

Chapter 1

Lectio I

[1] After the Philosopher, in the preceding books, set out what motion is in itself, and what those things are that are consequent upon it, and what its parts are, here he begins his investigation of motion in comparison with movers and things moved. His discussion of these points is divided into two parts. In the first part, he demonstrates the existence of a first motion and a first mover. In the second part, he investigates the nature of the first motion and the first mover, in Book 8, where he says, “Whether at some point in time ...” (250b11). The first part of his discussion is itself divided into two subparts. In the first of these, he demonstrates the existence of the first motion and the first mover. And because those things which are of the same order are mutually comparable, in the second subpart he investigates the comparison of the various motions to each other, beginning where he says, “But someone certainly might doubt...” (248a10) In regards to the first point, he does three things. First, he indicates those things which will be needed for proving the proposition. Second, he proves the proposition, where he says “Although all that which is moved ...” (242a16) Thirdly, he demonstrates that which he had supposed, where he says “But the first thing in motion...” (243a3).

[2] He first states, therefore, what he wishes to prove: that everything that is moved, is moved by some other thing. This is certainly obvious in the case of some beings, for there exist those which do not have their own principle of motion within them, but their principle of motion is from outside of them, just as in those cases where [naturally moving things] are moved violently. If, therefore, there is anything which does not having its own principle of motion within itself, but rather its principle of motion is extrinsic, it is obvious that it is moved by something else.

If, however, there is a mobile which has its own principle of motion within itself, it might be

[1] Postquam philosophus in praecedentibus libris determinavit de motu secundum se, et de consequentibus ad ipsum, et de partibus eius, hic incipit determinare de motu per comparationem ad motores et mobilia. Et dividitur in partes duas. In prima ostendit esse primum motum et primum motorem. In secunda inquirat qualis sit motus primus et primus motor; et hoc in octavo libro, ibi: utrum autem factus sit aliquando et cetera. Prima autem pars dividitur in partes duas. In prima parte ostendit esse primum motum et primum motorem. Et quia ea quae sunt unius ordinis, habent aliquam comparationem ad invicem, ideo in secunda parte determinat de comparatione motuum ad invicem, ibi: dubitabit autem utique et cetera. Circa primum tria facit: primo praemittit quoddam quo indiget ad propositum ostendendum; secundo ostendit propositum, ibi: quoniam autem omne quod movetur etc.; tertio manifestat quoddam quod supposuerat, ibi: primum autem movens et cetera.

[2] Proponit ergo primo quod necesse est omne quod movetur, ab aliquo alio moveri. Quod quidem in aliquibus est manifestum. Sunt enim quaedam quae non habent in seipsis principium sui motus, sed principium motus ipsorum est ab extrinseco, sicut in his quae per violentiam moventur. Si ergo aliquid sit quod non habeat in seipso principium sui motus, sed principium sui motus est ab extrinseco, manifestum est quod ab alio movetur. Si vero sit aliquod mobile quod habeat in seipso principium sui motus, circa hoc potest esse dubium an ab alio moveatur. Et ideo circa hoc instat, ad ostendendum quod ab alio movetur. Si ergo aliquid tale ponatur non moveri ab alio, accipiat mobile ab, cui quidem moveri conveniat secundum se et primo, non autem ex eo quod aliqua pars eius movetur. Sic enim non moveretur secundum se, sed secundum partem; oportet autem, si aliquid movet seipsum non motum ab altero, quod sit primo et per se motum; sicut si aliquid est calidum non ab alio, oportet quod sit primo et per se calidum. Hoc ergo dato, procedit ad propositum ostendendum dupliciter: primo quidem excludendo illud, unde maxime videri posset quod aliquid non ab alio moveatur; secundo directe ostendendo quod nihil potest a seipso moveri, ibi: amplius quod a seipso movetur et cetera. Id autem ex quo maxime videtur quod aliquid non moveatur ab alio, est quia non movetur ab aliquo exteriori, sed ab interiori principio. Dicit ergo primo, quod opinari quod ab moveatur a seipso propter hoc quod totum movetur, et non movetur ab aliquo exteriori, simile est ac si aliquis diceret quod mobile, cuius una pars movetur et alia movet, moveat seipsum, propter hoc quod non discernitur quae pars sit movens, et quae sit mota; sicut si huiusmodi mobilis quod est dez, pars quae est de, moveat partem quae est ez, et non videatur quae pars earum sit movens et quae sit mota. Vult autem per primum mobile ab, quod totum movetur et a principio interiori movente, intelligi aliquod corpus animatum, quod totum movetur ab anima: per mobile autem dez vult intelligi corpus aliquod quod non totum movetur, sed una pars eius corporalis est movens, et alia mota; in quo quidem mobili manifestum est quod id quod movetur, ab alio movetur. Et ex hoc vult simile ostendere de corpore animato, quod videtur movere seipsum. Hoc enim ei convenit in quantum una pars aliam movet, scilicet anima corpus, ut in octavo plenius ostendatur.

doubted whether this mobile would be moved by another. And indeed Aristotle intends to prove that even this is moved by another. For if someone were to propose that such a thing were not moved by another, it would mean taking it as the mobile AB, to which moving belongs in virtue of itself and in the first place, and not as that which is moved by some part of itself. For [being moved by a part] is not being moved in virtue of itself, but in virtue of a part. It is necessary, however, if something moves itself, that it not be moved by another, such that it be moved by itself and in the first place. For instance, if something is hot, but not by another, it must be hot in the first place and in virtue of itself.

