

Ancient
Commentators
on Aristotle

GENERAL EDITOR: RICHARD SORABJI

SIMPLICIUS:
On Aristotle Physics
4.1–5 and 10–14

Translated by
J.O. Urmson

B L O O M S B U R Y



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On Aristotle Physics 4.1-5, 10-14

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Introduction

Richard Sorabji

This book is a companion to J.O. Urmson's translation of Simplicius' *Corollaries on Place and Time*. Simplicius separated off his own theories of place and time and their pre-history, and treated them in two corollaries distinct from the main commentary. The commentary itself is translated here; thanks to the separation, it is much more directly addressed to Aristotle.

Aristotle's account of place in the first five chapters is surprising, because it makes place two-dimensional. My place is the (two-dimensional) inner surface of my surroundings.¹ Aristotle also thinks that the upward motion of air and fire and the downward motion of the other two elements, earth and water, is partly explained by the natural places to which they tend. Place thus has power (*dunamis*) of its own.²

Both views were questioned by Aristotle's immediate successor Theophrastus, whose arguments Simplicius records in the *Corollaries*.³ The first in particular, the idea of place as a two-dimensional surface, remained unattractive to most Greek thinkers, and was revived only in the Latin West of the Middle Ages.

Aristotle's account of time in the last five chapters is challenging in a different way, because he starts off with two fascinating puzzles about whether time exists. None of its parts exists, if the past exists no longer, the future does not yet exist, and the present, being a sizeless instant, is not a part. Moreover, there is no time at which the present instant can ever cease to exist. It cannot cease while it is present, it cannot last for a while and cease at a later instant, nor, as Aristotle rightly perceives, is there such a thing as the very next

¹ Aristotle *Physics* 4.4. At 4.1, 209a5, Aristotle's statement that place is three-dimensional is not endorsed, I believe, but is used to show that the conventional view raises a puzzle (how place differs from body). However, for a different view, see note 22 to the translation below.

² Aristotle *Physics* 4.1, 208b11.

³ Simplicius in *Phys.* 604,5-11; 639,13-22; Richard Sorabji, *Matter, Space and Motion*, London and Ithaca N.Y., 1988, chs. 11-12.

instant, if time is a continuum.⁴

In giving a positive account of time, Aristotle argues that it must involve change, or its passage would be undetectable.⁵ I take it that such a sceptical hypothesis would be incompatible with Aristotle's methodology of starting from received opinions.

Aristotle suggests that time is something we count when we count different stages, some before and some after, in a movement, particularly in the movement of the heavens.⁶ Their rotation supplies the change we need. Further, time requires consciousness. For time, being by definition countable, requires the existence of beings to do the counting.⁷

Simplicius was writing over eight hundred years later, after the closure of the Athenian Neoplatonist school in AD 529, possibly in Harrân, which is in present-day Turkey.⁸ His commentary is rich in reports of earlier discussions. He is able, for example, to check Aristotle's report of Zeno's puzzle, that every place will need a place *ad infinitum*. He does so both by noting inconsistencies in Aristotle's own wording and by drawing on the different report of Zeno handed down by Aristotle's pupil Eudemus of Rhodes.⁹

Some of the best criticisms of Aristotle on place are those of Theophrastus, which Simplicius reserves for the *Corollaries*, but many of the best comments on Aristotle's treatment of time are kept for the commentary.

Galen, the great medical scientist of the second century AD, attacked Aristotle's argument that time requires change. But as I understand the reports of Simplicius and Themistius,¹⁰ he wrongly took Aristotle to be saying that, because we have to change (*kinoumenoi*: Themistius) in our minds when we think, we are obliged to think of time as changing (*kinoumenon*: Simplicius). He objects that in that case we would be obliged to think of everything as changing, even such unchanging things as the centre of the earth (the example in Themistius). You might as well say that if we have to think of an unextended point, for example, by using an extended mental image, we have to think of the point as extended, but in fact the representation need not be like the represented. It is easiest, I

⁴ Aristotle *Physics* 4.10. I have argued (*Time, Creation and the Continuum*, London and Ithaca N.Y., 1983, 10-12) that Aristotle's solution to the second is given at *Metaphysics* 3.5, 1002a28-b11. I believe the first is left unsolved.

