ways. One is the way in which St. Thomas takes it.[1]
According to this interpretation, Aristotle argues as
follows. It belongs to the wise man (metaphysician) to
determine those questions which have many difficulties.
But there are many difficulties about place both because
the properties of place seem to lead to different opinions
about it and because the ancients have not discussed it
well. Since, as we have said, the ancients thought that
metaphysics was natural science, and since metaphysics is
the science which understands the most difficult things,
according to their view it would follow that place must be
discussed by the natural philosopher.

136. According to the other interpretation,
Aristotle wishes here to warn the student of the difficulty
of the subject.

137. Of these two interpretations that of St. Thomas
is better because the difficulty of the subject is sufficiently
shown by what follows.

138. When he has given these arguments to show
that natural science must consider place, he begins his
actual study of place. As is his custom, he begins by giving
dialectical arguments about place, first concerning whether
it is, second what it is. First he gives arguments to show
that place exists. Of these, the first two are taken from

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[1] St. Thomas, IV *Physicorum*, Lect. I, n. 409(4).

the thing itself, the others from the opinions of others.[1]

139. The first argument is this.

The existence of place is held to be obvious from the fact of mutual replacement. Where water now is, there in turn, when the water has gone out as from a vessel, air is present. When therefore another body occupies this same place, the place is thought to be different from all the bodies which come to be in it and replace one another. What now contains air formerly contained water, so that clearly the place or receptacle into which and out of which they passed was something different from both.[2]

No comment concerning this text seems to be necessary for the present. From the obvious fact that things change place, place must be something, it must exist.

140. Aristotle's second argument from the thing itself is as follows.

Further, the typical locomotions of the elementary natural bodies — namely, fire, earth, and the like — show not only that place is something, but also that it exerts a certain influence. Each is carried to its own place, if it is not hindered, the one up, the other down. Now these are regions or kinds of place — up and down and the rest of the six directions. Nor do such distinctions (up and down and right and left, etc.) hold only in relation to us. To us they are not always the same but change with the direction in which we are turned: that is why the same thing may be both right and left, up and down, before and behind. But in nature each is distinct, taken apart by itself. It is not every chance direction which is 'up', but where fire and what is light are carried; similarly, too, 'down' is not any chance direction but where what has weight and what is made of earth are carried — the implication being that these places do not differ merely in relative position, but also as possessing distinct potencies. This is made plain also by the objects studied by mathematics. Though they have no real place, they nevertheless, in respect of their position relatively

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[1] St. Thomas, IV Physicorum, Lect. I, n. 410(5).
[2] Aristotle, IV Physics, Ch. I, 208b1.

to us, have a right and left as attributes ascribed
to them only in consequence of their relative position,
not having by nature these various characteristics.[1]

We saw certain aspects of this argument previously, when
we considered the infinite.[2] Not only is it true, as was
shown by the previous argument, that from our experience we
can be sure that place exists because we observe that
things change their places, but from our observation we
can also see that place has "a certain influence." There
are places to which certain things tend to move, if nothing
prohibets them. For instance, heavy things fall to earth.
From this it is plain that bodies are influenced by places.[3]

141. St. Thomas points out that this argument does
not indicate that a natural place attracts a body in any way
other than as an end attracts something.[4]

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[1]Aristotle, IV Physics, Ch. I, 298b8.

[2]See par. 110-113.

[3]Today we might be tempted to argue further that
bodies are influenced by their natural places because they
tend to follow their natural places, as bodies naturally
falling to the earth which goes around the sun. However,
below we will see there is a difficulty about this argument.
Places are supposed to be immobile. This will be a crucial
problem for us.

[4]"Non autem ex hoc ostenditur quod locus habeat
virtutem attractivam nisi sicut finis dicitur attrahere."
St. Thomas, IV Physicorum, Lect. I, n. 412(7). Max Jammer
remarks concerning this passage in Aristotle that for
Aristotle space (place) is like a field of force. (Concepts
of Space, Harvard University Press, 1954, page 17).
But of course, they are really very different.

142. As we stated above,[1] this distinction in places is not to be understood as being merely relative to us, but is supposed to be true absolutely. This can be seen from the fact that this distinction is not always the same relative to us. For instance, if I turn around, what was right before is now left. But no matter how I turn, bodies fall to the same place, which place changes its position relative to me as I turn about. This shows that the distinction in place is not just relative to us.

143. We can see more clearly that the distinction in physical places is not relative to us if we consider mathematical things in which the distinction is clearly such. This the way St. Thomas expresses it.

> But that "position" is said with reference to us in some things is shown through mathematical things, which indeed, although they are not in place, nevertheless have position attributed to them only with respect to us. Hence, there is no position in them according to nature, but only according to understanding, according to which they are understood in some order to us, either above or below, or on the right or left.[2]

If someone wishes to construct an equilateral triangle by means of two circles,[3] one of the circles will be partially to the left or right of the other, or above or below it. It makes no difference to the proof. Further, having constructed the triangle, if he whould face in the opposite direction, or even stand on his head, the triangle would

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[1] See par. 111.
[2] St. Thomas, IV Physicorum, Lect. I, n. 412(7).
[3] The Thirteen Books of Euclid's Elements, prop. I, Trans. by Heath.

remain related to him in the same way, that is, the part of the triangle which was on the right or above would remain on the right or above relative to him. Since this is not the case with the physical places which are up or down, we can see that physical places are not relative to us.

144. But one might ask whether mathematical things have position as they are in the intellect or as they are in the imagination. One might be led to suppose that if mathematical things have position at all, it must be that they have it as they are in the intellect, for mathematical things exist only in the intellect, not in the imagination. What is in the imagination is intelligible in potency only.

145. Further, from certain things actually taking place in mathematics one might easily be led to suppose that mathematical things do in fact have position (i. e. in the intellect). For instance, in order to prove his fourth proposition,[1] Euclid applies one triangle to another in such a way that the corresponding parts of one are applied to the corresponding parts of the other. This requires that they have position of some kind. Since geometry is supposed to be a science, and therefore be in the intellect, it seems to follow that triangles have position, at least

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[1] "If two triangles have the two sides equal to two sides respectively, and have the angles contained by the equal straight lines equal, they will also have the base equal to the base, the triangle will be equal to the triangle, and rhe remaining angles will be equal to the remaining angles respectively, namely those which the equal sides subtended." Ibid., prop. IV.

with reference to each other in the intellect itself.
Otherwise Euclid's demonstration would not belong to the
science of geometry. Since these positions do not change
relative to us when we turn about or move, they must be
relative to us.

146. However, it is impossible for triangles or
other figures to have position as they are in the intellect
itself. For in what would this position consist? It seems
suitable for triangles to have position, but the concept of
a triangle is not triangular, and it is the concept of
triangle that is in the intellect. The only way we can talk
of something immaterial having a spatial position is insofar
as the material thing upon which it operates has a position
with reference to other things. Therefore, whatever
position mathematical things have, they must have it as they
are in the imagination.

147. But if this is the case, how do we answer
the arguments given above to show that mathematical things
have position in the intellect, and how do we justify
Aristotle's remark? The science of mathematics is in the
intellect. But it is evident to anyone who has ever studied
geometry that it makes great use of the imagination. In
fact, mathematical judgment terminates in the imagination.[1]
Insofar as this is the case, what is in the imagination

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[1] "In mathematicis ideo oportet cognitionem secundum
judicium terminari ad imaginationem." St. Thomas, De Trinitate,
q. 6, a. 2.

can be called mathematical. This answers the argument
that only what is in the intellect can be called mathematical.
Imagination as used by mathematics can also be called
mathematical.