Given this, Aristotle proceeds in two stages to prove the proposition. First, he excludes that case where it would maximally seem that something might not be moved by another; second, he directly shows that nothing can be moved by itself, where he says, “Moreover, that which is moved by itself...” (242a1). That which maximally appears to be a case of something not being moved by another, is when a mobile is not being moved by an exterior principle, but by an interior principle. He states this case first, because the case of the mobile being moved by itself, with the whole being moved, and not by anything exterior, is similar to the case where a mobile, being moved in one part and moving in another part, might be said to be moving itself, because the part that is moving is not discernible from that which is being moved. Just as, for example, if a certain mobile DEZ had one part DE which was moving EZ, and it were not discernible which part of the whole was moving and which was being moved. But Aristotle is referring, [in speaking of] the first mobile AB, to some living body, because the whole is moved by the soul. In the case of DEZ, he is speaking of a some body which is not being moved as a whole, but some part of the body is moving, and another is being moved. In the case of such a mobile, it is clear that that which is being moved, is being moved by another. And with this simile, he wishes to show that the living body, which appears to be moving itself, [in fact does not]. For this is necessary whenever one part moves another, as in the case of the soul moving the body, as will be fully proven in Book VIII.

[3] Beginning where he says, “Moreover, that which...” (242a1), he proves directly that all that is moved, is moved by another, using the following argument. Everything which is moved by itself, does not rest from its motion due to the resting of any other mobile. And he states this as though it were obvious on its own terms. But from this premise, he concludes further that if some mobile rests due to the resting of another, that that mobile was being moved by the other. Given this supposition, he concludes that it is necessary that all that is moved, is moved by another.

In order to prove that this follows from the premises, he proceeds as follows. That mobile which we supposed to be moved by itself, i.e. mobile AB, must be divisible, because every mobile being is divisible, as was proven above. Because it is divisible, nothing impossible will result from our dividing it. Let it be divided, then, at point C, such that one part of it will be BC, and the other part AC. If BC is part of that which is AB, it must be the case that if BC rests, all of AB must rest. Therefore if the whole does not rest, while part is resting, it will be the case that the entirety moves, and that one part rests. But because one part was said to rest, it will not be possible to say that the

[3] Deinde cum dicit: amplius quod etc., ostendit directe quod omne quod movetur ab alio movetur, tali ratione. Omne quod movetur a seipso, non quiescit a suo motu per quietem cuiuscumque alterius mobilis. Et hoc accipit quasi per se notum. Ex hoc autem ulterius concludit, quod si aliquod mobile quiescit ad quietem alterius, quod hoc movetur ab altero. Hoc autem supposito, concludit quod necesse est omne quod movetur ab aliquo alio moveri. Et quod hoc sequatur ex praemissis, sic probat. Illud mobile quod supposuimus a seipso moveri, scilicet ab, oportet divisibile esse, quia omne quod movetur est divisibile, ut supra probatum est. Quia ergo divisibile est, nullum inconveniens sequitur si dividatur. Dividatur ergo in puncto c, ita quod una pars eius sit bc, et alia ac. Si ergo bc est pars eius quod est ab, necesse est quod quiescente bc parte, quiescat totum ab. Si ergo non quiescat totum, quiescente parte, accipiatur quod totum moveatur, et una pars quiescat: sed quia una pars ponitur quiescere, non poterit poni totum moveri, nisi ratione alterius partis. Sic ergo bc quiescente, quod est una pars, movetur ac, quod est alia pars. Sed nullum totum cuius una sola pars movetur, movetur primo et per se. Non ergo movebitur ab primo et per se, quod erat suppositum. Ergo oportet quod bc quiescente, quiescat totum ab. Et sic illud quod movetur pausabit, idest desinet moveri, ad quietem alterius. Sed supra habitum est, quod si aliquid quiescit et desinet moveri ad quietem alterius, hoc ab altero movetur. Ergo ab altero movetur. Et eadem ratio est de quolibet alio mobili: quia omne quod movetur est divisibile, et eadem ratione oportet quod quiescente parte, quiescat totum. Manifestum est ergo quod omne quod movetur, ab aliquo alio movetur.

whole is being moved, unless by reason of differing parts, so that BC would be resting, while AC, another part, were being moved. But no whole, of which only one part is being moved, is being moved in the first place and in virtue of itself. Thus, AB will not be being moved in the first place and in virtue of itself, as was supposed. Thus it must be the case that if BC rests, all of AB rests too. And thusly that which is being moved will pause, i.e. cease to be moved, when another rests. But above it was said that if something rests and ceases to be moved upon another thing resting, that thing is moved by another. Thus, AB is moved by another. And the same argument serves for any other mobile, because all that which moves is divisible, and the same argument requires that that which rests in a part, rests as a whole. Thus is it demonstrated that all that is moved, is moved by another.

