

CHAPTER IV

THE DIVISION OF MOTION

The motion of motion is treated by Aristotle in book V of the Physics and again in book XI of the Metaphysics. The question is raised in connection with the division of motion and it is from several preliminary divisions of motion that the principles of the arguments are taken. In this chapter we shall treat of these divisions in order to lay bear the principles upon which our main argument shall be based.

In book III of the Physics Aristotle used the term κίνησις in a wide sense in which motion was equal to change in general (μεταβολή).¹ In book V Aristotle proceeds to a division of change into its kinds and hence shifts to a more proper usage of terms. Here change (μεταβολή) is the genus and motion (κίνησις) is a species, used in the narrow sense as applying only the changes in the categories of quantity, quality, and "where".

Book V of the Physics treats of the formal division of motion or change into its species or subjective parts.² The term

1 St. Thomas, In V Physic. lect. 2, n. 649

2 *ibid.*, lect. 1, n. 630

of formal division is the ultimate species which can no longer be divided formally. Once this is had, Aristotle will determine what a single motion is in the fourth chapter of book V. Book VI, which is concerned with the material division of motion, follows Book V. The reason is that subject of book V is different from that of book VI, and of different subjects there are different principles.³ Hence, in treating the motion of motion we shall be compelled to confine ourselves to those principles which are derived from the formal division of motion, where motion is considered as a postpredicamental genus.

The first division of motion is into motion per se and motion per accidens. Now, there are five things involved in every motion: the mobile, the prime movent, the time in which, the terminus ad quem and the terminus a quo. Hence, motion can be divided into per se and per accidens in three ways: either by reason of the mobile, the prime movent, or the terms of the motion. It is not divided according to time, because time is an extrinsic measure of motion.⁴

3 St. Thomas, In De Sensu et Sensato, lect. 1, n. 2: "Et sicut diversa genera scientiarum distinguuntur secundum hoc quod res sunt diversimode a materia separabiles, ita etiam in simulis scientiis, et precipue in scientia naturali, distinguuntur partes scientie secundum diversam separationis et concretionis rationem."

4 St. Thomas, In V Physic. lect. 1, n. 645: "Non autem dividit motum ex parte temporis, quod videtur residuum; quia tempus comparatur ad motum ut mensura extrinseca."

Although both the terms per se and per accidens are used in multiple senses in Aristotle, in general per accidens ($\kappa\alpha\tau\alpha\ \sigma\upsilon\mu\beta\epsilon\tau\eta\kappa\epsilon\acute{\iota}\varsigma$) means simply what is outside of the definitive ratio of something and related to it only by the concomitant inherence of the two qualities in the same individual substance ($\delta\tau\iota\ \sigma\upsilon\mu\beta\alpha\acute{\iota}\nu\omicron\upsilon\sigma\iota$), as musical and white are related only in so far as both inhere in the same Socrates.⁵ Per se or by itself means what is related to something not by their both being in an individual substance, but because the one is implied immediately in the definitive ratio of the other, as "to have its angles equal to two right angles" is implied in the ratio of triangle. Thus the per accidens has a definite relation to an individual substance or if not to an individual as such at least to a particular nature which lies outside the definitive being of either of the qualities that are related per accidens. Whence it is easy to see that per accidens taken

5 St. Thomas, In 11 Physic. lect. 6, n. 190: "Nam causa per accidens dicitur esse illud quod conjungitur causae per se quod non est de ratione ejus."

cf. In Post. Anal. lect. 10, n. 86: "Quae vero praedicata neutraliter inveniunt, idest neque ita quod ponatur in definitione subjectorum, neque subiecta in definitione eorum, sunt accidentia, idest per accidens praedicantur, sicut musicum et album praedicantur de animali per accidens."

cf. also, In V Metaphysic. lect. 9, n. 845: "Quia vero hujusmodi praedicata per accidens per prius praedicantur de singularibus, et per posterius de universalibus, cum tamen e converso ait de praedicatis per se."

in this general sense, corresponds to Hegel's contingent and per se to his necessary.

First Aristotle divides motion into per se and per accidens from the viewpoint of the mobile. Something is moved per accidens in the sense of being moved by reason of being in something which moves per se. For instance, "the musician walks" is true inasmuch as the animal that walks possesses the art of music; but that the walking animal be a musician is purely incidental, else nothing could walk except qua musician. This can be taken as a primary signification of per accidens, that is, when the definition of per accidens is taken from the logical order, that is, from the common accident. Per accidens is what is "in", but not essentially related to. But "in" is taken in different senses and the logical sense is only one of them.⁶ Hence, per accidens as referring to "being in", will be said in different ways. It will no longer refer just to the common accident, but be taken in a wider sense to include both the common accident and the proper accident and things, such as the soul, which are said to be in though they are not accidents at all. Thus, the sailor moves per accidens along with the boat that moves per se; but the sailor moves per se on the deck, for instance. Again the soul is in the body, but

6 cf. Physics, book IV, chapter 3

the soul moves per accidens when the body moves per se. Finally, the part qua in the whole moves per accidens when the whole moves per se.⁷

But the whole moves per se if the part moves or changes. Thus the animal is said to be healed when the eye or foot is healed. The reason is that to change means to be different now than before. A thing is called simply different if one of its parts becomes different, although the whole is thus said to change by reason of the part that changes both per se and primarily.⁸ (Notice that the animal is called healthy when all of its parts are healthy, but sick when any part is so.) However, the sailor standing on the deck of the ship in motion is in himself not different as he stands; and he is not part of the

7 St. Thomas. In XI Metaphysicorum, lect. 11, n. 2355: "Uno modo permutatur aliquid per accidens tantum, quando scilicet aliquid dicitur permutari ex quo illud in quo est permutatur: sive sit in eo ut accidens in subiecto, sicut musicum dicitur arbulare, sive sit forma substantialis in materia ut anima in toto corpore, sive quaecunque pars toto toto, sive etiam contentum toto continente, ut nauta nota navi."

8 Ibid., n. 2356: "Secundo modo dicitur aliquid permutari simpliciter eo quod aliquid ejus permutatur, sicut ea quae moventur secundum partem -- Et hoc quidem est per se moveri, sed non primo modo."

ship, else if he changed place in the ship by walking on the deck, the ship would be said to have changed. As he stands he is related to a different place only in so far as the boat is in motion. Wherein we notice that although per accidens is understood in a number of senses, this way of saying per se or secundum partem is contrasted only with the last way of saying that something moves per accidens in the enumeration we gave above, the sense in which "in" means as a part is in the whole. This way of saying per se can be further divided in so far as "part" is understood as either a quantitative part or a subjective part. This is a way of "being moved per se," but it is not primary.⁹

The primary way of being moved per se which is properly per se is when a thing is moved not by reason of its being in something else which is moved per se, nor by reason of one of its parts being moved, but because it is moved by itself as a whole. This is properly per se, because the quality of per se

⁹ of. St. Thomas, In VII Physic., lect. 1, n. 337:
 "Cui deceptus est Galenus ex equivocatione ejus quod est 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 ei tantum quod est per se, et sic quod movetur secundum partem, movetur per se."