148. The second argument was that because certain
demonstrations in mathematics depend upon mathematical
things having position they must have position. Otherwise
the demonstrations would not be mathematical. They would
not belong to the science, which is in the intellect. The
answer to this objection is similar to that given above.
Mathematical things, insofar as they are in the intellect
and are therefore properly mathematical (belonging to the
second type of abstraction of the form), do not have position.
But mathematics makes use of certain operations performed
in the imagination. By observing these operations being
performed in the imagination (as it is under the control
of the intellect), the intellect is enabled to make a
judgment about something properly mathematical. Thus, when
two sides and the included angle of one triangle are equal
to the corresponding sides and angle of another, super-
imposing one triangle upon the other in the imagination
enables the intellect to make the judgment that the other
corresponding sides and angles are equal. The "demonstration"
of proposition four thus proceeds from operations performed
in the imagination, but these operations enable the intellect
to make a judgment concerning this property of triangle.
Therefore, the existence of "demonstrations" of this kind

in mathematics does not prove that mathematical things
must have position as they are in the intellect. Hence,
we may draw our conclusion that the mathematical things
to which Aristotle refers here as having position are in
the imagination. Yet, as we have shown, they are mathemat-
ical in a way.

149. In general, one must be careful to contrast
Aristotle's second argument here showing place to have a
certain power with the somewhat similar argument we discussed
when considering the infinite. There,[1] as we have seen,
Aristotle argued from the uniformity of directions in the
universe as a whole (everywhere in the universe down is
toward the earth) to the impossibility of an infinite
universe. We had to reject that argument as not being
sustained by present observation. But here Aristotle is
not arguing from a uniformity of directions or places in
the universe as a whole (at least not explicitly). The
only observation needed for the present argument is that
bodies do tend to move to various places. About this there
would appear to be no doubt. Since bodies move to definite
places, place must have some power or influence over the
body. Against this argument, it might be objected that
it need not be place which influence bodies. Rather, it

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[1]See par. 110-111. Aristotle, III Physics, Ch. V,
205b32; St. Thomas, III Physicorum, Lect. IX, n. 368(11).

might be another body. We will consider this question below. For the present, it need only be noted that this argument is to be taken as a dialectical one here.[1] The matter has not yet been settled. All that Aristotle has done thus far is to present certain notions which must be taken into consideration in determining whether place exists and what it is.

150. Having given these arguments from the thing itself to show that place exists, Aristotle gives two arguments from the opinions of others to show that it exists.[2] First he gives this argument.

> Again, the theory that the void exists involves the existence of place: for one would define void as place bereft of body. These considerations then would lead us to suppose that place is something distinct from bodies, and that every body is in place.[3]

Since the void is a place deprived of a body, those who propose the existence of the void must maintain that place exists, and that it is something distinct from sensible bodies.

151. Next he gives the following argument.

> Hesiod too might be held to have given a correct account of it when he made chaos first. At least he says: "First of all things came chaos to being, then broad-breasted earth," implying that things need to have space (a receptacle) first, because he thought, with most people, that everything is somewhere and in place. If this is its nature the potency of place must

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[1] St. Thomas, IV Physicorum, Lect. I, n. 410(5).
[2] Ibid., n. 413(8).
[3] Aristotle, IV Physics, Ch. I, 208b24.

be a marvellous thing, and take precedence of all
other things. For that without which nothing else
can exist, while it can exist without the others,
must needs be first; for place does not pass out of
existence when the things in it are annihilated.[1]

This argument from the opinion of Hesiod not only complements
the first argument Aristotle gave above from the thing
itself, but also the second. For besides implying that
things are in place, Hesiod also implied that place must
be a wonderful thing, and a thing of great potency since,
for Hesiod, place must be something prior to other things.
It can exist without them, but they cannot exist without it.
Thus place, being prior to things and having great potency,
ought to influence bodies in some way. And this was the
conclusion of Aristotle's second argument from the thing
itself.

152. Archytas, the Pythagorean, in large part,
had the view which Aristotle ascribes to Hesiod. In
describing his opinion Simplicius says:

> Since what is moved is moved into a certain place
> and doing and suffering are motions, it is plain that
> place in which what is done and suffered exists, is
> the first of things. Since everything which is moved
> is moved into a certain place, it is plain that the
> place where the thing moving or being moved shall be,
> must exist first. Perhaps it is the first of all
> things, since everything that exists is in a place
> and cannot exist without a place.[2]

153. When Aristotle has given these arguments
indicating that place does exist, he gives six arguments

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[1] Aristotle, IV _Physics_, Ch. I, 208b28.
[2] Cited by Max Jammer, _Concepts of Space_, page 8.

which indicate that place does not exist. For it is difficult to understand what place can be. Since it does not seem possible that place can belong to any genus, it seems that place cannot exist.

154. His first argument[1] is that since place must have three dimensions, it must be a body, for what is determined by three dimensions must be a body. But place cannot be a body because if it were, two bodies (namely the place and the body in place) would have to interpenetrate, which is impossible. Therefore, place cannot be anything. Therefore, place cannot exist. We will have considerable to say concerning certain aspects of the argument below.

155. This is Aristotle's second argument.

> Further, if body has a place and space (receptacle) clearly so too have surface and the other limits of body; for the same statement will apply to them: where the bounding planes of the water were, there in turn will be those of air. But when we come to a point we cannot make a distinction between it and its place. Hence if the place of a point is not different from the point, no more will that of any others be different and place will not be something different from each of them.[2]

Aristotle argues in this way. If the place of a body is a receptacle other than the body, the receptacles of the surfaces, lines and points of the body must be other than the surfaces, lines and points of the body. But there are no such receptacles (of surfaces, lines and points). Therefore, place is not a receptacle.

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[1] Aristotle, IV Physics, Ch. I, 209a5.
[2] Ibid., 209a7.

156. The major appears to be true from the fact
that as a body moves from place to place its surfaces,
lines and points move also. Thus, just as there was once
water where there is now air, so once there was the surface
of the water where there is now the surface of air. Hence
there seems to be the same need for a receptacle for the
surface, lines and points of the moved body as there is
for the body itself.

157. The minor is proved in this way. Since the
points of a body supposedly in a receptacle cannot be other
than their receptacle (since nothing but a point could be
a receptacle for a point and two points together - the point
in the receptacle and the receptacle itself - make a single
point), it follows that the lines and surfaces of a body
and hence the body itself cannot be other than their recept-
acles. Hence, place cannot be a receptacle.

158. But why does it follow from the fact that
points cannot be in a receptacle that surfaces and lines
and hence bodies cannot be in a receptacle? For it seems
that a point cannot be other than its receptacle for a
reason proper to point, namely because a point does not
have extension. This question might be answered in two
ways. One might say that the argument proceeds from the
opinion that bodies, surfaces and lines are made up of points.
If these were composed of points, it would follow that they
also could not be distinguished from their receptacles, for

just as Aristotle will argue below[1] that the elements of bodies must be bodies, so here one might argue that if a body is distinct from its receptacle, the elements of that body must be distinct from the elements of its receptacle. Since their elements (points, if bodies, surfaces and lines are considered to be composed of points) are not so distinct, the body itself cannot be distinct from its receptacle. Therefore, the place of a body cannot be a receptacle distinct from the body itself. Place cannot be a receptacle.