[4] There are multiple objections to this demonstration of Aristotle. Galen, for one, objects to what Aristotle says, i.e. that if only one part of the mobile is moved, and the other parts rest, then the whole cannot move in virtue of itself [*per se*]. He says this is false, because that which is moving according to a part, is moving in virtue of itself. But Galen was deceived by a misunderstanding of what ‘in virtue of itself’ means. For ‘in virtue of itself,’ sometimes is taken as merely meaning that which is opposed to ‘accidentally,’ and in this sense, that which is moved according to a part is nonetheless moved ‘in virtue of itself,’ as Galen thought. However, sometimes it means that which is opposed to that which is by accident, and that which exists as a part; and this is said not only to be ‘in virtue of itself’ but also ‘in the first place’ [*primo*]. And Aristotle is using ‘in virtue of itself’ in this second sense here. This is obvious from his conclusion that “AB is not therefore moved in virtue of itself,” and he emphasizes, “but it was first conceded to be moving by itself [*per seipsum*].”

[5] The objection of Avicenna is more weighty, who objects to Aristotle’s argument by saying that it proceeds from an impossible supposition, from which an impossible conclusion follows, and not from the supposition that something is moved by itself. For if we suppose that some mobile is moved by itself ‘in the first place’ and ‘in virtue of itself,’ it will be natural for it to be moved both as a whole and according to its parts. If, therefore, it is supposed that in some part of itself it is resting, this will be an impossible supposition. And from this position follows the impossible conclusion that Aristotle claims to prove, i.e. that the whole is moved, but not in the first place and in virtue of itself, as was posited. Someone might meet this objection by saying that it would be impossible for a part to rest according to a determinate nature, but insofar as it is a body of such-and-such a species, e.g. heaven or fire, it would not therefore be impossible, if the common notion

[4] Contra istam autem Aristotelis probationem multipliciter obiicitur. Obiicit enim Galenus contra hoc quod dicit Aristoteles, quod si una tantum pars eius mobilis moveatur et reliqua quiescat, quod totum non per se movetur: dicens hoc esse falsum; quia ea quae moventur secundum partem, per se moventur. Sed deceptus est Galenus ex aequivocatione eius quod est per se. Per se enim quandoque sumitur secundum quod opponitur ei tantum quod est per accidens; et sic quod movetur secundum partem, movetur per se, ut Galenus intellexit. Quandoque vero sumitur secundum quod opponitur simul ei quod est per accidens, et ei quod est secundum partem; et hoc dicitur non solum per se, sed etiam primo. Et sic accipit per se Aristoteles hic: quod patet quia, cum conclusisset non ergo movetur per se ab, subiungit: sed concessum est per seipsum moveri primum.

[5] Sed magis urget obiectio Avicennae, qui obiicit contra hanc rationem, dicens eam procedere ex suppositione impossibili, ex quo sequitur impossibile, et non ex eo quod ponitur aliquid a seipso moveri. Si enim ponamus aliquod mobile a seipso moveri primo et per se, naturale est ei quod moveatur et secundum totum et secundum partes. Si ergo ponatur quod aliqua pars eius quiescat, erit positio impossibilis. Et ex hac positione sequitur impossibile ad quod Aristoteles inducit, scilicet quod totum moveatur non primo et per se, ut positum est. Huic autem obiectio posset aliquis obviare dicendo, quod licet impossibile sit partem quiescere secundum determinatam naturam, in quantum est corpus talis speciei, ut puta caelum vel ignis, non est tamen impossibile, si ratio communis corporis consideretur: quia corpus, in quantum corpus, non prohibetur quiescere vel moveri. Sed hanc responsionem excludit Avicenna dupliciter. Primo quidem quia pari ratione posset dici de toto corpore, quod non prohibetur quiescere ex hoc quod corpus est, sicut dicitur de parte; et ita superfluum fuit assumere ad probationem propositi divisionem mobilis et quietem partis. Secundo quia aliqua propositio simpliciter redditur impossibilis, si praedicatum repugnet subiecto ratione differentiae specificae, quamvis non repugnet ei ratione generis. Est enim impossibile quod homo sit irrationalis, quamvis non impediatur irrationalis esse ex hoc quod est animal. Sic igitur simpliciter impossibile est quod pars corporis moventis seipsum quiescat, quia hoc est contra rationem talis corporis, licet non sit contra rationem communem corporis.

of body were considered. For body, as body, does not prohibit resting or being moved.

This argument is excluded by Avicenna in two ways. First, because the same notion can be said of the entire body, which would not prohibit resting on the basis of what body is, as when said of the part. Thus, it would be superfluous to assume, for the purpose of proving the proposition, a division of the mobile and the resting of a part. Secondly, because certain propositions result in an impossibility, simpliciter, if the predicate is incompatible with the subject due to the notion of its specific difference, although it is not incompatible with it due to the notion of the genus. For it is impossible that man be irrational, although irrationality is not impeded on the basis of animality. And thus it is impossible simpliciter that a part of a body moving by itself should rest, because this is against the notion of such a body, although not against the common notion of body.

[6] Having rejected this response, Averroes resolves the problem in another way. He says that a certain conditional may be true, whose antecedent is impossible and its consequent impossible, e.g. if a man is a donkey, he will be an irrational animal. It must therefore be conceded that, if some mobile is posited as moving itself, that either all or part of it would be resting; in the same way, it is impossible that fire not be hot, due to the fact that it is itself the cause of heat. And therefore this conditional is true: if a mobile that moves itself rests, the whole rests. But Aristotle, if he had considered his words carefully, would never have used ‘rest in a part,’ unless this phrase were taken as having the force of a conditional proposition. For he does not say that BC would rest, but rather that it is necessary that, if BC rests, that AB be resting; and again, if a part is resting, the whole rests. And from this true conditional, the proposition of Aristotle is demonstrated.