"belongs to" (proprium est) to the whole by reason of the whole itself.

This is the mobile per se primo and it is differentiated according to the kind of change, as the alterable is the mobile according to quality, which is further differentiated according to the species of alteration, as the healable and the beatable.

The same division can be made from the viewpoint of the prime mover. Here we mean that which immediately moves something, not the ultimate mover in a chain of causes. Thus the musician is said to build per accidens in so far as the person who is a musician is also a builder. Or it can be the mover because a part of the whole is a mover, such as man is said to pluck because his hand plucks. But this is not the proper signification of per se. The per se mover is that which moves not by reason of its being in something to which it has no essential relation, nor by reason of a part of its being, but because the whole moves, such as when a doctor heals (ὁ ἰατρός ἰατεῖ).

And again the same division is had as regards the terms of motion. The mobile can be moved to a terminus ad quem in so far as this term is accidental to the term to which the mobile is moved per se as when the subject is moved to intellectual knowledge, because the per se term, white, happens to be known by the intellect.

The mobile may be moved to a terminus ad quem in so far as it is moved to a part of the whole, such as when a thing changes color because it is moved to white which is a subjective part of color, or to Europe because Athens is a part of Europe. Or it can be moved to a term per se in the proper sense, when it is moved to that term immediately as to a whole, such as when the mobile is changed to white color.

Division of change into its Species

Although Aristotle's concept of change differs from Hegel's, both philosophers are in accord in defining change as being between opposites, as is implied in the very word *μεταβαλλειν*, which means "to throw after or later" and involves a succession in time of the before and the after. The very opposition of the terms means their not being together, which St. Thomas calls their incontingentia.

In nomine enim mutationis et transitus designatur aliquid idem, aliter se habere nunc et prius; et etiam ipsi mutationis termini non sunt incontinentes, quod requiritur ad hoc ut sint mutationis termini, nisi in quantum referuntur ad idem. Nam duo contraria si ad diversa subiecta referantur, contingit simul esse.¹⁰

The necessity implied in motion is derived from the inability of the terms to coincide simultaneously in the same subject. Of course, for Aristotle this necessity is not an

¹⁰ St. Thomas, Q. D. de potentia, q. 3, art. 2

efficient necessity or necessitas coactionis, as it is for Hegel, but a necessitas medii which depends for its activation on the desire for the end.¹¹ It is a necessary succession merely because the two terms cannot coincide simultaneously. Thus we can say that the terms of motion are per se when they are direct opposites, that is, not by reason of something else.

Dicendum, quod si ly ex nomine causam, non fit aliquid ex opposito nisi per accidens, ratione scilicet subjecti. Si vero nominet ordinem, tunc fit aliquid ex opposito etiam per se; unde et privatio dicitur principium esse fieri sed non essendi.¹²

Contingent terms are precisely those which, because they are not opposed, may coincide in the same subject. As such there is a community of signification between St. Thomas and Hegel in respect to these words, necessary and contingent, especially when used in the context of change. This is the common ground between Aristotle and Hegel which will serve as our point of departure.

Having laid down our principles, we can proceed to the division of change according to its per se terms and the different kinds of opposition which are found among the terms. As such change is:

1. de subjecto in subjectum
2. de subjecto in non-subjectum
3. de non-subjecto in subjectum
4. de non-subjecto in non-subjectum

11 cf. St. Thomas, In V Metaphys. lect. 6

What is meant by subjectum (*ὑποκείμενον*) here is anything which is signified affirmatively.¹³ Thus we have four divisions of change. But one of these divisions is not real and in fact useless. It is obvious that change is per se between opposites. But two negatives are not opposed, because any two negatives can be said of the same subject simultaneously.¹⁴

The same objection, however, does not hold as regards the change from subject to subject, because here Aristotle understands change between contraries. Contraries are both signified affirmatively and are positive forms, while one of the contraries always includes the privation of the other contrary, and one contrary is in this respect compared to the other as imperfect to perfect.

Hence change (*μεταβολή*) is divided into motion in the strict sense (*κίνησις*) which is between contraries, and change (*μεταβολή*) which is only change and not motion, namely, from non-subject to subject or from subject to non-subject. That from non-subject to subject is called generation; it is from non-being to being. Generation is further divided into two kinds, in so far as being itself is twofold. Being is

¹³ St. Thomas, in V Physic., lect. 2, n. 652: "non enim accipitur hic subjectum eo modo quo sustinet formam, sed eo modo quod affirmativum significatur, dicitur hic subjectum." cf. Metaphysica, 1067 b 15

¹⁴ Ibid., n. 652

either simple, absolute being, by which we say that something is without any further qualification, or being which is being so and so, such as white or large. Absolute, unqualified being is substantial being because individual substance is that which is simply by itself. Qualified being is accidental being, as when we say of Socrates that he is "white". This being, namely, the color, is not by itself but in another and hence is non per se, that is, it is and exists in so far as it is in an individual substance. Hence, accidentia here means a being that has no being apart from that in which it is, namely, substance, and is not by itself. To these two types of being there correspond respectively substantial and accidental generation, so called by reason of their terminus ad quem.¹⁵

Substantial generation is, of course, found only in the category of substance, but accidental generation is found in all the other nine categories. Generation is not opposed to motion in such a way that change in a given category must either be generation or motion. Rather all motion, inasmuch as the

¹⁵ Ibid., lect. 1, n. 643: "Et dicit quod mutatio magis denominatur a termino ad quem, quam a termino a quo -- Hujus autem ratio est, quia per mutationem auferitur terminus a quo et acquiritur terminus ad quem; unde motus videtur repugnare termino a quo, et conventionem habere cum termino ad quem et propter hoc ab eo denominatur."

opposition of contradiction is basic to all other oppositions, can be called a generation in this respect, since all action is a coming to be, so that in that category where there is motion, there is necessarily generation. But not all generation implies motion. Thus generation may be found in a category in which there is no motion PAR 22.