159. However, this is not a very satisfactory answer, for it supposes the argument to depend, at least in part, upon an error having nothing to do with place. Being understood in this way, it would be of minor use in leading the hearer to a knowledge of what place is. In fact a better explanation of this argument can be given. If "receptacle" (χώρα) were not taken in a general sense, but rather in the sense of a "space", why would it be true that a point could not be in some receptacle other than the point? When one line is added to the end of another, the result is something different from the original line, for an extension is added to an extension. However, when one point (receptacle) is added to another point (what is in the receptacle), no extension is added, for points have no extension. The two points are as if coextensive. For

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[1]Aristotle, IV _Physics_, Ch. I, 210a16; St. Thomas, IV _Physicorum_, Lect. II, n. 418(4). See par.160 below.

this reason two points together make only one point. But if the receptacle of a line or a surface is considered to be the space in which these are, by adding the receptacle to the line or surface there is likewise no extension added, for the receptacle and what is in the receptacle are the same extension in number. Hence, for the same reason that a point receptacle cannot be distinct from the point received in it, the spatial receptacle cannot be distinct from the line or surface received in it. Since it was shown previously[1] that if the place of a body were a receptacle distinct from the body, the surfaces, lines and points of the body would have to have receptacles distinct from themselves and since it has now been shown that there are no such receptacles for them, we must conclude that the place of a body cannot be a receptacle (if the receptacle is taken to be a space).[2]

160. The third argument Aristotle[3] gives is that everything which is, either is an element or is from elements, and since place cannot be an element or from elements, place cannot exist.[4] Place cannot be an element or from elements because everything of that sort is either corporeal

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[1]This is the major proposition of the argument presented above, par. 156.

[2]This would seem to be the proper interpretation of the argument because later on (Ch. V, 212b25) Aristotle answers this argument in a way consistant with this interpretation.

[3]Aristotle, IV Physics, Ch. I, 209a13.

[4]St. Thomas, IV Physicorum, Lect. II, n. 413(4).

or incorporeal. Place cannot be incorporeal because it has magnitude.[1] It cannot be corporeal, as was shown in the first argument above, for then there would be two inter-penetrating bodies. Because someone might suppose that place could be an element of bodies without being a body,[2] Aristotle adds that the elements of bodies are bodies, since no magnitude could be produced from elements intelligible in act. Hence, place cannot exist.

161. Aristotle's fourth argument[3] is that, although everything is the cause of something in some way, place cannot be the cause of anything in any way. It cannot be matter because nothing is composed of it. It cannot be form because then everything in the same place would have the same form. It cannot be the end because it seems to be for the sake of the bodies in it, rather than the bodies for its sake. It cannot be the efficient cause because it is the term, and the efficient cause is not the term of motion. Since there are only these kinds of causes, place cannot be a cause. Therefore it cannot exist.[4]

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[1] Descartes and Henry Moore disputed about this point. Descartes claimed that extension belongs to material things alone, whereas Moore claimed that both material and immaterial things are extended. (See Alexandre Koyré, From the Closed World to the Infinite Universe, Ch. V.). But such a consideration would take us far beyond the scope of the present work.

[2] Aristotle, IV Physics, Ch. I, 219a15; St. Thomas, IV Physicorum, Lect. II, n. 418(4).

[3] Aristotle, Ibid., 209a18.

[4] St. Thomas, IV Physicorum, Lect. II, n. 419(5).

162. Aristotle's fifth argument[1] (one taken from Zeno) is that if everything must be in place, if place exists, it too must be in place and so on to infinity. Since one cannot posit an infinite in act, as we have seen, it follows that place cannot exist.

163. St. Thomas expresses Aristotle's sixth argument in this way:

> Every body is in place and in every place there is a body, as is estimated from many things to be probable. From this it is taken that place is neither smaller nor greater than what is in place. Therefore, when what is in place grows, it must be that place grows. But this seems to be impossible, since place is a certain immobile. Therefore, place is nothing.[2]

164. Aristotle concludes from these six arguments that we must not only be in doubt as to what place is, but also as to whether it exists.[3]

165. When Aristotle has given arguments to show both that place does exist and that it does not exist, he begins to consider dialectically what place is. First he takes up arguments for and against place being a form,[4] first giving arguments to show that place is a form. The first of these arguments[5] may be summarized in this way.

> The form of a thing is the term of that thing. But the place of a thing is the term of that thing. Therefore, the place of a thing is the form of that thing.[6]

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[1] Aristotle, IV _Physics_, Ch. I, 209a23.
[2] St. Thomas, _Ibid._, n. 421(7).
[3] Aristotle, _Ibid._, 209a29.
[4] St. Thomas, _Ibid._, Lect. III, n. 422(1).
[5] Aristotle, _Ibid._, Ch. II, 209a31.
[6] St. Thomas, _Ibid._, Lect. III, n. 424(3).

The major premise is plain enough. It is the form of a
thing which terminates the magnitude of a thing to its
proper limits.[1]

But Aristotle goes to considerable length to explain the
minor premise. He compares place to being. As some things
are said to be _per se_ and some _per accidens_, so some things
(proper places) ar said to be place _per se_, others (common
places) are said to be place _per accidens_. As Socrates is
white because the surface which belongs to him is white,
so something is in its common place because it is in its
proper place, which proper place, in turn, is in the common
place. "I mean, for instance, that you are in the heavens
because you are in the air and it is in the heavens; and
you are in the air because you are on the earth, and similarly
on the earth because you are in this place which contains
no more than you."[2] The heavens are your common place.
Each of the other places, as they become more and more
restricted, come closer and closer to being your proper place.
When we finally reach the place "which contains no more
than you" we have reached your proper place. But if this
proper place contains no more than you, its limit is your

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[1]"Forma autem est terminus uniuscuiusque: quia per
formam terminatur materia uniuscuiusque ad proprium esse,
et magnitudo ad determinatam mensuram: quantitates enim rerum
consequuntur formas earum." St. Thomas, IV _Physicorum_,
Lect. III, n. 424(3). See also the treatise on the infinite
above, St. Thomas, III _Physicorum_, Lect. XIII, n. 402(3),
and I[a], q. 7, a. 3.

[2]Aristotle, IV _Physics_, Ch. II, 209a33.

limit. Now we can understand the minor premise. The
(proper) place of a thing is the term of that thing.

166. Of course, as St. Thomas points out, this
syllogism is sophistical, "for it is a syllogism in the
second figure from two affirmatives."[1] But one may ask
why Aristotle should use a sophistical argument. In the
case we saw previously,[2] the sophistical part of the argument
was not itself Aristotle's argument at all, but was merely
taken as the opinion of others. In this way, we justified
his use of it there, but this does not seem to be the case
here. For Aristotle has previously pointed out concerning
place that "we have inherited nothing from previous thinkers,
whether in the way of a statement of difficulties or a
solution."[3] Further, below Aristotle says, "I mention
Plato because, while all hold place to be something, he
alone tried to say what it is."[4] Since Plato's argument
is the next argument we will consider, not the present one,
it must be that the present argument is Aristotle's own,[5]
for it is an argument concerning what place is. Therefore,
it appears he should not have used it here, for a sophistical
argument is a logical error. Hence, it should be refuted in

[1] St. Thomas, IV Physicorum, Lect. III, n. 424(3).
[2] Par. 129-131.
[3] Aristotle, IV Physics, Ch. I, 206a35.
[4] Ibid., Ch. II, 209a16.
[5] Of course, this does not mean that Aristotle accepts
the argument as valid. It is merely an argument he uses to
lead one to the truth gradually.

logic, not in another science.

167. The source of this objection is a false
conception of logic. If logic considered merely the external
form of a syllogism, i. e., the distribution of words on
the page, the objection would hold. Then, from the fact
that a syllogism in the second figure with two affirmative
propositions is written on the page, logic could judge the
argument to be fallacious argument. But this is not what
logic considers. Logic deals with the order among our
concepts. This order, in any given case, cannot be known
without investigating how we conceive the things under
consideration, in this case term, form and place. In other
words, the question here is whether "form" is understood
to be convertible with "term" or not. To know this belong
to natural science. Thus, we can see that the judgment of
the argument cannot be made by logic insofar as logic is a
science we learn prior to learning natural science. In
fact, natural science, using logic as an instrument, will
determine whether this argument is valid or not. Therefore,
we can see that the objection does not hold. It is suitable
for natural science to consider this argument. Actually,
natural science determines the matter of this argument to
be such that the argument is sophistical. However, in
spite of the external form of the argument, we have a
tendency to identify the term which is the form of a thing
with the term which is its place. Furthermore, a previous

argument[1] indicated that the surface of a body in place
and the receptacle of this surface must be the same. Hence,
it seems that the two terms (the place and the form of a
body in the place) are the same in number. This argument
is a rather convincing one and because it leads to a
conclusion which is not so very far from the truth, it is
a useful one in leading someone to the truth.