But Averroes says that this demonstration is not of the category of ‘demonstrations simpliciter,’ but rather of the category of demonstrations that are said to be ‘demonstrations based on effects’ [*demonstrationes signi*] or ‘demonstrations of the fact’ [*demonstrationes quia*], in which these types of conditionals are used. This is the solution which is necessary for that which is said of the truth of a conditional: but it seems necessary to say that it is not a demonstration of the fact, but a demonstration of the reasoned fact [*demonstratio propter quid*], for it contains the cause by which it is impossible that any mobile move itself. As evidence of this, it must be known that saying that something moves itself is the same as saying that it is its own cause of motion. But that which itself is the cause of something, must belong to it in the first place; for that which is first in any genus, is cause of the things which are posterior within it. Thus first, which is the cause of heat for itself and other things, is first among hot things.

Aristotle, however, in Book 6, shows that in motion there is no firstness, either in temporal part, in part of magnitude, or in a part of the mobile, according to the divisibility of these things. But there cannot be a first, whose motion does not depend on something prior: for the motion of the

[6] Hac igitur responsione remota, Averroes aliter solvit: et dicit quod aliqua conditionalis potest esse vera, cuius antecedens est impossibile et consequens impossibile, sicut ista: si homo est asinus, est animal irrationale. Concedendum est ergo quod impossibile est quod, si aliquod mobile ponitur movere seipsum, quod vel totum vel pars eius quiescat; sicut impossibile est ignem non esse calidum, propter hoc quod est sibi ipsi causa caloris. Unde haec conditionalis est vera: si mobilis moventis seipsum pars quiescit, totum quiescit. Aristoteles autem, si verba eius diligenter considerentur, nunquam utitur quiete partis, nisi per locutionem habentem vim conditionalis propositionis. Non enim dicit quiescat bc, sed necesse est, bc quiescente, quiescere ab; et iterum, quiescente parte, quiescit totum: et ex hac conditionalis vera, Aristoteles propositum demonstrat. Sed dicit Averroes quod ista demonstratio non est de genere demonstrationum simpliciter, sed de genere demonstrationum quae dicuntur demonstrationes signi, vel demonstrationes quia, in quibus est usus talium conditionalium. Est autem haec solutio conveniens quantum ad hoc quod dicit de veritate conditionalis: sed videtur dicendum quod non sit demonstratio quia, sed propter quid; continet enim causam quare impossibile est aliquod mobile movere seipsum. Ad cuius evidentiam sciendum est, quod aliquod movere seipsum nihil aliud est, quam esse sibi causa motus. Quod autem est sibi causa alicuius, oportet quod primo ei conveniat; quia quod est primum in quolibet genere, est causa eorum quae sunt post. Unde ignis, qui sibi et aliis est causa caloris, est primum calidum. Ostendit autem Aristoteles in sexto, quod in motu non invenitur primum, neque ex parte temporis, neque ex parte magnitudinis, neque etiam ex parte mobilis, propter horum divisibilitatem. Non ergo potest inveniri primum, cuius motus non dependeat ab aliquo priori: motus enim totius dependet a motibus partium, et dividitur in eos, ut in sexto probatum est. Sic ergo ostendit Aristoteles causam quare nullum mobile movet seipsum; quia non potest esse primum mobile, cuius motus non dependeat a partibus: sicut si ostenderem quod nullum divisibile potest esse primum ens, quia esse cuiuslibet divisibilis dependet a partibus: ut sic haec conditionalis sit vera: si pars non movetur, totum non movetur, sicut haec conditionalis est vera: si pars non est, totum non est.

whole depends on the motion of the parts, and is divided amongst them, as was proved in Book 6. In this way, therefore, Aristotle demonstrates the cause by which no mobile moves itself: because there cannot be a first mobile, whose motion does not depend on its parts. This is just as would be the case if one were to demonstrate that no divisible could be the first being, because the existence of any divisible depends on the parts. In this way the conditional is made true: if the part is not moved, the whole is not moved. In the same way, the following conditional is true: if the part does not exist, the whole does not exist.

[7] Based on this, the Platonists, who posited that something moved itself, also said that no corporeal or divisible being might move itself; rather, self-movement belongs only to a spiritual substance, which understands itself and loves itself. Universally, they called all operations ‘motion,’ and indeed Aristotle called this sort of operation, i.e. sensing and thinking, motion as well, in the third book of the *De anima*, insofar as motion is an act of a perfect [kind]. But here he is speaking of motion insofar as it is an act of an imperfect kind, i.e. existing in potency, and according to this type of motion, an indivisible being will not move, as was proven in Book 6, and which is here assumed. And thus it is apparent that Aristotle, who states that all that moves is moved by something else, does not differ in substance from Plato, who posited something that moves itself, but rather the difference is merely verbal.