Likewise the change from subject to non-subject or from being to non-being which is corruption, is divided into substantial corruption and accidental corruption. Aristotle calls the former generation and corruption simpliciter, and the latter generation and corruption secundum quid. Usually generatio simpliciter means "of substance" and generatio secundum quid refers to the accidental order. We shall see that generatio simpliciter may mean no more than the final generation that comes about as the term of a series of intermediary generations, whether substantial or accidental, as the ancients believed of the embryo in the production of an animal. This is Aristotle's usage in the De Generatione et Corruptione where he discusses embryonic development.¹⁶

¹⁶ cf. St. Thomas, In De Generatione et Corruptione, lect. 3, n. 59

Next Aristotle proves that generation and corruption are not motions in the strict sense. First, he considers generation.¹⁷

First, Aristotle divides non-being into two kinds. Non-being, like being, is said in many ways. First, there is non-being which appears in the mental act of division whereby a predicate is removed from a subject, as when we say that man is not a horse. But this non-being exists only in the mind. Since motion is found only in extramental reality, that kind of non-being is not moved. This sense of non-being is a primary one, which our mind forms in seeing that "this" is not "that". It is only later that we grasp real negations or real non-being, such as the lack of sight in an animal that ought to see.

"Non-being" can be further extended to signify not just an intentional being, nor a real negation such as privation, but being in potency, which is the subject of privation, that is, privation or negation of the act. This potency can be called a real negation inasmuch as though real, it is not in act--non actus ens. Being in act, in any category, not just in substance, is in a sense simply being, that is, being without qualification. Hence, what is not in act, is not i. e., does not exist simply. If we wish to state that it exists we must add a qualification, namely, that it "is in potency."

17 Aristotle, *Physics*, 225 a 20-23

Thus Aristotle reasons that if generation is a change from non-being to being, non-being becomes being, so that if generation is a motion, non-being will be moved per se.

It may be objected that this reasoning does not apply to accidental generation, because the subject of accidental generation is being in act. Hence it could move.¹⁸ The answer is that the non-white or non-good can be moved in a certain way, i.e., per accidens, precisely in so far as the subject of non-white might be a man. But what is per accidens does not define the change between non-white and white precisely as a change.¹⁹ A change is defined through its per se terms. But what is in no way in act, such as pure potentiality, cannot be moved at all. It follows that the subject in substantial generation, prime matter, cannot be moved even per accidens.

¹⁸ Our division of Aristotle's argument follows Thomistius and St. Thomas in the *Metaphysics* against Simplicius, Averroes and St. Thomas in the *Physics*.

¹⁹ Thomistius, *Paraphrases in Octo Libros Physicorum* (Spengler) p. 349, line 5 - 16, cf. Appendix, entry 1.

Averroes, *In V Physica*, text. comm. 8 (E): "...quod autem est non ens aliquod, v. g. non ens album, possibile est moveri per accidens."

St. Thomas, *In XI Metaphysic*, lect. 11, n. 2370: "Ens enim in potentia, quod oppositur enti in actu, quod non est ens simpliciter, contingit moveri, sed tamen secundum accidens. Non enim ipsum non album movetur, sed subiectum in quo est haec privatio, quod est ens actu."

since it inheres in nothing else, since it has no subject in its turn.

Hence, generation is not a motion, because what becomes is non-being. If generation were a motion it would follow either that non-being is moved, which is impossible if there is no subject in act, or that what becomes would be moved precisely qua non-being which is what would happen if we made generatio secundum quid a motion.

Another objection might be brought forth, such as what becomes comes only per accidens from non-being. What becomes per se is the subject. But the subject is being in potency per se. Hence, the above reasoning does not follow, because it is based on a parallel between motion and generation. Motion is per se in the subject, not in the terminus a quo.²⁰ Therefore, the subject of simple generation is not per se non-being.

The answer is that non-being is said to become principally per accidens in as much as non-being inheres in that

²⁰ St. Thomas, In V Physic. lect. 1, n. 642: "Dicitur autem id quod movetur prius esse alterum ab utroque termino, quia nihil prohibet id quod movetur per accidens, esse alterum terminorum: subjectum enim, ut lignum, est id quod calefit per se; privatio vero et contrarium, ut frigus, est quod calefit per accidens, ut in primo dictum est." cf. Physics, book 1, 191 b 13

which becomes per se. However, it is still true to say that non-being inheres in that which becomes simply. The reason is that what becomes, comes into being in so far as it is non-being,²¹ so that the change is from non-being to being. But this is a derived sense of "from" (ex), so that it is more properly said to come from the subject. But since what is in potency does not exist simply, it must be said to be simply non-being. To be in motion is to be in act, hence, it would be a contradiction to say that what is in potency is in act.²²

The same thing is proved in regards to corruption except that Aristotle assumes a different middle term. Corruption is contrary to generation, but motion is contrary to motion, so that if generation is not a motion, corruption is not a motion.

21 Physics, book 1, 191 b 25

22 Metaphysics, book IX, 1047 a 30

CHAPTER 5

The Arguments against the Motion of Motion

Having made the preliminary division of how per se and per accidens are said as regards motion and the division of change as a post-predicamental genus into its species, Aristotle proceeds to divide motion according to its terminus ad quod. This division is similar to the one of generation into substantial and accidental, with the exception that whereas accidental generation is found in all the categories of accident, motion is found only in three, quantity, quality and "where". It is in connection with this division of motion that Aristotle raises the question about the motion of motion. He takes each category separately in order to prove that there is no motion in substance, relation, or action and passion.¹

The categories of action and passion present a special problem because there is motion in them in a certain way. Action is the act of the mobile as coming from the agent and terminating in the patient.² Passion, which means reception,

1 St. Thomas, *In V Physic.* lect. 3, n. 662

2 St. Thomas, *I pers.* q. 41, art. 1, ad 2: "Et ideo actio, secundum primum modum impositionis importat originem motus: -- ita origo ipsius motus secundum quod incipit ab alio et terminatur in id quod movetur, vocatur actio."

is the act of the mobile as received in a certain subject and coming from the agent.³ The act of the mobile is motion. Hence action and passion are substantially the same as motion itself⁴ and action, passion and motion all terminate in the numerically and specifically same effect, be it white, large, or in a certain place.⁵ The only difference is that action is defined differently from passion and from motion which abstracts from both action and passion.⁶ Of course, this difference in definition is not purely fictitious. The agent is really distinct from the patient and the respectus of motion to the agent is different from the respectus of motion to the patient. Hence, the notion of motion problem does not concern the motion which is substantially the same as action and passion, but a motion which would have the very action or passion for its terminus ad quem.

3 *Ibid.*, "sicut enim motus prout est in mobili ab aliquo, dicitur passio."

