cannot move nor change in any way’ (*Phys.* 240b31). Everything which moves is necessarily divisible, except those accidentally in movement as part of a larger body which is itself in movement.

This is a strong objection: the early atomists make the existence of movement – at least of atomic movement – an unquestionable principle. So Aristotle dismantles the very basis of their physics. It is true that Aristotle conceives of locomotion as the traversal of a spatial medium, while the first atomists seem not to have given a clear account of the status of the space in which it takes place. Their void is essentially the negative interval which separates atoms, not the place *in which* atoms move. But Epicurean void does play the role of an empty space. It is the empty space (*chōra*) in which atoms move.[17] That is why, in order to think of movement, we have to make the (strictly false) supposition that there is a ‘top’ and a ‘bottom’ even though the universe is infinite (*Ep. Hdt.* 60).

The structure of the atom

The reform of atomism also looks at the very structure of the atom. According to Democritus, the atom, although three-dimensional, is indivisible because of its smallness and solidity. If we set aside a report by Simplicius that attributes to Democritus the idea of atomic parts, we have no reason to question the consensus that a Democritean atom has no parts.[16] Aristotle objected, however, that because of the continuity of motion, the atom cannot escape mathematical division (*Phys.* 240b8–241a6). Even if we suppose with the atomists that it is *physically* indivisible, no extended body can as a whole instantaneously cross a spatial limit. We ought, therefore, to be able to distinguish those parts of the atom which have moved past a certain point and those which have not. For that reason, according to Aristotle, an indivisible 'cannot move nor change in any way' (*Phys.* 240b31). Everything which moves is necessarily divisible, except those accidentally in movement as part of a larger body which is itself in movement.

This is a strong objection: the early atomists make the existence of movement – at least of atomic movement – an unquestionable principle. So Aristotle dismantles the very basis of their physics. It is true that Aristotle conceives of locomotion as the traversal of a spatial medium, while the first atomists seem not to have given a clear account of the status of the space in which it takes place. Their void is essentially the negative interval which separates atoms, not the place *in which* atoms move. But Epicurean void does play the role of an empty space. It is the empty space (*chōra*) in which atoms move.[17] That is why, in order to think of movement, we have to make the (strictly false) supposition that there is a 'top' and a 'bottom' even though the universe is infinite (*Ep. Hdt.* 60).