168. Next Aristotle gives the argument of Plato.[2]
This argument, as with some of the others given previously,
begins from the opinion common among the ancients that place
is the space between the terms of the body containing what
is in place. Because this space remains the same when one
body leaves the container and another enters it, it seems
that this space is other from the bodies which are moved to
and from it. Since place is something separated from what
moves, and bodies move to and from it, it seems that place
is this space.[3] Although here also we have an invalid
syllogism, since the syllogism is in the second figure
with both premises affirmative, yet it seems valid both
because it is difficult to see what place could be and
because we do constantly imagine bodies moving in space as
if space were a place. This notion is still prevalent today
and we will consider it at much greater length below.

[1] Beginning par. 155.
[2] Aristotle, IV Physics, Ch. II, 209b6.
[3] St. Thomas, IV Physicorum, Lect. III, n. 425(4).

169. Starting from this opinion, Plato argued that place is matter.[1] St. Thomas presents this argument as follows:

> And this is what he says, that according as place seems to some to be the distance of some spatial magnitude, separated from every sensible body, it seemed that place should be matter. For the distance or dimension of a magnitude is other from the magnitude. For magnitude signifies something determined by some species, as a line is determined by points, a surface by a line and a body by a surface, which are species of magnitude. But the dimension of space is contained and determined under form, as body is determined by plane, that is, surface, as a certain term. But that which is contained under terms seems to be not determined in itself. But what is not determined in itself, but is determined through a form and term, is matter, which has the nature (rationem) of the infinite, because if from some spherical body the sensible passions and terms are removed by which the dimensions of the magnitude are given a figure, nothing remains except matter. Hence it remains that the dimensions themselves undetermined in themselves, which are determined through another, are matter itself.[2]

The argument may be brought together in this way.

> All dimensions are matter
> All place is dimensions.
> Therefore, all place is matter.[3]

We have considered the minor premise just above. It is a probable opinion. The major is proved in the following way.

> What is indeterminate is matter.
> All dimensions are indeterminate.
> Therefore, all dimensions are matter.

The major premise of this syllogism is shown in the first book of the Physics[4] and we will not consider it here. The

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[1] St. Thomas, IV _Physicorum_, Lect. III, n. 426(5).

[2] _Ibid._

[3] _Ibid._, n. 427(6).

[4] Aristotle, I _Physics_, Ch. VII, 191a8.

minor is established here. The indeterminacy of dimension
or distance is shown by the fact that dimension does not
terminate itself but is rather terminated by something else,
whether this term be the surface or figure of the contained
body or that of the containing body. An indication of this
is that in measuring a dimension, the reason we stop meas-
uring is not because of anything intrinsic to dimension,
which is homogeneous, but because of something else, we
come to a surface or some other distinction extrinsic to
dimension considered as such. Furthermore, dimension is
indeterminate with respect to or receptive of sensible
qualities. For these reasons, it seems that dimensions are
indeterminate and receptive in themselves and therefore are
matter. Thus, it may be concluded that place is matter
according to the syllogism given above.

170. This is a rather convincing argument because
of our desire to imagine what matter is. If one insists
upon imagining matter, what one will be most inclined to
imagine is a dimension or space. Thus, we may think of
dimension as being matter.

171. Next Aristotle gives five reasons to show
that place cannot be either matter or form. This is his
first argument.

> But it is at any rate not difficult to see that
> place cannot be either of them. The form and the matter
> are not separate from the thing, whereas the place can
> be separated. As we pointed out, where air was, water
> in turn comes to be, the one replacing the other; and
> similarly with other bodies. Hence the place of a
> thing is neither a part nor a state of it, but is

separable from it. For place is supposed to be
something like a vessel - the vessel being a transport-
able place. But the vessel is no part of the thing.
      In so far then as it is separable from the thing,
it is not the form: _qua_ containing, it is different
from the matter.[1]

We need not comment upon this argument. It stands suffic-

iently clear as it is.

172. This is his second argument.

Also it is held that what is anywhere is both itself
something and that there is a different thing outside
it.[2]

From the very fact that something is said to be in place,

it follows that place must be something outside that thing.

Since matter and form are not outside the thing, place

cannot be either of them.[3]

173. In his third argument[4] Aristotle shows a

contradiction in Plato's opinions. Since an understanding

of this argument requires a rather detailed knowledge of

Plato's philosophy, and because an understanding of it is

not absolutely necessary for an understanding of Aristotle's

position, we will not concern ourselves with it here.

174. Aristotle's fourth argument[5] is that if the

place of a thing were its matter or form, since these go

with the thing when it is moved from place to place, the

thing would have to have another place, one which does not

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[1] Aristotlem IV _Physics_, Ch. II, 209b22.
[2] _Ibid._, 209b32.
[3] St. Thomas, IV _Physicorum_, Lect. III, n. 429(8).
[4] Aristotle, _Ibid._, 209b33.
[5] _Ibid._, 210a2.

go with it. Hence, place would be in place. Since it is difficult to understand how this is possible or what purpose would be served by proposing a place which moves with a thing, place cannot be either matter or form.

175. Aristotle's fifth argument is that when something is corrupted, the parts of the essense (species) are in some way corrupted.[1] Since the matter and form of a thing are the parts of its essence (species), falling in its definition, they must be corrupted in some way then also. If the matter or form of a thing were its place, it would follow that when a thing was corrupted its place would be corrupted. Thus, if water came to be from air, the place of the water would not be the same place as that occupied by the air before. This is a very doubtful opinion. Therefore, place cannot be either matter or form.

176. With these five arguments, Aristotle concludes his dialectical treatment of place.

177. Next he determines the truth about place.[2] He begins to do this by considering and answering certain difficulties or opinions. In order to examine them properly, he first distinguishes eigth meanings of the word "in". This is what he says.

> The next step we must take is to see in how many senses one thing is said to be 'in' another.
> (1) As the finger is 'in' the hand and generally part 'in' the whole.

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[1] Aristotle, IV Physics, Ch. II, 210a9.
[2] St. Thomas, IV Physicorum, Lect. IV, n. 434(1)

(2) As the whole is 'in' the parts: for there is
no whole over and above the parts.
(3) As man is 'in' animal and generally species 'in'
genus.
(4) As the genus is 'in' the species and generally
the part of the specific form 'in' the definition
of the specific form.
(5) As health is 'in' the hot and the cold and
generally the form 'in' the matter.
(6) As the affairs of Greece centre 'in' the king,
and generally events centre 'in' their primary
motive agent.
(7) As the existence of a thing centres 'in' its
good and generally 'in' its end, i. e., 'in
that for the sake of which' it exists.
(8) In the strictest sense of all, as a thing is 'in'
a vessel, and generally 'in' place.[1]

In considering these eight meanings, one might note that

Aristotle does not present them in order from primary to

secondary analogue, from the more known to us to the less

known to us, as St. Thomas indicates.[2] In fact, it is

difficult to perceive the order in which Aristotle presents

these meanings or the reason for the order as it stands.

However, we can see a sort of order which is present.