4 St. Thomas, I *II-II*, q. 45, art. 3, ad 2: "...actio et passio convenient in una substantia motus, et differunt solum secundum habitudines diversas, ut dicitur in III *Physicorum* (202 b 20)."

5 St. Thomas, in III *Physicorum*, lect. 4, n. 312: "Manifestum autem est quod actio et passio ad eandem speciem terminantur: idem est enim quod agens agit et patienti patitur."

6 *Ibid.*, lect. 5, n. 320: "Et sic patet quod licet motus sit idem convenienter et moti, propter hoc quod abstractit ab utraque ratione, tamen actio et passio differunt propter hoc, quod habent diversas rationes in eorum significationibus includunt."

Aristotle argues against this hypothesis in the following way. If action and passion were themselves the terms of action, it would follow that there is action of action, because action and passion are in reality the same thing as action. But there is no action of action, nor generation of generation, nor change of change, the latter being the genus comprising generation, corruption and action proper.⁷ Hence, there is no action in action and passion.

After having stated the main argument, Aristotle proceeds to prove the minor premise. The order of the proofs of this minor proceeds inversely to the kinds of change enumerated in this premise and Aristotle leads off by considering first the change of change and then goes on to consider the hypothesis of change of change as it appears in each of the species of change, generation and action proper. In all, there are six arguments if we follow the enumeration of Simplicius, one dealing with change of change, four with generation of generation, and a final argument considering the action of action proper.

⁷ St. Thomas, *In V Physic.*, lect. 3, n. 668

CHAPTER 6

The First Argument: Change of Change

The expression "motion or motion" can be understood in two ways due to the ambiguity of the genitive construction.¹ There is a subject of motion and a term of motion. Hence, the motion of motion will be either motion of another motion which is the subject of the first motion (ut subjecti), or motion which is the term of another motion (ut termini).

Following this division of the question, the first argument is divided into two parts. The first treats of motion as the subject of motion. The second treats motion as a term of motion.

Motion as Subject of Motion

First, taking the motion of motion in the sense in which one motion is subject to another motion as man is subject to motion when he changes from sickness to health, Aristotle inquires whether motion itself will be heated or cooled, for instance, or change its place or grow or decrease. If motion is understood as the per se subject of motion, he says, this is

1 St. Albert, In V. Meta. text. comm. 11: "Cum enim dicitur quod mutationis est mutatio, potest in genitivo notari constructio subjecti vel termini."

impossible, because motion is not among the number of things which are subjects. The truth of this statement lies in the fact that motion implies a determinate opposition wherein one of the opposites is excluded from simultaneous existence in the same subject as we saw above. If the terms of the motion are not to be together in time, that is, incontinentes, they must be referred to the same subject, and the subject must remain the same throughout the change, as Kant too has observed.²

The subject of motion must therefore be a permanence and it must be in act, for opposites in potency do not exclude each other. If motion were the immediate, that is, per se subject of action, there would no longer be a determinate opposition, I mean one in which there is a reference to a single subject which is the foundation for the terms not being together and explains why there must be motion. It is the material necessity arising from the opposition of the terms which necessitates motion, for if I could be downtown and at home simultaneously, there would be no need for me to get up

² Kant, *Kritik der Reinen Vernunft*, A 104 (B227): "bei allen Veränderungen in der Welt bleibt die Substanz, und nur die Modifikationen wechseln."

cf. also St. Thomas, I *para.* q. 9, art 1: "Secundo, quia omne quod movetur de albedine in nigredinem, movetur secundum substantiam. Et sic in omni eo quod movetur, attenditur aliqua compositio."

and go downtown, supposing always that the efficient motive force is my desire to go downtown for which there is no apparent necessity. Thus in positing motion as the per se subject of action, we remove the rationality of action and it becomes unexplicable. Motion therefore cannot be the per se subject of action.

This is obvious in the case of accidental change where the subject remains idem ipsum throughout the change. Socrates in turning pale does not become non-Socrates. But it holds too in the case of substantial change where it is precisely the destruction of the subject which is brought about, when Socrates turns into non-Socrates something remains, namely, prime matter. The reason is that when Socrates becomes Socrates he comes from something, namely the sperm and he comes from it in a determinate manner just as oak trees come from acorns in a determinate manner. But the acorn does not become the oak tree, but rather disappears when the oak tree appears. Unless there be something common between the acorn and the oak tree we cannot say that the one comes from the other. Rather we would have to say that the one follows haphazardly on the other. Thus besides the subject existing in act, the acorn, there is another "subject" from which the oak tree comes properly and this is prime matter.

The opposition, however, is not referred to prime matter, for then it would not be a determinate opposition (matter is being in potency and opposites in potency do not exclude each other). Rather it is referred to the acorn itself which is being in act, for as long as the acorn exists it excludes the oak tree from existing. Thus in substantial change there are two subjects to be considered, the permanent one or prime matter and the one which, although it vanishes in the production of the new substance, prepares the matter for the new substance and contains the privation of the new substance in it. It is to this non-permanent subject, the acorn, that the opposition is referred and through it to prime matter. And it is through both of these subjects that the generation of an oak tree is a determinate change, for it is only in so far as the acorn prepares the matter which then passes into the oak tree that oak trees and not olives or horses come from acorns. Of course, prime matter is not a sensible object, but we cannot deny its existence just because we cannot see or touch it. This would be tantamount to judging objective reality on the criterion of the subjective constitution of our knowing faculties. Change, whether of the accidental or of the substantial order, requires a permanent subject. Hence, change itself cannot be the per se subject of change.³

3 St. Thomas, q. 2. de potentia, q. 3 art. 3

However, one notion may be concomitant in the same individual subject with another, as expansion is concomitant with a rise in temperature in metals. But expansion is not itself a rise in temperature, nor is heating the subject that is expanding. The precise effect of heating does not require mere heating, but also a subject in which heating occurs. We do not say the heating is itself the heated. The heating requires a subject both to heat and in which to cause the concomitant effect of expansion, and it is precisely because a rise in temperature requires this subject that a rise in temperature is said to be per accidens to expansion. A rise in temperature, although in this material, metal, it necessarily entails expansion, is when considered apart from this material, completely unrelated to expansion, that is, expansion is outside the concept of heating. This is not only due to a subjective abstraction whereby we isolate heating from expansion and then say that it is per accidens; it is a true picture of reality, because heating in itself does not always cause expansion. When wood is heated the result is burning, not expansion and expansion can be had in other ways, as when water freezes. Here the opposite cause produces the same effect in a different substance. The precise correlation of heating and expansion is due to the nature of the subject in which they inhere (συμβαίνουσιν) and this is what we mean by saying they are per accidens.