Lectio II

[1] After the Philosopher proved that all that which is moved, is moved by something else, he proceeds to demonstrate his principal proposition, i.e. that there exists a first motion and a first mover. And in this regard, he does two things: first, he sets out that which he intends to prove, and second, he proves the proposition, beginning where he says, “For if it does not exist, but [motion] proceeds to infinity...” (242a22) He thus states first, that since it has been universally proven that everything that is moved, is moved by something else, it is necessary that this also be the case in local motion, i.e. such that all that moves in place, is moved by something else. But he applies that which was demonstrated above especially to local motion, because local motion is the first of the motions, as will be shown in Book 8; thus, according to this motion, he proceeds here to demonstrate [the existence of] a first mover. Therefore let us take something that is moved in place: this will be moved by another; in turn, this other mover may be moved by another, or not. If it is not moved, the goal will have been reached, i.e. something which is a non-moved mover, which is the property of the first mover. But if this other mover is also moved, it will be necessary that it be moved by another mover. But this cannot proceed to infinity, but must stop somewhere. There will therefore be some first mover, which will be the first cause of motion, that is, something which

[7] Unde et Platonici, qui posuerunt aliqua movere seipsa, dixerunt quod nullum corporeum aut divisibile movet seipsum; sed movere seipsum est tantummodo substantiae spiritualis, quae intelligit seipsam et amat seipsam: universaliter omnes operationes motus appellando; quia et huiusmodi operationes, scilicet sentire et intelligere, etiam Aristoteles in tertio de anima nominat motum, secundum quod motus est actus perfecti. Sed hic loquitur de motu secundum quod est actus imperfecti, idest existentis in potentia, secundum quem motum indivisibile non movetur, ut in sexto probatum est, et hic assumitur. Et sic patet quod Aristoteles, ponens omne quod movetur ab alio moveri, a Platone, qui posuit aliqua movere seipsa, non dissentit in sententia, sed solum in verbis.

[1] Postquam ostendit philosophus quod omne quod movetur, movetur ab alio, hic accedit ad principale propositum ostendendum, scilicet quod sit primus motus et primus motor. Et circa hoc duo facit: primo proponit quod intendit; secundo probat propositum, ibi: si enim non est, sed in infinitum procedet et cetera. Dicit ergo primo, quod cum ostensum sit universaliter, quod omne quod movetur ab aliquo alio movetur, necesse est hoc etiam verum esse in motu locali, scilicet ut omne quod movetur in loco, ab altero moveatur. Applicat autem specialiter ad motum localem quod supra universaliter demonstratum est, quia motus localis est primus motuum, ut in octavo ostenditur; et ideo secundum hunc motum procedit hic ad demonstrandum primum motorem. Accipiatur igitur aliquid quod movetur secundum locum; hoc movetur ab altero; aut ergo illud alterum movetur, aut non. Si non movetur, habetur propositum, scilicet quod aliquid sit movens immobile; quod est proprietas primi moventis. Si autem et ipsum movens movetur, oportet quod moveatur ab altero movente; et hoc iterum movens, si et ipsum movetur, movetur ab altero. Sed hoc non potest procedere in infinitum, sed oportet in aliquo stare. Erit ergo aliquid primum movens, quod erit prima causa motus: ita scilicet quod ipsum non movetur, sed movet alia.

itself is not moved, but moves others.

[2] Beginning where he says, “For if not...” (242a22), he proves the proposition that he had [earlier] supposed. And in this regard he does three things: first he proposes a proof; second, he shows that the proof is insufficient, beginning where he says “Thus it seems to be shown...” (242b20); third, he adds that certain thing that will make the reasoning solid, where he says “But if that which is moved...” (242b25). Thus he first says that if it is not conceded that there is a first cause of motion, given that all that which is moved is moved by another, it will follow that there will be a regression to infinity in movers and things moved. And this he shows to be impossible.

For let A be a certain thing which is being moved according to location, and let it be moved by B, B by C, C by D, and let the series proceed to infinity. It will be clear, then, that given that something is moving due to that which is being moved, at the same time the mover and the mobile itself are being moved, just as when one’s hand moves a stick, and both the hand and the stick are moved at the same time. In this way, thus, B is moved when A is moved, and for the same reason, when B is moved, C is simultaneously moved, and when C is moved, D is moved simultaneously. And thus simultaneously and at the same time there is motion of A itself and of all the others, and there will be able to be taken separately a motion of any of these infinite things. And although each one of these mobiles will be moved by some one of the movers, it is not therefore the case that one is moved by all of them, but one [is moved by] one.

Still, while there may be an infinity of movers and mobiles, nevertheless for any one of these mobiles, the motion will be one in number. And while it is possible that all the motions be infinite in number, they are not nevertheless infinite in the last one, i.e. due to lacking a last motion, but some one motion will be final, there being a determinate final motion. And because the motion