⁵ Aristotle *Physics* 4.11, 218b21-219a1.

⁶ Aristotle *Physics* 4.11, 219a1-b9.

⁷ Aristotle *Physics* 4.14, 223a21-9.

⁸ This is the suggestion of Michael Tardieu, 'Sâbiens coraniques et "Sâbiens" de Harrân', *Journal Asiatique*, 274, 1986, 1-44, fully reported by I. Hadot in Richard Sorabji, ed., *Aristotle Transformed: the Ancient Commentators and their Influence*, London and Ithaca N.Y., 1990, ch. 12.

⁹ 563,8ff.

¹⁰ Simplicius 708,27; Themistius in *Phys.* 144,24ff.

think, to take this last remark about unextended things as being part of Galen's objection. On the punctuation of Diels, the editor, it is part of Simplicius' reply to Galen, but in that case Simplicius will have misunderstood. The translator has kept to Diels's text, so that the reader may judge for himself or herself which is the right interpretation.

Simplicius records the striking refutation offered by Eudemus of Rhodes against those Pythagoreans who said that history would repeat itself exactly again and again.¹¹ This would not be a repetition, so I take Eudemus to reply, because the time would be the same, not different. He is relying on the idea that, since the countable stages in what is going on are supposed to be the same, any count would come out the same, so that, by Aristotle's definition of time, the time would be the same.

Sometimes Simplicius has a better solution to offer than his predecessors. He improves, for example, on Themistius' explanation of how the eternal rotation of the heavens can be considered as falling within time, when it is no shorter than time. Simplicius' idea seems to be that however large a finite number of rotations you take, there will always be time longer than that.¹²

Aristotle's argument for time involving consciousness came under repeated scrutiny. There is a parallel with his argument that place involves the possibility of receiving bodies, and hence that there is no place beyond the furthest stars, because there is no possibility of matter flying out to be received.¹³ Similarly, time involves the possibility of being counted, and hence there is no time in the absence of consciousness, because there is no possibility of any counting. Is it true that the absence of one possibility (that of counting or being received) implies the absence of the other (that of being counted or receiving)? I think not in the relevant sense, because the absence of any *opportunity* for the first does not imply the absence of a *capacity* for the second. But different views were taken in antiquity.

Boethius of Sidon in the first century BC is reported as rejecting Aristotle's view. The countable can exist without someone to do the counting, just as the perceptible can exist without a perceiver.¹⁴ Alexander of Aphrodisias, however, who held an Aristotelian chair around AD 205, defended his master.¹⁵ Simplicius agrees,¹⁶ but

¹¹ 732,26-733,1.

¹² 741,22ff.

¹³ Aristotle *de Caelo* 1.9, 279a11-18. See *Time, Creation and the Continuum* 89-93; *Matter, Space and Motion*, 132-5.

¹⁴ 766,17-19 (=Themistius *in Phys.* 163,5-7) and 759,18-20.

¹⁵ 759,20-760,3; *de Tempore* (Théry) 95,11-12, translated by R.W. Sharples in *Phronesis* 27, 1982, 58-61, at 64.

¹⁶ 760,33-761,5.

elsewhere he is conscious that Aristotle himself did not always take the same view about correlative possibilities. In the *Categories* Aristotle allows that there might be perceptibles and knowables without any perceivers or knowers, whereas Simplicius rejects any such asymmetry.¹⁷

While Simplicius reserved his own theories and their historical background for the *Corollaries*, this has not prevented the commentary translated here from being a major sourcebook for the interpretation of Aristotle.

Some of the footnotes to the translation are the responsibility of the general editor; the translator's footnotes are indicated by '(J.O.U.)'.

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¹⁷ Simplicius in *Cat.* 196,12.27-33.