It may be asked, though, how we can call per accidens the regular concomitance of heating and expansion, which is universal enough at least in gases to found the celebrated equation known as Boyle's law. Such a regular concomitance, it will be objected, is certainly not "accidental" in the sense of a merely fortuitous event, as when a man is struck down accidentally by an automobile. Gases and solids always, or nearly always, expand when heated. Hence, they must be put under the class of those things which happen per se.

The answer is that per accidens is used in a variety of senses. The root meaning in Greek, which we should never lose sight of, is that of something which "goes along with" something else or is concomitant with it. From the root meaning the word is extended to mean anything which is in something else and derives its existence from that in which it is, such as white, big, visible, or any other of the accidental qualities found in any of the nine categories of accidents. Some of these "accidents", far from being merely accidental and haphazard, are actually inseparable from their subjects and imply their subject in their definition. These are the proper accidents, such as visible when said of man, color when said of surface, etc. and these accidents form a per se relationship between themselves and their subjects. On the other hand, opposed to this sense of per se, there are the common accidents which have no necessary

connection with their subjects or with other common accidents
 in the same subject, such as white and rusted when said of
 Socrates. It is among these latter that chance events are to
 be found, because chance is a cause per accidens of things
 which happen infrequently. In so far as something completely
 extraneous to the effect befalls the per se effect and has
 a certain redundancy in the cause, the cause is said to be
per accidens. But it is the per se effect which defines the cause,
 as death is the per se effect of killing, so that which is
 outside the per se effect but joined to it is per accidens
 to the effect. But this is not necessarily a chance event.
 It could be strictly determined, as the fall of a rock is
 determined when you let it go, but it is nevertheless per
accidens to the action of letting something go. You might
 let a balloon go. The effect would be just the opposite;
 instead of going down, it would go up. This is a case of per-
verse accidens and it is a cause per accidens because the final
 effect is joined to the cause not immediately but only through
 the subject, the rock. Naturally we are not saying that letting
 go of a rock has nothing to do with its falling, it does. We
 are merely saying that falling has no immediate and invariable
 connection with the action of letting go in itself considered
 apart from the rock. This is one kind of cause per accidens.
 There is another case when not only is the effect outside the

definition of the cause, but the cause does nothing to bring this effect about, but we erroneously establish a connection between the two in our imagination, (*secundum aestimationem*), as when a housewife in dropping a dish thinks that she has caused an earthquake, because an earthquake happened precisely at that moment. And again there is the case of chance where to the effect per se there is added another effect which is actually brought about by the effect per se, but happens infrequently, as finding a treasure is added to digging a well.

It can be easily seen that the predication of a proper accident of its subject is vastly different from those things which involve the union of common accidents, such as the removens prohibens, the cause secundum aestimationem and chance events. The proper accident always, or nearly always, inheres in its subject and founds the basis for asking the question why. When we see, for example, that all men have the ability to laugh we are justified in asking why, and we expect to get a proper answer, that is, one which fits this case and only this case. However, if we asked why earthquakes happen when a old woman drops dishes on the floor, since this happens neither frequently nor every time an old woman drops a dish, we would be asking a foolish question. But in both cases we are asking about an accident or something that is in some way

concomitant with something else. Laughing goes along with all men and dropping a dish did in fact go along with this earthquake. The only difference is that they are "accidents" of vastly different kinds, and in fact it is only under the class of common accidents that true chance events are found.

But, as we saw, chance events cannot be equated with the cause per accidens, because some of these causes per accidens produce invariable effects, hence we are in no way guilty of a contradiction when we say that heating is per accidens to expansion on the one hand and per se on the other hand when we say that heating metals is per se to the expansion of metals. In the first case we mean only that heating is outside the concept of expansion and viceversa and the precise effect of heating depends not so much on heating, but on the material which is heated. If wood were heated, the effect would be burning, not expansion. Or if it is expansion you want, it can be gotten by freezing so long as it is water you freeze. To say that heating is per se to expansion would mean that heating itself expands, which is patently absurd.

Our answer to the objection is to concede it. Per accidens does not mean haphazard for Aristotle, though it is a generic note in the definition of chance. However, the objection does carry some weight against Hegel. We saw that heating was related to expansion only because both were related to a common object whose nature was such that when heated it

the Ding-an-sich which Hegel rejects. But since heating has of itself no relation at all to expansion apart from the particular material of metals or gases, heating and expansion do become purely haphazard in the Hegelian hypothesis just by being merely outside each other in concept. This is why Hegel can define the German Zufälligkeit by the simple note of Auseinandersein. Zufällig means, not contingent in the wide sense of contingency in the languages which derive the word from Latin, but simple haphazardness, so that the distinction which was forced upon us by the objection cannot be given by Hegel. He must either call them completely fortuitous events or say that heating is the per se subject of expansion. In either way he runs into a difficult situation. In the first case he would be equating regular occurrences, which demand a proper answer to the question why, with freak events, which can only be given an improper explanation. In such an instance all science would be reduced to saying that such and such happens because it happens so. A body falls because it falls. Such a situation would involve us in the incongruity of supposing that the fact is the reason for the fact. The second interpretation whereby one motion is the per se subject of another is, as our proof has shown, false. Motion can be subjected to motion only per accidens, that is, through a third, non-mobile subject.

One Change as Term of Another

Having proved that change cannot be the per se subject of another change, Aristotle turns to consider the possibility of one change terminating in another.

First he lays down his conclusion. Even if we admit that one change cannot be the per se subject of motion which is not itself motion, there cannot be motion of motion except per accidents.

He then begins to argue to the impossibility of motion of motion per se. The argument at hand is reduction to absurdity. In all reductions to absurdity there are two premisses, the hypothesis which is to be proved to be impossible and another premiss which is assumed to be either true or probable. The hypothesis here is that one motion terminates per se in another. The other premiss is that motion itself is from one term to another as are generation and corruption except that generation and corruption are between terms which are opposed contradictorily, such as Socrates and non-Socrates, whereas motion is between terms which are opposed as contraries, such as black and white.⁴ Aristotle wishes to show by this distinction that the present argument is

⁴ Aristotle, Physics, Book V, 225 b 22-26

valid for all kinds of change and not just for motion in the strict sense. Because he said that motion is from one term to another, someone might wonder if generation and corruption are from one term to another, since generation is from non-subject to subject and corruption is from subject to non-subject as pointed out above. The answer to this query is that just as contraries are not opposed per se simple forms, but only in so far as one of the contraries contains the privation of the other, so the negation of one substantial form supposes in reality another substantial form. The present argument is based on a common notion of opposition and is therefore applicable to all kinds of change.⁵

Now that he has cleared up the signification of the pro is which he has induced, he begins to deduce the impossibility of a change terminating per se in another change.