[2] Deinde cum dicit: si enim non etc., probat quod supposuerat. Et circa hoc tria facit: primo inducit probationem; secundo ostendit probationem esse insufficientem, ibi: sic igitur videtur etc.; tertio supplet quoddam per quod ratio fortificatur, ibi: sed si id quod movetur et cetera. Dicit ergo primo, quod si hoc non concedatur, quod sit aliqua prima causa motus, cum omne quod movetur ab alio moveatur, sequitur quod procedatur in infinitum in moventibus et motis. Et hoc ostendit esse impossibile. Sit enim a quoddam quod movetur secundum locum, et moveatur ab ipso b; b vero a c, c vero a d; et sic procedatur in infinitum ascendendo. Manifestum est autem, quod cum aliquid movet ex eo quod movetur, simul movetur movens et ipsum mobile; sicut si manus suo motu movet baculum, simul movetur manus et baculus. Sic ergo simul movetur b quando movetur a; et eadem ratione quando movetur b simul movetur c, et cum movetur c simul movetur d. Sic ergo simul et in eodem tempore est motus ipsius a et omnium aliorum; et poterit seorsum accipi motus uniuscuiusque horum infinitorum. Et quamvis unumquodque horum mobilium moveatur ab unoquoque moventium, non ita quod unum ab omnibus, sed singula a singulis; nihilominus tamen, licet sint infinita moventia et mobilia, tamen uniuscuiusque mobilium motus est unus numero. Et licet omnes motus sint infiniti numero, non tamen sunt infiniti in ultimis, idest per privationem ultimarum, sed uniuscuiusque motus est finitus, habens determinata ultima. Et quod uniuscuiusque infinitorum mobilium motus sit unus numero et finitus, probat quia, cum omne quod movetur moveatur inter duos terminos, ex quodam scilicet in quiddam, necesse est quod secundum diversum modum identitatis terminorum, etiam ipse motus sit diversimode unus, scilicet aut numero aut specie aut genere. Numero quidem est idem motus, qui est ex eodem termino a quo in idem numero sicut in terminum ad quem; ita tamen quod sit etiam in eodem numero tempore; et cum hoc oportet quod sit eiusdem mobilis numero. Et ad exponendum quod dixerat, subiungit quod motus numero unus est ex eodem in idem, sicut ex hoc albo, quod significat unum numero, in hoc nigro, quod etiam nominat aliquid idem numero, et secundum hoc tempus determinatum, quod etiam est unum numero: quia si esset motus secundum aliud tempus, licet aequale, non esset numero unus, sed specie tantum. Sed motus est unus genere, qui est in eodem praedicamento, vel substantiae vel cuiuscumque alterius generis; sicut omnis generatio substantiae est eadem genere, et omnis alteratio similiter. Sed motus est specie unus, qui est ex eodem secundum speciem in idem secundum speciem; sicut omnis denigratio, quae est ex albo in nigro, est eadem specie, et omnis depravatio, quae est ex bono in malum. Et haec etiam in quinto dicta sunt. His igitur duobus suppositis, scilicet quod simul movetur et movens et motum, et quod potest accipi motus uniuscuiusque mobilium tanquam finitus et unus; accipiatur motus huius mobilis quod est a, et sit e; et motus ipsius b sit z, et motus cd et omnium consequentium sit it. Tempus autem in quo movetur a, sit k. Sed quia motus ipsius a est determinatus, idest finitus, etiam tempus in quo est iste motus, scilicet k, est determinatum et non infinitum: quia sicut in sexto ostensum est, finitum et infinitum simul invenitur in tempore et motu. Ex dictis autem patet, quod in eodem tempore in quo movetur a, movetur et b, et omnia alia: ergo motus omnium, qui est ezit, est in tempore finito. Sed iste motus est infinitus, cum sit infinitorum. Ergo sequetur quod motus infinitus sit in tempore finito; quod est impossibile. Hoc autem ideo sequitur, quia in quo tempore movetur a, moventur omnia alia, quae sunt infinita numero. Nec differt quantum ad propositum pertinet, utrum motus omnium mobilium sit aequalis velocitatis, aut inferiora mobilia tardius moveantur et in maiori tempore; quia omnino sequetur quod motus infinitus sit in tempore finito, quia unumquodque mobilium necesse est quod habeat velocitatem et tarditatem finitam. Hoc autem est impossibile, scilicet motum infinitum esse in tempore finito. Ergo et primum est impossibile, scilicet quod procedatur in mobilibus et moventibus in infinitum.

of any one of these infinite mobiles will be one in number and finite, this proves that, since all that is moved, is moved between two terms, from a certain one to a certain other one, it is necessary that, according to the distinct mode of the identities of the terms, that the motion itself be one in a determined manner, i.e. either in number, or in species, or in genus. Certainly the motion itself is one in number, which is the same in number, beginning at the same terminus a quo, as it is at the terminus ad quem; it must also be the case that the time is the same in number, and this in turn requires that the mobile be one in number as well. And in order to explain his point, [Aristotle] emphasizes that a motion which is one in number is from the same thing to the same thing—e.g. from this white [thing] ('this' meaning one in number) to this black thing—for something is said also to be the 'same in number,' and according to this determined time, because it is also one in number. For if a motion were of a different time, even of an equal time, it would not be one in number, but only one in species. But motion is one in genus, which is to say, it is in the same category, whether substance or any other genus, just as all generation of substance is the same in genus, and all alteration is [one in genus] in a similar way. Motion is one in species, i.e. it is from the same thing according to species to the same thing according to species; in this way, all blackening, which is [the motion from] white to black, is of the same species, and all depravation, which is from good to evil. And this was also stated in Book 5.

Therefore, these two things are taken as suppositions, i.e. that the mover and the mobile are moved at the same time, and that it can be accepted that the motion of any one of the mobiles by itself will be finite and one. On this basis, let there be taken a motion of mobile A, and let the motion be called E; and let the motion of B be Z; and let the motion of CD and the others that follows be called IT. The time, then, in which A moves will be called K, and it will be determinate and not infinite—as was shown in Book 6, the finite and the infinite occur simultaneously in time and in motion. From the premises given, it is obvious that in the same time during which A is moved, B will also be moved, and all the others. Therefore the motion of all of the mobiles, i.e. EZIT, occurs in finite time. But this motion is infinite, since it is of an infinite number of mobiles. Therefore it follows that an infinite motion will occur in finite time, which is impossible. But this will follow as stated, because in the time in which A is moved, the others all are moved, which are infinite in number.