First Aristotle gives the meanings of the word as there is

a reference to part and whole. Among these he considers

first those parts and wholes which are more known to us

because they are sensible, namely integral wholes and compos-

ing parts. Then he considers those parts and wholes which

are less known to us, universal wholes and parts. Next he

gives the meanings of the word as it refers to causes,

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[1] Aristotle, IV _Physics_, Ch. III, 210a13.
[2] St. Thomas, IV _Physicorum_, Lect. IV, n. 436(3).

taking up the causes in the order formal, efficient and final, which is the order of our certitude concerning causality in nature. Lastly, he gives the meaning of "in" as it refers to place. One might try to unify the order of the eight meanings by considering the first four as referring to the material cause, and by reducing place to a final cause, since one might suppose place to be the final cause of local motion. However, this would be an error, for place is not a final cause.[1] At any rate, we can say that Aristotle gives the meaning of "in" referring to place last because he is primarily interested in distinguishing this meaning from the others. Therefore, it is suitably given last so that, even as it is given, it will not be confused with the other meanings of the word.

178. When he has shown these different meanings of the word "in", Aristotle raises the following question.

> One might raise the question whether a thing can be in itself, or whether nothing can be in itself — everything being either nowhere or in something else.[2]

To answer this question, first Aristotle distinguishes what it means for a thing to be in itself but not primarily from what it means for it to be in itself primarily. Then he proves that a thing cannot be in itself primarily, whether per se or per accidens. Finally he solves some other problems.

179. Therefore, first Aristotle points out that

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[1] St. Thomas, IV Physicorum, Lect. VIII, n. 487(1).
[2] Aristotle, IV Physics, Ch. III, 210a25.

something can be understood to be in itself in two ways, primarily or not primarily but according to a part. He explains[1] that something can truly be said to be in itself in the second way, according to a part. The reason for this is that "a thing is described in terms of its parts, as well as in terms of the thing as a whole, e. g., a man is said to be white because the visible surface of him is white, or to be scientific because his thinking faculty has been trained."[2] Thus, when a thing is composed of parts, one of which is in another, the whole can be said to be in itself, being inside by virtue of one of its parts and outside by virtue of another of its parts, the second containing the first. Thus, if a jar full of wine were taken as a single whole, it would be in itself in this way. The jar full of wine would be the contained by virtue of the wine, the container by virtue of the jar.[3]

180. But when something is said of something primarily, it is not said of it by virtue of a part of it, but by virtue of the whole.[4] Thus, the jar of wine is not in itself as a whole, but one part is in another; the wine is in the jar. This can be seen more clearly if we consider the wine, the parts of which are at least less evident. One would not consider the wine to be in itself. The same thing

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[1] Ibid., 210a27.
[2] Ibid., 210a28.
[3] St. Thomas, IV Physicorum, Lect. IV, n. 438(5).
[4] For a somewhat parallel consideration see St. Thomas, V Physicorum, Lect. I.

is true of anything taken as a whole, it is not in itself.

181. Having shown what it means for a thing to be in itself primarily and what it means for it to be in itself according to a part, and having shown that something can be in itself according to a part, Aristotle proves it cannot be in itself primarily, either per se or per accidens. He proves it cannot be in itself primarily and per se by an induction and by a reason. In the induction he proceeds from the various meanings of "in" which have been given above. For nothing can be an integral whole and a part of this same whole, or a genus and a species of this same genus, or a form and the subject of this same form, etc. Since nothing can be both that in which something is and that which is in it according to any of the meanings of "in", it must be that nothing can be in itself primarily and per se.[1]

182. Next, he shows by a reason that a thing cannot be in itself primarily and per se.[2] His argument consists in reducing this position to the absurd. For if a thing were in itself primarily and per se, it would have to be that within which, and that which is within in the same respect. Otherwise it would not be in itself primarily and per se, but according to a part (and thus not primarily) or by virtue of something else (and thus not per se). This becomes more clear if we consider one of the meanings of "in" we

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[1] Aristotle, IV Physics, Ch. III, 210b8.
[2] Ibid., 210b9.

have mentioned, that of "in" a vessel, using the instance
of a jar full of wine, the wine must be in the jar precisely
as the wine is not distinct from jar, and the jar must
contain the wine not as it (jar) is a jar but as it is wine.
Otherwise, it would not be container and contained in the
same respect. Since this is plainly impossible, not only
for this instance but also for every other instance of this
kind and for every other way in which a thing can be "in"
something, a thing cannot be in itself primarily and per se.

183. When he has proved that nothing can be in
itself primarily and per se, he proves it cannot even be
in itself primarily and per accidens.[1] Something is said
to be in another per accidens if it is in that thing by
virtue of something else. Thus a man is in the sea because
he is in a ship which is in the sea. Still, this man is
in the sea primarily because it is not only a part of him
which is in it, but the whole of him. But if something is
in itself primarily and per accidens, there must be two
things involved, namely itself and that by virtue of which
it is in itself. In the example used above, if the jar
were in itself in this way, both the wine and the jar must
be in the jar. At first, it does not seem impossible for
both the jar and the wine to be in the jar, just as it is
not impossible for a man and a ship both to be in the sea.

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[1]Aristotle, IV Physics, Ch. III, 210b18.

But the man is separated from the sea by the ship, that is why we say he is in the sea _per accidens_, whereas the jar (as contained) cannot be separated from the jar (as container) by the wine. For if it were, the jar, being separated from itself, would not be one jar but two, or it would be in itself only by virtue of a part (the part in the wine being the contained part, the part outside the wine the containing part). In the first case, the jar would not be in itself, but rather one jar would be in another, in the second, the thing would not be in itself primarily, but rather by virtue of a part.[1] Therefore, it is impossible for a jar to be in itself primarily but _per accidens_. In a similar way, it is impossible for anything to be in itself primarily but _per accidens_ according to any other meaning of the word "in". For instance, a genus cannot be in itself by virtue of one of its species, for then the genus would have to be separated from itself by another of its species, which would make it not one thing but two, one having more act than the other. Therefore, we may conclude generally that nothing can be in itself primarily, either _per se_ or _per accidens_.

184. When he as proved that nothing can be in itself primarily, Aristotle solves two difficulties. First, he answers Zeno's problem.[2] Zeno argued that if place is something, it must be in something, i. e., place, and that place

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[1] Which we have previously admitted to be possible.
[2] See par. 162. It will be answered more completely toward the end of the treatise on place.

in another to infinity. Aristotle argues here that place
may indeed be in something else, but according to a different
meaning of the word "in", for instance as a form is in matter.[1]
Thus Zeno's objection offers no problem to us, but of course,
this answer could not be given to it until the various
meanings of "in" had been distinguished.

185. The second difficulty Aristotle solves here is
one which was taken up just a few pages earlier, namely
whether place can be the matter or form of what is in place.
This solution may be summarized in this way. If the place
of a thing were the matter or form of that thing, what is in
place would be in itself primarily and per se. But a thing
cannot be in itself primarily and per se. Therefore, place
is not the matter or form of what is in place.[2] We have
just proved the minor premise. The major can be seen if one
notes several things. First, we are considering "in" only
insofar as it refers to place and what is in place. Further-
more, insofar as a thing is in its matter or form, it is in
itself, because the matter and the form of a thing are not
distinguished from a thing as being separated from it as a
whole or from a part of it. Now, if the place of a thing
is either its matter or its form, the thing must be in itself
primarily, both because the place of a thing is the place
of the whole, not the place of a part, and because the matter

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[1] St. Thomas, IV Physicorum, Lect. IV, n. 443(10).
[2] Ibid., n. 444(11).

and form of a thing, being parts of its definition (and not quantitative parts), are present in the whole.[1] It must also be in itself _per se_, for what is in itself _per accidens_ is separated from itself by some third thing by the mediation of which it is in itself (as the sailor in the sea _per accidens_ is separated from the sea by a ship in which he is), as has been shown previously.[2] Since the matter and form of a thing are not so separated from the composite, a thing cannot be in its matter or form primarily but _per accidens_. Therefore, if a thing is going to be in its matter or form as in a place, the thing must be in itself primarily and _per se_. Since we have shown this to be impossible,[3] we must conclude that a thing cannot be in its matter or form as in a place.