The hypothesis states that the subject will change from one kind of change to another and do so per se. But motion itself is from one term to another. Hence, says Aristotle

⁵ This is against Simplicius's objection. Cf. Simplicius (Diels) p. 343, 4-16 (cf. Appendix, entry 3) Simplicius objects that the present argument is valid only for motion in the strict sense. His objection does not invalidate the present proof, although the generation of generation does present a specific problem which necessitates a separate consideration, namely, that the generation of generation does not posit a subject which remains intact throughout the changes, as Simplicius notes.

concluding, as it seems from the premisses, the subject will be moved simultaneously by two motions, for instance, by a motion from health to sickness and at the same time from the motion toward sickness to still another action.

At first sight there seems to be no impossibility involved here, and indeed there is none. Aristotle has not yet deduced the impossibility nor has he deduced the above conclusion from his premisses. He is merely laying down the first of two conditions necessary for motion to terminate per se in another motion. Let us examine this first condition.

Aristotle says that the subject will be moved simultaneously by two motions. There is, I repeat, nothing impossible in this statement as it stands nor is it intended to contain an impossibility. However, when we compare this last statement with the hypothesis there seems to be a discrepancy. The hypothesis states that one motion will terminate in another so that the second will be the terminus ad quem of the first. Usually, it seems, a subject is not in motion to the terminus ad quem and determinately in the terminus ad quem at the same time. We cannot be going to Thebes and be already in Thebes, and this because the terms of motion are necessarily opposites

and not together in time.⁶ As we saw this mutual exclusiveness of the terms of motion is what founds the necessary succession in time which characterizes motion. Going to the terminus ad quem is not simultaneous with being in the terminus ad quem. It makes no difference whether the terms are non-moving, permanent beings or whether they are themselves motions. If getting sick is the terminus a quo of a motion which will end in another motion which is here assumed to be in place of the terminus ad quem, the subject will not, so it seems, be simultaneously in the motion of getting sick and in another motion which is taken to be the terminus ad quem of a motion from the motion of getting sick. The subject can be in the motion of getting sick and at the same time be moving from that motion to another which will be the terminus ad quem, but the subject cannot be simultaneously in the terminus a quo, be it a motion

⁶ St. Thomas, in VI Physic., lect. 2, n. 761: "Et dicitur quod necesse est id quod movetur ab uno termino in alium, non simul moveri et motum esse, in quantum movetur ad quando movetur; sicut si aliquis vadit Thebas, impossibile est hanc duo simul esse, scilicet ire Thebas et vivere Theban. -- Quod vero non simul sit moveri et motum esse, apparet ex ipsa motus successione: quia impossibile est aliquo tempore simul esse, quod est terminus motus, cum ipse moveri."

or not, and in the terminus ad quem. But this is, as we shall see later on, exactly what Aristotle wants to say, namely that the subject will be in the motion from health to sickness, which motion is the terminus a quo, and at the same time in another motion which is the terminus ad quem.⁷

Obviously such a statement cannot be deduced from the hypothesis and the other premises brought in to help the hypothesis to a conclusion, yet it is equally obvious that Aristotle means just such a statement and besides as will evident at the end of the argument, this proposition is required if the root of the proof is to conclude to an absurdity. Hence, we find among the commentators of Aristotle an effort to doctor up Aristotle's argument by the induction of another premise from book VI of the Physics. Let us review briefly the commentaries of Simplicius and Averroes which are quite similar at this point.

Averroes assumes from book VI the principle that the mobile while in motion is partly in the terminus a quo and partly in the terminus ad quem.⁸ This premise is proved in book

⁷ Aristotle, Physics, Book V, 225 b 27

⁸ Averroes, In V Physic., tex. comm. 12: "Deinde distit. 'Manifestum est etc.' -- cum posuerimus quod illud, quod movetur de sanitate in aegritudinem, est in duobus transmutationibus insimul, scilicet transmutatione ad aegritudinem et transmutatione ad transmutationem ad quam transmutatur, manifestum est quod cum transmutatur ad aegritudinem transmutatur cum hoc ad quamlibet transmutationem: cum sic fuerit positio dicentis quod omnis transmutatio est a transmutatione sine determinatione."

VI and we shall not bother with it here. The result for our argument is, though, immediately clear. The subject will be moved from health to sickness and at the same time by another motion which is the terminus ad quem of the motion from getting sick. Having thus established that the subject will be moved simultaneously by two motions, Averroes and Simplicius begin to deduce a number of conclusions showing that the motion of motion per se is impossible, or so they think.

First Averroes, following Simplicius, goes on to reason that if the subject may be moved from getting sick to another change, when he has got sick he will be moved to any other change.⁹ It must be to any other change, because we have not defined the terminus ad quem. Here Averroes and Simplicius each take a different tack.

Averroes says that the mobile will be moved to any other term; hence, it can be moved to rest, so that it will be at rest and in motion at the same time.¹⁰ This is the impossibility he sees in the motion of motion. Hence, the argumentation up to this point proves definitively, in Averroes' mind, that there is no motion of motion, and it is for this

9 *ibid.*

10 *ibid.*, "Deinde induxit id, quod sequitur ex hoc et dixit: "qui possibile est quiescere," i.e., cum transmutatur cum hoc a qualibet transmutatione possibile est ipsum transmutari ad privationem transmutationis et sic erit transmutatum ad aegritudinem et non transmutatum insimul, quod est impossibile."

reason that Averroes divides the whole argument into two parts, this being the conclusion of the first part.

Simplicius argues that the mobile, subject will be moved by two motions simultaneously and hence be simultaneously in two termini ad quod.¹¹ This is supposed to be contradictory and hence show that motion of motion per se is impossible.

All the same, none of these supposed absurdities is really so, nor do they contradict the hypothesis. In a reduction to absurdity we assume not the universal, but the particular.¹² Hence Aristotle must not be interpreted as saying that all motion always ends in motion, because this is clearly false. It contradicts the existence of rest which is one of the principles of natural science. The proper refutation of such a universal statement is by simple reference to the principle of the science, namely, that nature is a principle both of motion and of rest. Our hypothesis here must be understood as within the limits of Natural Science, i.e., one that does not deny rest. Otherwise it would be impossible to assume the fact of rest in the refutation or even conclude to its negation, because this is precisely what would not be granted by our

¹¹ Simplicius, cf. note 5 supra

¹² Cf. Aristotle, Prior Analytics, 62 a 11

opponent. In order to conclude that no motion terminates per se in motion the hypothesis must be a particular statement-- some motion terminates per se in motion. Thus the fact of rest does not, of itself, refute the hypothesis. We cannot say that there is no motion of motion because motion might terminate in rest and not in motion.