Textual Emendations

- 526,2 Extending the quotation from Diels's 526,2 after *topôî* to 526,4 after *diaphoras*.
- 530,26 Replacing a full stop by a question mark.
- 530,29 Replacing a question mark by a full stop.
- 538,13 Reading e.g. *diaspasmon* for *parainesin*.
- 538,18 Reading *ei gar* with a for the *ou gar* of EF.
- 542,30-1 Correcting the end of the lemma from *heôs tou to de angeion ouden tou pragmatos estin* to *heôs tou allôn sômatôn homoiôs*.
- 543,11-12 Correcting the end of the lemma from *heôs tou to de angeion ouden tou pragmatos estin* to *alla khôristos ho topos hekastou esti*.
- 545,8 Reading *tou en hôi ektos ontos* with aF instead of *to en hôi ektos on*.
- 551,7 Reading *toutous* for *toutois*, which appears to be a misprint.
- 554,29-30 Omitting *kai hoti kat' allo adunaton* with aF.
- 557,21.22 Reading *en hautôi* for *en autôi* in lines 21 and 22.
- 563,8 Reading a question mark for a full stop.
- 568,13 Accepting Diels's conjecture <*dia ti*> *de* (sc. *dêlon*) *hoti*.
- 576,3 Assuming some such conjecture as Diels's *kai ho eis hon* for the impossible *ei hos* of E.
- 584,14 Conjectured closing of a quote that Diels fails to close, after *hudatos*.
- 587,13-14 Reading *periekhei kai topon lambanei* for *periekhei, topon lambanei*.
- 591,13-14 Reading e.g. *diireta* between *mêpô* and *mêrê*.
- 592,22 Eliminating the comma between *pôs êkousen* and *hôs eirêtai*.
- 599,27 Reading *tote* for *touto* as Diels suggests in his apparatus.
- 699,24 Reading *epi* for *epei*.
- 706,34 Adding to lemma *mêden de diaphereto legein hêmin en tôî paronti kinêsin ê metabolên,*

- omitted by Simplicius but discussed under this lemma.
- 707,13 Reading *suntonous* for *sun tonous*, a misprint.
- 708,32 Deleting quotation marks after *noêsei nooumen*.
- 708,34 Inserting quotation marks after *phantastikôs energountes*.
- 717,13 Reading *esti* for *este*, with Spengel and Diels. Possibly read *esti dê pantakhê kai homoiôs arithmos hêstinos kinêseôs*, which gives the right sense.
- 717,32 Reading a question mark for a full stop.
- 721,1 Reading a question mark for a full stop.
- 721,4 Reading a question mark for a full stop.
- 723,27 Reading *topon* for *tropon*.
- 734,2 Reading a full stop for the comma after *pollê*.
- 738,34 Reading a question mark for a full stop.
- 744,15 Reading *ekeinou* for *ekeinês*, as suggested by Diels in his apparatus.
- 747,32 Deleting *to men oun houtô legetei tôn nun*.
- 752,17 Adding quotation marks before *houtô*.
- 768,28 Reading *ton prôton* for *tên prôtên*.
- 770,17 Adding *kai tôn hepta hippôn* after *kunôn*.

Simplicius

On Aristotle Physics 4.1-5, 10-14

Translation

Translator's Note

This is a translation of Simplicius' commentary on chapters 1-5 and 10-14 of Aristotle's *Physics* Book 4. The Greek text is that edited by Diels in the *Commentaria in Aristotelem Graeca*, volume 9, Berlin 1882, except for a few small emendations, a list of which appears on pp. 5-6 of this volume. The text discusses short passages of Aristotle, one after another, the passage being indicated in a lemma containing only the first few and the last few words. The numbers from 207 to 224 in these lemmata are page numbers in Aristotle's *Physics*. For the convenience of the reader this translation contains the whole of these passages, the parts omitted from the lemma being enclosed in square brackets. I have used my own translation, rather than borrowing one of those already available, first in order to ensure uniformity of vocabulary between text and commentary, and secondly because the text of Aristotle supplied in the lemma differs in some places certainly, in some probably, from the text of Ross's edition of the *Physics*, which I have otherwise followed. These differences, usually slight, are noted when they occur. Marginal numbers are the page and line numbers of Diels's Greek text.

I am very grateful to Professor Sorabji and his assistants, Paul Opperman and Ian Crystal, both for saving me from many mistakes of translation and for their great skill and care in preparing this translation for press.

The Commentary of Simplicius on Book 4.1-5, 10-14 of the *Physics* of Aristotle

PROOEMIUM.

[The commentary begins with a brief introduction showing how Book 4 follows logically after Books 1-3. – Tr.]