The proof will not be affected by issues such as whether the motion of all the mobiles will be of equal velocity, or whether the inferior mobiles move more slowly and in greater time. In any of these cases, it will follow that an infinite motion will be in finite time, because any one of the mobiles must have finite velocity and slowness. But this is impossible, because it requires that there be an infinite motion in finite time. Thus, the precedent is also impossible, that is, that the series of movers and mobiles go on to infinity.

[3] Next, beginning where he says, "Thus it seems to be shown..." (242b20), he shows that the preceding reasoning is not sufficient to provide a proof. He says that, by the reasoning given above, it appears that the principal proposition is demonstrated, i.e. that it is not possible to proceed to infinity in movers and mobiles. Nevertheless, the reasoning does not truly demonstrate the conclusion, because nothing impossible results from the premises [i.e. there is no *reductio ad absurdum*]. For it happens to be possible that in a finite time there be infinite motion, provided that it not be one and the same, but rather one and another motion, as would be the case if the things being moved are themselves infinite [in number]. For nothing prohibits there being infinite things

[3] Deinde cum dicit: sic igitur etc., ostendit quod praecedens ratio non efficaciter concludit. Et dicit quod praedicto modo videtur demonstrari principale propositum, scilicet quod non in infinitum procedatur in moventibus et motis; non tamen efficaciter demonstratur, quia nullum inconveniens accidit ex praemissis. Contingens est enim et possibile, quod in tempore finito sit motus infinitus; ita tamen quod non sit unus et idem, sed alius et alius; in quantum scilicet infinita sunt quae moventur. Nihil enim prohibet infinita in tempore finito moveri simul. Et hoc concludebat ratio praedicta. Erant enim mobilia infinita diversa, et sic motus eorum erant diversi: quia ad unitatem motus non solum requiritur unitas temporis et termini, sed etiam unitas mobilis, ut in quinto dictum est.

that move simultaneously in a finite time. And yet this is what the former argument concluded. For there were an infinite number of diverse mobiles, and in this way their motions were diverse, because for the unity of motion, it not only necessary that there being a unity of time and term, but also unity of the mobile, as was shown in Book 5.

[4] Beginning where he says, “But if that which is moved...” (242b25), he shows how the preceding argument can be made valid. First, he shows how it can be made valid by the supposition of a fact; second, he shows how it can be made valid simpliciter, beginning at “But it would make no difference...” (242b30). Thus he first says that that which is moved in place and bodily, in the first place and immediately, by another moving mobile, must be touching [the other mobile], as the stick touches the hand, or else it must be continuous with it, as one part of the air is continuous with another, and as the parts of an animal are continuous. And this would appear to occur in all things, because the mover is always touching the mobile in one or another of these ways. Let it be accepted, then, in either of these ways, that from all of the infinite mobiles and movers, one thing is made, i.e. the entire universe itself, via some kind of continuity. Therefore this, because it is actually occurring, is supposed [as a premise]. And let this whole, which is some magnitude and continuum, be called ABCD, and let its motion be called EZIT. And because someone might say that EZIT is the motion of a finite number of mobiles, and thus cannot be the motion of a complete infinite, Aristotle emphasizes that it makes no difference in regards to the proposition whether it be a finite magnitude that is it is being moved, or an infinite one. For just as, when A is being moved in a finite time K, some other thing among the finite mobiles is moved simultaneously, [the mobiles] being infinite in number, similarly also in the same time there may simultaneously be moved the entire infinite magnitude. An impossibility therefore follows, whatever of these is taken, be it a finite magnitude consisting of a magnitudes infinite in number, or be it an infinite magnitude, whose motion is in finite time. As was shown above, an infinite mobile cannot be moved in finite time. Therefore, the impossibility is that from which it was based on, i.e. that one could proceed to infinity in movers and motions. Thus it is demonstrated that where one thing is moved by another, the series cannot proceed to infinity, but it will stop somewhere, and there will be some first mobile, which is moved by some other immobile.

[5] And, because the above-mentioned proof proceeds based on a certain supposition, i.e. that all