Now is it absurd for a subject to be moved by two motions simultaneously, if these are two different kinds of motion, for difference in kind in respect to motion may be either generic difference as exists between a motion in the category of quality and a motion in the category of quantity or specific difference as exists between two opposing motions of the same genus.¹³ In the first case, since quantity is not opposed to quality, generically different motions are not opposed,¹⁴ and it is to be noticed that Aristotle has not yet specified what kind of difference there will be between the

13 St. Thomas, In 111 Physic., lect. 1, n. 262: "Different sunt species motus secundum diversa genera entium; ut augmentum, quod est motus in quantitate, a generatione, quae est motus in substantia. Different etiam species motus secundum perfectum et imperfectum in eodem genere: Nam generatio est motus in substantia ad firmam, corruptio vero ad privationem; et in quantitate augmentum ad quantitates perfectas, diminutio ad imperfectas. Quare autem non assignantur duae species in qualitate et in ubi ostenditur in quinto (lect. 4)."

14 St. Thomas, Q. De de Potentia, q. 3, art. 1, ad 15: "Hoc tamen oportet quod ex ente unius generis fiat ens alterius generis, sicut ex colore et figura; ens enim et non ens non possunt esse simul; color autem et figura simul esse possunt. Id autem ex quo fit, debet esse incontinentem ei quod fit, ut dicitur I Physicorum, quod non contingat simul esse." cf. Physic., Book 1, 100 a 32 - 34.

motion which is in the place of the terminus a quo and the motion which is in the place of the terminus ad quem.

Likewise it is not absurd to suppose that a subject move in respect to a motion in one category and rest in respect to another. The point is that we cannot conclude here that the motion which is the terminus ad quem is in the same genus. It is stipulated only as being "another" motion. Finally, Averroes' rendering of the argument would suppose just what Aristotle wishes to show, namely, that the terminus ad quem would be indeterminate. It is not sufficient to merely say that the terminus ad quem is not defined. The definition of the motion which is the terminus ad quem is the whole point of Aristotle's argument.

Besides, it is not logically possible to use principles belonging to book VI into a discussion in book V. Book VI is concerned with the material division of motion, book V with the formal division. The induction of such a principle on the part of Simplicius and Averroes as the one stating that the mobile while in motion is partly in the terminus a quo and partly in the terminus ad quem violates the logical order of the treatises and can have only a probable value here. It does not, at any rate, prove decisively that the subject will be moved by two motions at the same time and terminate in two

termini ad eundem simultaneously, as Simplicius thinks it does. We may, while fully agreeing with this principle, argue that when the subject has finally got sick he will then be fully in another motion, understanding merely that as one motion pulls to a stop another begins as in a relay race. In short, Simplicius' and Averroes' remarks on the subject in no way decide the question nor prove that the subject will be moved by two motions at the same time to two different terms, yet this is the intention of Aristotle.

Since this interpretation of the argument is faulty we must find another. We must add also at this juncture our disagreement with St. Thomas' interpretation of the argument in the Physics which is, however, not as radical as our disagreement with Averroes and Simplicius. St. Thomas bases his commentary in the Physics on Averroes and thus divides this argument into two parts, each of which supposedly gives a separate reduction to absurdity of the hypothesis. But this so-called first part which we have just reviewed has not reduced the hypothesis to absurdity. As a matter of fact there are not two parts, nor are there two separate reductions to absurdity. Our own interpretation will bring this out.

Having laid down the hypothesis and the other premises, namely that motion itself is between two terms, Aristotle says

that therefore the mobile will be moved by two motions at the same time. He will be moved from health to sickness and from this motion of getting sick to another.¹⁵ This means, as Simplicius and Averroes rightly thought and as will be seen by the final issue of the argument, that the other motion which is in the place of the terminus ad quem will be simultaneously present in the subject with the motion of getting sick. But, as we said, this does not seem to be the case, and this is what St. Thomas says in the *Metaphysics*.

Et sic simul, dum aliquod movetur de sanitate in aegritudinem, transmutabitur de aegrotatione in aliam transmutationem.

Sed hoc non videtur, nisi inquantum una mutatio succedit alteri.¹⁶

Before we can interpret St. Thomas's text here we must ask a rather vexing question. The subject is moved from health to sickness and at the same time from this change to

15 Aristotle, *Physics*, Book V, 225 b 27

16 St. Thomas, *In XI Metaphysic.*, lect. 12, nn. 2338-39. St. Thomas continues: "Contingit autem quod ad hanc mutationem qua aliquid movetur de sanitate in aegritudinem succedat quaecumque alia mutatio; puta dealbatio, vel denigratio, mutatio secundum locum, vel quaecumque alia. Unde manifestum est, quod si aliquis languet per hoc quod movetur de sanitate in aegritudinem, quod ex hac mutatione permutari poterit in quancumque aliam mutationem. Neque est mirum, quia poterit ex hac mutatione mutari ut in quiete. Contingit enim post hanc mutationem aliquem quiescere."

another change, a sum total of three changes, the change from health to sickness which is the terminus a quo, another change which is the terminus ad quem and an intermediary movement or change between the two, for by the very fact that the subject goes from getting sick to another change he is changed. The question is this. Which two of these three changes does Aristotle wish to prove to be simultaneous, the two terminal changes or the change which is terminus a quo, getting sick, and the intermediary change? To answer this question we must realize first that the so called intermediary change is an unknown quantity which can only be determined when the change which is the terminus ad quem has been determined. Secondly, it is obvious on a little reflection that the "intermediary" change is simultaneous with getting sick. Getting sick is the terminus a quo. If thing can change from that which is not in it; we cannot leave home unless we are at home. As soon as we are out of the house, we have left home. But if this "intermediary" change is to be per se the quality of that other change which is the terminus ad quem must be determined. The reason is that change is defined through its terms and principally through the terminus ad quem. Hence, the question of the simultaneity of changes must be posed as regards the two terminal changes.