Having embarked on the investigation of the first principles and the 519,3
causes of natural things and of what is universally present in the
whole of nature, in his first book Aristotle discussed those principles
which function as elements – matter, form and its corresponding
privation. In the second book he discussed the efficient and the final
cause and certain things which seem to some to be in themselves
efficient causes but which are not as such efficient, such as chance
and spontaneity, but only contingently so. Having shown that
nature is an efficient cause, he defined it as the principle of change¹ 10
for bodies, since change is present in all natural phenomena *qua*
natural and holds natural bodies together and is included in the
definition of nature. So it was reasonable that he should discuss
change immediately at the beginning of Book 3. But since it is
necessary that every natural body and every change should be
either limited or unlimited, and since both body and change, being 15

¹ The translation of the Greek word *kinēsis* is of great difficulty for the translator who wishes to avoid different translations of such a key word in different contexts. The problem is that in non-technical Greek it means 'motion', and is often used in that sense by Aristotle and his commentators. But Plato proposed extending its use (*Theaet.* 181) and Aristotle used it of all change in all the categories except for substance, relation and action-and-passion (*Metaph.* 1068a8). Thus the word 'change' is too wide as a translation, and is unsuitable when motion is clearly meant. In any case, 'change' is the natural translation of *metabolē*. But the traditional translation by 'motion' throughout requires qualitative change, for example, to be called 'motion in respect of quality' which is not English. Hence, 'motion' and 'change' are both used as translations of *kinēsis*. *kinēsis kata topon* is translated as 'change of place'; *kinēsis* is translated as 'change' except when it clearly refers to motion exclusively, when it is translated as 'motion'. *metabolē* is translated always as 'change'. The Greek-English index will indicate where *kinēsis* (cognate verb *kinein*, *kineisthai*) has been translated one way or the other, and where *metabolē* (and its cognate verb *metaballein*) occurs. For the translation of other words of change and motion, see the index, s.v. *allassein*, *alloioun*, *alloiōsis*, *ameibein*, *exallassein*, *metabainein*, *metabasis*, *metastasis*, *methistanai*, *phora*, *pheresthai*, *metapheresthai*. (J.O.U.)

continuous, are divisible without limit, and, furthermore, since some natural scientists have said that the unlimited was the first principle of nature, he reasonably also discussed the unlimited. Having completed his account of the elements and the other causes, and the further account of wrongly assumed causes, as the next stage he investigates and teaches concerning the external concomitants of natural bodies as such, examples being place and time. For every natural body is in a place, and it changes its place and remains in a place, while simple bodies are specified by their motion towards their proper places.² Also, since every change is measured temporally, he had to provide a doctrine of time, if indeed time is, as we shall learn, the number of all change.

Reasonably, he discourses first about place. For place precedes not only time but also change and body itself. For a body is in a place, and change happens to a body, and time is present in change. But since the pre-eminently natural entity is the natural body and the rest either receive it, or are its change or are the measure of its change, he reasonably first gave an account of the elements of natural body – matter and form – then of the efficient and final causes of body, and of change which is included in the definition of nature. And thus he put place before time among the external concomitants.

But, since the natural scientist has things in change as his subject-matter, just as the mathematician and the theologian have the unchanging, and yet place is something unchanging, as will be shown, how could place be within the scope of the natural scientist? Perhaps it is because it receives changing bodies, even if it itself is unchanging, and provides a boundary for a changing body, *qua* changing, even if it does not itself change. But since some have put the void among first principles, and have said that it is place lacking a body, Aristotle reasonably discusses the void also after his discussion of place. Then he adds the problems concerning time, and thus completes the book we have before us and hence the discussion of the features universally present in nature, which is concerned with the first principles of nature.

CHAPTER 1

208a27-9 Similarly it is requisite that the natural scientist should ascertain whether place and the unlimited exist or not, what kind of existence they have, and what they are.

² The simple bodies, earth, water, air and fire, essentially seek to be positioned in that order, earth at the bottom, fire at the top. (J.O.U.)