[4] Deinde cum dicit: sed si id quod movetur etc., ostendit quomodo praedicta ratio efficaciam habere possit: et primo quomodo habeat efficaciam ex suppositione facta; secundo quomodo habeat efficaciam simpliciter, ibi: nihil autem differat et cetera. Dicit ergo primo, quod id quod localiter et corporaliter movetur primo et immediate ab aliquo mobili movente, necesse est quod tangatur ab eo, sicut baculus tangitur a manu; vel quod continuetur ei, sicut continuatur una pars aeris alteri, et sicut pars continuatur animali. Et hoc videtur contingere in omnibus, quod movens semper coniungitur mobili altero istorum modorum. Accipiat ergo alter istorum modorum, scilicet quod ex omnibus infinitis mobilibus et moventibus efficiatur unum, scilicet ipsum totum universum, per continuationem quandam. Hoc ergo, quia contingens est, supponatur: et istud totum, quod est quaedam magnitudo et continuum, vocetur abcd, et motus eius vocetur ezit. Et quia posset aliquis dicere quod ezit erat motus finitorum mobilium, et ita non potest esse motus totius infiniti; subiungit quod nihil differt quantum ad propositum pertinet, utrum accipiat finita magnitudo quae movetur, aut infinita. Sicut enim simul quando movebatur a, in tempore scilicet finito, quod est k, movetur quodlibet finitorum mobilium, quae sunt numero infinita; ita etiam simul in eodem tempore movetur tota magnitudo infinita. Sequitur ergo impossibile, quodcumque horum detur, sive quod sit magnitudo finita constans ex magnitudinibus numero infinitis, sive quod sit magnitudo infinita, et motus eius in tempore finito; cum sit ostensum supra quod mobile infinitum non potest moveri tempore finito. Ergo impossibile est hoc ex quo sequebatur, scilicet quod procedatur in infinitum in moventibus et motis. Manifestum est ergo quod hoc quod unum moveatur ab altero, non procedit in infinitum: sed stabit alicubi, et erit aliquod primum mobile, quod scilicet moveatur ab altero immobili.

[5] Et quia praedicta probatio procedit supposito quodam, scilicet quod omnia infinita moventia et mota continentur ad invicem et constituent unam magnitudinem, et sic posset alicui videri quod non simpliciter concludatur; ideo subiungit quod non differt hanc demonstrationem processisse quodam supposito; quia ex contingenti supposito, etiam si sit falsum, non potest sequi aliquod impossibile. Cum ergo praedicta ratio ducat ad impossibile, illud impossibile non sequitur ex isto contingenti supposito, sed ex alio, quod oportet esse impossibile, cum ex eo impossibile sequatur. Et sic patet quod in demonstrationibus ad impossibile ducentibus, nihil refert utrum accipiat falsum contingens adiunctum impossibili, vel verum. Ostenditur enim impossibile esse illud, ex quo, cum adiunctione contingentis falsi, sequitur impossibile, sicut si ex eo impossibile sequeretur, adiuncto quodam vero: quia sicut ex vero non potest sequi impossibile, ita nec ex contingenti.

the infinite moving and moved beings are continuous to each other and constitute one magnitude, it might thus appear to someone that the proof is not valid simpliciter. Therefore Aristotle emphasizes that it makes no difference whether this demonstration proceeds by the use of some supposition, because from the possibility of the supposition, even if it were false, no impossibility can result. Since the argument given above leads to an impossibility, that impossibility does not result from admitting this supposition as possible, but rather from something else that makes it impossible, and from this [other thing] the impossibility results. And thus it is clear that in demonstrations by ‘leading to an impossibility’ [i.e. *reductiones ad absurdum*], it does not matter whether the possibility used in demonstrating the impossibility is true or false. For it is shown to be an absurdity [*impossibile*] that from which, with a false possibility conjoined, something impossible follows, just as an impossibility would follow if the conjoined possibility were true. Just as from a true supposition an impossibility cannot follow, neither can it follow from something being added.

[6] But someone might say, that it is not really that case that all mobile beings are in contact, but rather that it is impossible for the elements to be continuous among themselves, or with the heavenly bodies. But it must be said that there is a difference, in accepting something as possible which is in fact impossible, between a demonstration of something by genus, and a demonstration of something by species. This is because, in the case of demonstration by species, that thing must be accepted as impossible to which is incompatible either with the genus or specific difference, from whose notion the species is constituted. But in the case of demonstrations by genus, all that can be accepted as possible which is not incompatible with the notion of the genus, whether or not the specific difference is incompatible. For instance, in speaking of the genus animal, one might take as a supposition that every animal is winged. However, if one were to descend to speaking about humans, it would be impossible for animal to be considered as winged. Because, therefore, Aristotle is here speaking about mobiles and movers in general, and has not yet made reference to determined mobiles, it is indifferent to the notion of movers and mobiles whether there be continuity or contiguity. Thus he takes it as possible that all mobiles are continuous to each other, which nevertheless would be impossible if the mobiles were considered according to their particular natures.

[6] Sed potest aliquis dicere, quod non est contingens omnia mobilia continuari; sed impossibile est continuari elementa ad invicem, et cum caelestibus corporibus. Sed dicendum est quod alio modo accipitur contingens et impossibile, cum demonstratur aliquid de genere, et cum demonstratur aliquid de specie. Quia cum agitur de specie, oportet accipi ut impossibile esse illud, cui repugnat vel genus vel differentia speciei, ex quibus ratio speciei constituitur. Cum vero agitur de genere, accipitur ut contingens omne illud cui non repugnat ratio generis, licet ei repugnet differentia constituens speciem: sicut si loquerer de animali, possem accipere ut contingens, quod omne animal esset alatum; sed si descenderem ad considerationem hominis, impossibile esset hoc animal esse alatum. Quia igitur Aristoteles hic loquitur de mobilibus et moventibus in communi, nondum applicando ad determinata mobilia; esse autem contiguum vel continuum indifferenter se habet ad rationem moventis et mobilis; ideo accipit ut contingens, quod omnia mobilia sint continua ad invicem: quod tamen est impossibile, si mobilia considerentur secundum suas naturas determinatas.