But, as we have argued, far from the two terminal changes being simultaneously present in the same subject, it

seems that one merely follows on the other when the first has stopped. When the subject has got sick, then he will be moved by another change. But this mere succession of motions will not give us motion of motion per se, and this is what Aristotle wishes to prove, not by deduction from the preceding lines, but by the following line. It is manifest, he says, that when the subject has got sick, he will be moved by any other motion, for he can rest and not move at all.¹⁸

If we suppose that one motion merely follows on the other we cannot say that there is motion of motion per se. The reason is that when the first motion from health to sickness stops, it is obvious that it no longer exerts any influence over the subject qua motion. The subject is definitely sick. In that state, he may get well, get up and walk, die, study grammar, blush, or get well again. In short, he may then be moved by any other motion at all. But this other motion will not follow determinately on the motion from health to sickness. The reason is that once the subject is sick, he may rest and not move in any respect. For rest according to one genus of motion neither entails motion according to another genus nor another kind of rest. Thus, in so far as the motions merely follow on one another, the subject will be moved from getting sick to any other motion whatsoever, whether it is an opposite motion or not. In short, the motion which follows on getting sick will be an

¹⁸ Aristotle, Physics, Book V, 225 b 28

"undetermined" action.

But there cannot be a motion per se between undetermined terms, for a motion per se is a determined motion. A determined motion is one that is between determined terms. Hence, there can be no motion per se when the motions merely follow on each other. We cannot surely, say that two things which follow on each other in the most haphazard of fashions are per se and this is what we mean when we say that there is a determined motion between undetermined terms.

This is not, however, a refutation of the hypothesis. Aristotle is merely showing that one of the conditions of motion per se is that both of the terminal motions be simultaneously present in the subject. The second condition is the following. Just as there cannot be motion per se between terms that are undetermined, so the motion from which there is change cannot be contingent to the motion to which there is change.

This is what Aristotle says next; motion is always between non-contingent terms.¹⁹ At first sight it seems that he is only repeating what he said above. But above he said "any other", here he is saying "non-contingent". To say that a motion is non-contingent with another is vastly different from saying that it is "not just any other". The reason is, as we saw,

19 Ibid., 285 b 29

that "any other" motion might be an opposite or non-opposite motion, whereas a non-contingent motion is precisely an opposite motion. The reason is clear when we consider that "contingens" means touching together. The terms of a motion cannot coincide simultaneously in the same subject, else there would be no reason for motion.²⁰ It is only the opposition of the terms, as we have repeated incessantly, which makes motion determinate. Hence, first, if there is to be motion of motion per se the motion which is in place of the terminus ad quem must be simultaneously present in the subject with the motion which is the terminus a quo. Secondly, since motion is always between non-contingent terms, that is, between opposite terms, and the motion to which there is motion from the motion from health to sickness is itself from one term to another, it is obvious that it will be the motion opposed to getting sick, that is, change from sickness to health. This is impossible because it is impossible for a subject to be both sick and well at the same time and to be moved simultaneously to sickness and health.

²⁰ St. Thomas, Quodlibet Nonum, q. 4, art. 4: "Dicendum quod in omni motu oportet intelligere successiones et tempus per aliquem modum, et quod termini cujuslibet motus sunt sibi oppositi invicem, et incontingentes, ut patet in I Physic. (tex. comm. 64) Cf. note 14 supra (the reference to tex. comm. 64 given in the text of St. Thomas seems to be wrong, it should be tex. comm. 43)

Since this situation is necessarily involved in the action of motion *per se* in the sense in which one motion is the *per se* term of another, the motion of motion *per se* is itself impossible.²¹

It is, as we have intimated, the simultaneity of the motions which makes them *per se*. This is again forcefully brought out in the concluding paragraph which Aristotle appends to show how the action of motion *per se* is possible, even when the motions are opposite terms, such as ignorance and knowledge. Motion of motion is possible only in so far as the two motions inhere in (*συμβαίνουσι*) the same subject at different times, as, for example, when a person changes from remembering to forgetting, because the person who is the subject of the two motions at one time changes to knowledge and at another time to ignorance.²²

²¹ St. Thomas, in *Metaphysics*, lect. 12, n. 2301: "Et sic videtur duo contraria sequi: scilicet quod opposita conversione fiat de una permutatione in quocunque alieno, et quod non nisi in opposito. In quo sequitur alterius, quod simul duo mutatur aliquid ad unum oppositorum, mutatur in conversionem tanquam in aliud oppositum. Quod videtur impossibile: sequitur enim, quod simul intentio naturae tendat in opposita. Non igitur est possibile, quod per se mutetur aliquid de una permutatione in alienum."

²² Aristotle, *Physics*, Book V, 225 b 31-33

Hence, even if the motions are non-contingent, i. e., opposed, in themselves, they are per accidens if they are not simultaneous. Their continuance is due not to the motions themselves, but to the subject, who for some other reason changes from forgetting to remembering. The reason is clear. Opposite motions are not opposites unless referred to the same subject at the same time,²³ just as the terms of motion itself are referred to the same subject at the same time.

It may, however, be asked why the motion of motion is impossible while motion itself is not. Both seem to be between opposites which are referred to the same subject at the same time. The answer is that, on the one hand, motion, considered by itself, is being in potency. Opposites exclude each other only when fully in act. On the other hand a simple motion does not realize the simultaneous existence of the terminal acts that are opposites. Rather motion is the gradual throwing off of one and the gradual acquisition of the other, so that if the mobile is stopped at any point in the course of its movement it will always be only one thing in act, as when a body which is

23 Cf. St. Thomas, W. D. de Potentia q. 3, art. 2

turning white after being black is suddenly arrested in its change, it will be grey, not black and white.²⁴ The notion of motion, however, stipulates expressly that the mobile be simultaneously moved by two opposite motions toward two opposite terms. The end to which the mobile is thus moved is the simultaneous existence of opposites in the same subject. But this end is impossible and motion cannot terminate in what is impossible.

²⁴ St. Thomas, In III Physic., lect 5, n. 324: "De motu enim in rerum natura nihil aliud est quam actus imperfectus, qui est inchoatio quaedam actus perfecti in eo quod movetur: sicut in eo quod dealbatur, jam incipit esse aliquid albedinis. Sed ad hoc quod illud imperfectum habeat rationem actus, requiritur ulterius quod intelligamus ipsum quasi medium inter duo; quorum praecedens comparatur ad ipsum sicut potentia ad actum, unde motus dicitur actus; consequens vero comparatur ad ipsum sicut perfectum ad imperfectum vel actus ad potentiam, propter quod dicitur actus existentis in potentia, ut supra dictum est. Unde quodcumque imperfectum accipitur ut non in aliud perfectum tendens, dicitur terminus motus et non erit motus secundum quod aliquid moveatur; utpote si aliquid incipiat dealbari, et statim alteratio interrumpatur."