186. Yet, having distinguished the various meanings of the word "in", we can easily see how someone might make the mistake of thinking that the matter or form of a thing is its place for such a person has confused these various meanings. For instance, the form of a thing is in the matter of a thing according to one meaning of "in" (the fifth Aristotle gives) and the matter (part) is in the form according to another meaning (the first meaning Aristotle gives). Thus, according to different meanings of "in",

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[1] This would seem to be what St. Thomas is referring to when he calls matter and form the intrinsic parts of a thing. "...materia enim et forma sunt aliquid locati sicut partes intrinsecae eius." St. Thomas, IV _Physicorum_, Lect. IV, n. 444(11).

[2] Beginning at par. 183.

[3] Beginning at par. 132.

the whole (subject) is in the form and the whole (form) is
in the matter, but not according to place, and not primarily,
but through another, i. e. as one part is in another. Thus,
Aristotle's solution of the argument non only shows the
opinion proposed to be false, but implicitly also gives
the reason why the error was made.

187. When he has considered these doubts, he lists
five suppositions which will be used in defining place.

> Let us take for granted about it the various
> characteristics which are supposed correctly to belong
> to it essentially. We assume then -
> (1) Place is what contains that of which it is the
> place.
> (2) Place is no part of the thing.
> (3) The immediate place of a thing is neither less
> nor greater than the thing.
> (4) Place can be left behind by the thing and is
> separable.
> In addition:
> (5) All place admits of the distinction of up and
> down, and each of the bodies is naturally carried
> to its appropriate place and rests there, and
> this mades the place either up or down.[1]

Everyone, no matter what he thinks place is, admits that it
must be some sort of container. Further, place cannot be a
part of what is in it because when a thing moves, its parts
move also, whereas its place does not. That the immediate
(or proper) place of a thing is neither greater nor less
than the thing would be accepted by anyone once the distinction
previously made[2] between proper and common place has been

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[1] Aristotle, IV _Physics_, Ch. IV, 210b43. St. Thomas
combines the first and second into one supposition. See St.
Thomas, IV _Physicorum_, Lect. V, n. 446(2).

[2] Aristotle, IV _Physics_, Ch. II, 209a31. St. Thomas,
IV _Physicorum_, Lect. III, n. 423(2). See above par. 165.

considered. Further, if place were not separable from what
is in it, we would have no reason to suppose that place
exists. And that places are distinguished by up and down
is indicated by the natural motion of things up and down.[1]
The place of a thing, therefore influences it.

188. Next, Aristotle shows the kind of definition
one ought to seek. This is what he says.

> We ought to try to make our investigation such as
> will render an account of place, and will not only solve
> the difficulties connected with it, but will also show
> that the attributes supposed to belong to it really
> belong to it, and further will make clear the cause of
> the trouble and of the difficulties about it. Such is
> the most satisfactory kind of exposition.[2]

A definition, and hence our definition of place, ought to
show what the thing defined is, solve the difficulties about
it, manifest the properties of what is defined, and show
why there is disagreement about it.

189. Next, Aristotle considers four things which
are necessary for investigating the definition of place.
This is what he says first.

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[1] As it was true concerning certain of Aristotle's
arguments about the infinite, so it is true concerning this
last supposition (that place is distinguished by up and
down) that he is proceeding here from the opinion that there
is no fifth element. In this respect St. Thomas says,
"Sed hoc dicit secundum eorum opinionem qui non ponebant
aliquod corpus praeter naturam quatuor elementorum: nondum
enim probaverat corpus caeleste esse neque grave neque
leve, sed postea hoc probabit in primo libro de Caelo."
IV Physicorum, Lect. V, n. 446(2).

[2] Aristotle, IV Physics, Ch. IV, 211a6.

First then we must understand that place would not have been thought of, if there had not been a special kind of motion, namely that with respect to place. It is chiefly for this reason that we suppose the heavens also to be in place, because it is in constant movement. Of this kind of change there are two species – locomotion on the one hand and, on the other, increase and diminution. For these too involve variation of place: what was then in this place has now in turn changed to what is larger or smaller.[1]

What Aristotle has said here is sufficiently plain without further explanation, although we will see below that there is a difficulty concerning how the heavens can move.

190. Second, Aristotle points out[2] that some things are moved _per se_ (for instance some whole body) and some things are moved _per accidens_. Those things which are moved _per accidens_ are either such that they can be moved _per se_ but it happens they are not (as a nail, which can be moved _per se_, but which, when it is part of a ship, is only moved _per accidens_) or they are such that they can be moved according to place only _per accidens_ (as whiteness or science).

191. We might add here that as things are moved, so we may say they are in place, i. e. what is moved _per se_ is in place _per se_, what is moved _per accidens_ is in place _per accidens_.[3]

192. Third Aristotle says:

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[1] Aristotle, IV _Physics_, Ch. IV, 211a12.
[2] _Ibid._, 211a18.
[3] "Hoc autem induxit, quia hoc modo aliquid per se vel per accidens, actu vel potentia natum est esse in loco, sicut et moveri." St. Thomas, IV _Physicorum_, Lect. V, n. 450(6).

> We say that a thing is in the world (heavens) in the sense of in place, because it is in the air, and the air is in the world (heavens); and when we say it is in the air, we do not mean it is in every part of the air, but that it is in the air because of the outer surface of the air which surrounds it; for if all the air were its place, the place of a thing would not be equal to the thing - which it is supposed to be, and which the primary place in which a thing is actually is.[1]

Given that the primary (or immediate) place of a thing is equal to that thing, as we have seen above,[2] when we say that A is in B although B is bigger than A, we must mean that A is not in B primarily, but rather it is in B by virtue of some part of B, which part is equal to A. This part must be the surface of B which surrounds A. Otherwise, the primary place of a thing would not be equal to that thing.

193. Finally, Aristotle gives the fourth thing which is necessary for investigating the definition of place. First he presents it. Then he proves it by two arguments. This is the way Aristotle proposes it.

> When what surrounds, then, is not separate from the thing, but is in continuity with it, the thing is said to be in what surrounds it, not in the sense of in place, but as a part in a whole. But when the thing is separate and in contact, it is immediately "in" the inner surfaces of the surrounding body, and this surface is neither a part of what is in it nor yet greater than its extension, but equal to it; for the extremities of things which touch are coincident.[3]

What contains may or may not be actually divided or separated from what is contained. If the container is actually

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[1] Aristotle, IV Physics, Ch. IV, 211a24.

[2] See par. 165 and 187.

[3] Aristotle, IV Physics, Ch. II, 211a29.

divided from what is contained, the contained is in the
container as in place. If the container is not actually
divided from what is contained, then the contained is in
the container as a part is in a whole. As a clarification
of what Aristotle means by this paragraph, we will give
St. Thomas' commentary on it.

> Therefore, he says first that when the container is
> not divided from the contained, but is continuous with
> it, it is not said to be in that as in a place, but as
> a part in a whole, as if we say one part of the air to
> be contained by the whole air. And he concludes this
> from the preceding, because where there is a continuum,
> there is no extreme in act one can take, which he said
> above to be required for place. But when the containing
> is divided from and is contiguous to the contained, then
> the contained, namely, is in place, being in the extreme
> of the container primarily and per se. That container,
> I say, which is not a part of it, is neither greater
> nor less according to dimension, but equal through this,
> that the extremes of the things touching are together.
> Hence it must be that their extremes are equal.[1]

From this explanation, it is plain that St. Thomas understands
Aristotle's "not separate" as continuous and his "separate"
as at most contiguous. Thus, from these remarks it seems
that if the contained is continuous with the container, it
is in it as a part is in a whole (considering those things
to be continuous which have a common term[2]). On the other
hand, if the contained body and the container are contiguous
(i. e. if they have their extremes together[3]), the contained

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[1] St. Thomas, IV Physicorum, Lect. V, n. 452(8).

[2] "Continuum est cuius partes ad unum terminum commu-
nem copulantur." St. Thomas, III Physicorum, Lect. I, n. 277(3).
Also "Cum enim unus et idem fiat terminus duorum quae se
tangunt, dicitur esse continuum." St. Thomas, V Physicorum,
Lect. V, n. 691(8).

[3] "Tangere autem se dicuntur, quorum sunt ultima simul."
Ibid., n. 685(2).

is in the container as the placed is in place.

194. One must note that in the passage just cited St. Thomas remarks that "where there is a continuum, there is no extreme in act one can take." Unless the continuum is actually divided, it does not have actually distinct parts because there are no actual terms of these parts. Further, when the parts are actually distinct parts, the continuum is no longer one continuum, otherwise St. Thomas could not say that "where there is a continuum, there is no extreme in act one can take."[1] Thus, we can say that a thing is contained by another as a part is contained by a whole when this part is only a part in potency, and as what is in place is contained by its place when the part is an actual part, i. e., when it has its extremes in act.

195. But it is also possible for something to be in another as a part is in a whole and yet to be an actual part. For a man is in the universe as a part is in a whole and yet he is an actual part, not merely a potential part, for he has extremes in act. Does not this contradict what we have just said, that if a part is in act it is contained by a place, if in potency it is contained as a part by a whole?

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[1]Indeed, if the parts of the continuum referred to in its definition were actual parts, each of these parts, being continuous, would have parts, and so on to infinity. Thus, we would have an actual infinity, which we have previously shown must not be proposed. Therefore, the parts referred to in the definition of the continuum must be potential parts only. But we will see below that there is a way in which a continuum has actual parts.

196. There is no contradiction here. When we say that a potential part is contained as a part is contained by a whole we mean it is contained only in this way. It is not contained in a place. When we say that an actual part is contained as the placed is contained by its place we do not thereby deny that it may also be contained as a part is contained by a whole. In order to understand what Aristotle and St. Thomas mean, we must keep their intention in mind. They wish to lead us to a knowledge of what place is. For this reason they intend to show us here that the parts of the continuum are not in place whereas things which are contiguous, in contact, are in place. The fact that contiguous things may also be contained as parts in a whole is aside from their intention, and for this reason they do not mention it.

197. That the parts of the continuum cannot be in place is established from the distinction given just previously between proper place and common place.[1] For it was established there that the proper place of a thing is equal to the thing. But this is impossible if the body in the place does not have its extremes in act, for it has no define size to which its place could be equal. Therefore, the parts of the continuous cannot be in place. Things which are contiguous can be in place, however, because they have extremes in act.

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[1] Par. 192.

In fact, in order for a thing to be in place it must be precisely contiguous with a container, it must have its extremes together with those of its container, but this will be seen below.

198. When Aristotle has made this distinction he proves it in two ways. For the sake of greater detail we will give St. Thomas' commentary on each of them. This is his first argument.

> The first of these is that the contained which is continuous with the container is not moved in the container, but together with it, as a part together with a whole, but when the contained is divided from the container, then it can be moved in it, whether the container be moved or not; for a man is moved in a ship, whether it is resting or is moved. Therefore, when something is moved in place, it follows that the place is a divided container.[1]

We know that the part of a continuum is in the continuum only as a part in a whole because the part is moved when and only when the whole is moved. On the other hand, we know a thing is in that to which it is contiguous as in a place because it can be moved whether or not that to which it is contiguous is moved.

199. But how do we know this? Consider the definitions of the continuous and the contiguous we gave above. Those things are continuous which have a common term. Those things are contiguous which have their terms together. In the light of these definitions we can easily see why things which are

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[1] St. Thomas, IV Physicorum, Lect. V, n. 453(9); see also V Metaphysicorum, Lect VII, n. 852.

continuous cannot be moved separately. If one thing is
moved separately from another, the whole of the one must be
moved and the whole of the other not moved. But things
which are continuous have a term in common. Therefore,
let us suppose that one part of a continuum is moved and
the next part is not. If the common term is moved, as it
must be if the moved part is really moved, the part of the
continuum supposed not to move must move, for if its term
moves it must move. On the other hand, if the term does
not move, then the part which was supposed to move cannot
move, for if its term does not move, it does not move.
Therefore, the whole continuum either moves as one or is at
rest as one. But with the contiguous this problem does not
exist, for these things do not have a common term, only
terms together. Hence, it is only the contiguous that can
move separately from what is around it. Therefore, it alone
is in its container as in a place for it alone can move
from its container.[1]

200. The second argument he gives is explained by
St. Thomas as follows:

> And he says that when the contained is not divided
> from the container but is continuous with it, then it is
> said to be in it as a part is in a whole, as sight is as
> (quasi) a formal part in the eye, and the hand as an
> organic part in the body. But when the divided is
> contained by a container, then it is said to be in it
> as in a vessel, as water in a jar and wine in a cup.
> The difference between these is that the hand is moved

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[1]Par. 189.

with the body but not in the body, but the water is moved in the jar. Therefore, since it was said above that to be in a place is as to be in a vessel, but not as a part in a whole, it follows that place is as a container divided from the contained.[1]

The parts of a continuum are not said to be contained as by a vessel, whereas what is contained as by a place is considered to be contained as if by a vessel or receptacle. Therefore the parts of a continuum are not in place but are only in the continuum as a part is in a whole.[2]

201. When Aristotle has given the things presupposed to the definition of place, he determines this definition. First he determines the genus of place, then its difference.[3] This is what he says first.

It will now be plain from these considerations what place is. There are just four things of which place must be one - the shape (form), or the matter, or some sort of extension between the bounding surfaces of the containing body, or this boundary itself if it contains no extension over and above the bulk of the body which comes to be in it.[4]

From the things we have said about place so far, we can see that place must be one of four things, the form or matter of what is in place, the extension within the container or the bounding surface of the container. There is nothing else

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[1] St. Thomas, IV Physicorum, Lect. V, n. 454(10).

[2] Concerning the text of St. Thomas, one might note that he gives "formal part" before "organic part" in leading us to a knowledge of material part, i. e., a part of a continuum because an organic part is more known, and closer than a formal part to the kind of part he desired to make known here. Thus he proceeds from what is farthest removed to what is closest to what he wishes to manifest, and from what is more known to what is less known.

[3] St. Thomas, IV Physicorum, Lect. VI, n. 455(1).

[4] Aristotle, IV Physics, Ch. IV, n. 211b5.

one can think of which could fit the characteristics of place, for instance that a proper place is equal to what is in it and that the notion of place arises from the observation of motion according to place. Now Aristotle eliminates three of these. This leaves the fourth as the genus of place.

202. First Aristotle considers the possibility that the form of a thing is its place. This is what he says:

> The shape (form) is supposed to be place because it surrounds, for the extremities of what contains and of what is contained are coincident. Both the shape and the place, it is true, are boundaries. But not of the same thing: the form is the boundary of the thing, the place is the boundary of the body which contains it.[1]

Both place and form or shape contain what is in place. For this reason the two might appear to be the same thing. But they are different. Form is the limit of the thing in place. Place is the surface of the containing body.

203. We must be careful how we understand this argument. Presented as concisely as Aristotle gives it, it might seem that he is arguing in a circle. He proves that the genus of place is the "term of the containing body" by eliminating all other possibilities.[2] But here it seems that he eliminates one of the possibilities by showing that it is not identical with what he ultimately determines the genus of place to be. Thus his argument would appear to be

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[1] Aristotle, IV _Physics_, Ch. IV, 211b10.
[2] St. Thomas, IV _Physicorum_, Lect. VI, n. 466(12).

of this kind: C can only be either A or B. C cannot be A because we will ultimately determine that it is B and we know that A is not B. Therefore C is not A. Therefore C is B.

204. Perhaps the best way to understand Aristotle's argument is to understand him as arguing as follows. The form or shape of a thing is together (simul) with the surface of the containing body and therefore the two appear to be the same thing. In fact, however, the two are contiguous and therefore distinct, as is shown by the fact that one can move while the other does not. But place contains as the surface of the containing body, i. e. as something separable from the body contained, because the bodies contained by places move from place to place. Since the form of a thing is not separable from the thing, place cannot be the form of the thing in place.

205. Having proved that place cannot be the form of what is in place, Aristotle considers whether place can be the space between the boundaries of the container. In doing this, first he explains why place is thought to be a space. Second he gives arguments against its being a space.[1] This is what he says first:

> The extension between the extremities is thought to be something, because what is contained and separate may often be changed while the container remains the same (as water may be poured from a vessel) – the assumption being that the extension is something over

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[1] St. Thomas, IV Physicorum, Lect. VI, n. 460(6).

and above the body displaced.[1]

In order to help us understand this argument, which Aristotle expresses so terribly concisely, we will also give the commentary of St. Thomas on this point.

> Therefore he says first that because a body contained by a place and divided from it is changed many times from place to place, and bodies succeed one another in the same place so that the container remains immobile in the way in which it happens when water goes out from a vessel, on this account it seems that place is some space in the middle between the extremes of the containing body and especially (ac) if something were there in addition to the body which is moved from one place to another. Because if there were no other thing there except that body, it would follow either that place would not be other from the placed, or that that which is a middle between the extremes of the container could not be place. But as place ought to be something in addition to the body contained, so it seems that place ought to be something in addition to the containing body from this that place remains immobile but the containing body and all which is in it can be changed. But nothing else can be understood to be (place) in addition to the body containing and the body contained except the dimensions of space existing in no body. Thus, therefore, from this that place is immobile it seems that place is space.[2]

It is necessary to note this position and its refutation very carefully, for they will be extremely important for us later on.

206. The argument which Aristotle (and St. Thomas in a more explicit fashion) presents here presupposes that the place of a thing is divided from the thing. From what has been said previously we cannot doubt that this is true. But what can we think of which could be the place of a thing,

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[1] Aristotle, IV _Physics_, Ch. IV, 211b13.

[2] St. Thomas, IV _Physicorum_, Lect. VI, n. 460(6).

being separable from it? The form or shape of a thing has already been excluded, as not being separable from what is in place. It would seem that the matter of a thing must be excluded for the same reason, for it too is inseparable from that of which it is the matter.[1] There remain, then, only two possibilities, that the place of a thing may be the boundary of the container, this boundary being contiguous to the exterior surface of what is in place and that it may be the space contained by the boundary of the container, this space being coextensive with what is in place and yet separable from it. But it seems that the first of these possibilities must be excluded also. For a containing body, and hence its inner (containing) surface may also be born from place to place. If the place of a thing were the surface of a containing body, it would follow, therefore, that place would be mobile and therefore itself would have to have a place in some respect, one to which and from which it could move, which would be strange indeed. For if the first place is in a second place, what about this second place? Is it in a place also? Therefore, it seems that the only thing place can be is the dimensions in which a body exists and which are separable from that body. These dimensions may be called a space. Such a space must interpenetrate with the dimensions which are inseparable from the body in the

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[1] See par. 171-175, 185-186.

space and be immobile, i. e., whether the body in place or
the surrounding body is moved, the space between the bounda-
ries of the containing body cannot be moved. Otherwise we
would have to exclude this space from being place for the
same reason we excluded the boundary of the container from
being place, i. e., because it is mobile. This space between
the boundaries of the containing body must not depend upon
nor be inseparable from the body containing what is in place,
because the space remains when the container has been moved.

207. Perhaps we can acquire a better understanding
of what is meant by this space in recalling certain things
we said when we considered Aristotle's treatment of the
category of quantity.[1] There we said that in order to obtain
an idea of what the genus quantity consisted in, Aristotle
took up the species of quantity, which he distinguished by
the various conceptions of measurement which give rise to
them. We noticed there that Aristotle distinguished the
place or space which a body occupies from the body itself as
two different species because the two arise from different
conceptions of measurement. The conception of measurement
which gives us the species, body, is that of the measurement
by which we think we obtain the dimensions of the body measured.
We perform this measurement because we want to know the
dimensions of the body measured. The act of measuring which

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[1] See par. 22-26.

gives us the species, <u>place</u> or space, might appear identical in its performance, but the measurement is considered differently. For sometimes we take a measurement not in order to know the dimensions of the body we are measuring but rather to know the distance between certain surfaces or points, such as when we take the measurements in a room to discover whether we have room for some particular furniture. We do not consider ourselves to be measuring the air in the room, though in measuring, our tape measure may in fact be located in the air between two walls. A sign of this distinction in measurement is that when we have finished our measurement we say we have so many feet of space, not so many feet of air. Thus we have the concept of logical space or place. But one must note that though we do have these different ways of measuring, this does not mean, nor does logic tell us that there are in reality different existing things corresponding to these ways of measuring. From these different conceptions we cannot judge that this spatial dimension exists in any way independently of the air in the space.

203. Now, at first glance these two places or spaces, the one which is a species of the category of quantity and the one we are now considering in the <u>Physics</u>, would seem to be the same thing arrived at from two points of view, but in fact it is not that simple. On the one hand, we have pointed out that place seems to be more the space in which the mobile is than the containing surface of the surrounding body because

the containing body is itself moved. From this it seems that the space referred to here is immobile in a sense that the containing body is not. But logical place or space is not immobile in this way. If I should measure the space in a room and then the house should be moved elsewhere, I still have the same space in it. This is the case because logical place or space is determined by the surrounding body, the sides of the room, since what we are trying to discover when we perform the measurement is the space between the sides of the container precisely as it is contained by the container. We want to know how much can be put into the room, not how much space the room itself occupies. We are not trying to discover some dimensions separable from the room. Now, since this logical place or space is mobile, it seems that it must be distinct from the physical space described above, which space is immobile even though the body bounding it is mobile.[1]

209. On the other hand, Aristotle gives two arguments to show that place cannot be dimensions or a space. Whereas the first of these arguments is a refutation of the view that place is a space of any kind, the second argument is a refutation of the view that place is a space in some way mobile. For this reason, it seems that the "space" Aristotle is considering here is a mobile space.

210. Which kind of space, then, are we to think

Aristotle and St. Thomas are considering here? There are three ways in which what they say might be understood. First, it might be supposed that they are only talking about a space which is totally immobile. We must reject this interpretation because then Aristotle's second refutation would be entirely beside the point. Second, it might be supposed that they are only talking about a space or place which is mobile, such as that discussed under the category of quantity. This interpretation must be rejected also, for the argument Aristotle proposed as indicating that place must be space (as made more explicit by St. Thomas) proceeded by denying that anything in the containing body could be place because the containing body is mobile. Since this very same argument would prove that a mobile space could not be place and since the entire argument is proposed to show that place is space, it must be that the space referred to in the argument is not mobile.

211. Therefore, what they say here must be interpreted in a third way. According to this third interpretation, when Aristotle and St. Thomas give the argument to show that place is space, by "space" they mean an immobile space. The first refutation of the opinion that place is a space refers to space of this kind primarily, but is also applicable to the other kind of space (a mobile space). But because physical space as something known to us determinately is always associated with and determined by some body (e. g. a jar),