The problems about place are defined by their similarity to the enquiries about the unlimited.³ This is reasonable; for just as when we hypothesised either the existence or the non-existence of the unlimited, absurdities seemed to follow, so it is necessary for those who investigate whether place exists to probe in both these directions, since the problem is a novelty. Also the first among the problems about place is to examine whether it exists or not, as in the case of the unlimited. We have learnt from the lectures *On Demonstration*⁴ that after whether it exists we should enquire what it is. For this lays bare the nature and the essence and the definition of the subject matter. Next follows the problem of the thing's qualities, which makes clear what its characteristics are, to which is related the question of its manner of existence. For as we said with regard to the unlimited that it exists potentially, bit by bit and in becoming, we similarly enquire into the manner of the existence of place, whether it is self-subsistent, the view of those who say that place is an interval or void, or whether it is relational, and whether it contributes something or nothing to the existence of bodies. For these questions are involved in those of the characteristics and manner of existence of place.

But why did Aristotle put the question of manner of existence earlier? Perhaps it was because we often discover a thing's essential nature from its characteristics, as will now become clear in the case of place.

208a29-32 For we all suppose that things that exist are somewhere [(for we suppose that the non-existent is nowhere; for where is the goat-stag or the sphinx?), and of changes the most common and most basic is that of place,] which we call locomotion.

Having at the beginning defined the problems about place, and their likeness to those about the unlimited, he goes on to show that a discussion of place is necessary for the natural scientist by two arguments, of which one seems to be a received opinion derived from common sense, the other demonstrative and based on actual facts. The one based on common sense employs the hypothetical syllogism⁵ put forward by the ancients, which runs as follows: if that

³ The unlimited was discussed in Book 3.

⁴ Presumably the work now called the *Posterior Analytics*. (J.O.U.)

⁵ Hypothetical syllogisms used premises different from Aristotle's standard 'all', 'no', and 'some' premises. The premises included 'if, then', 'either, or', 'not both'. For a history, see Katerina Ierodiakonou, 'The Stoic indemonstrables in the later tradition', a paper presented at the symposium on Stoic logic in Bamberg, Germany, September 1991, and forthcoming in a collection of the symposium papers (eds Doring and Ebert).

which is not is nowhere, that which is is somewhere; but, if being somewhere makes evident the occupation of a place, it is evident that place exists. 'But,' as Alexander says, 'this supposition is not common to everyone, but only to those who think that only bodies exist, and only things having a matter, and who do away with incorporeal nature.' But, as it appears, the terms are converted irregularly; for from 'if that which is not is nowhere' it follows according to the second form of hypothetical argument⁶ that what is somewhere is, not that what is is somewhere, which is what is required by those who are arguing for place. So we must either transpose the text, saying that that which is nowhere does not exist, and thus go on to say that the existent is somewhere, or else, more persuasively in the opinion of those using the argument who believe that only bodies exist, one should say that the antecedent and the consequent⁷ are logically equivalent. For if there is nothing other than bodies it is clear that that which is nowhere does not exist at all and what does not exist is nowhere, since bodies are somewhere. In the case of equivalent propositions the order is indifferent, whether from the antecedent or from the consequent. It seems that Aristotle is parodying Plato's words in the *Timaeus* where he says: 'gazing on this we dream and say that it is necessary for the whole of what is to be somewhere in some place and to occupy some region, and that what is not in the earth or in the heavens is nothing.'⁸ For you see that this argument is both straight and validly converted. For because that which is nowhere does not exist, therefore everything that exists is somewhere. But Plato does not say this as accepting the argument, but because from the dream-like gaze at the material world, of which this holds, we predicate it of all that is.

Aristotle shows that the non-existent is nowhere by asking 'For where is the goat-stag or the sphinx?' For they are nowhere since they do not exist at all. And they do not exist at all since they are nowhere. It is clear that this consequence is valid when thus construed, but it is not true. For neither is everything that exists in a place (for nothing that is most truly immaterial and separated is in a place), nor is that which is nowhere, i.e. not in a place, non-existent. For, as has been said, there are many things that are not in a place.

But the discussion has shown what it set out to show, that a discussion of place is necessary for the natural scientist, if, indeed,

⁶ This is the second of the five indemonstrable arguments found ascribed to the Stoic Chrysippus by Diogenes Laertius, *Lives of Eminent Philosophers* 7.76-81. His example is: If it is day, it is light. But not: it is light. Therefore not: it is day.

⁷ Antecedent and consequent correspond to the 'if' and 'then' parts of the conditional.

⁸ Plato *Timaeus* 52B. (J.O.U.)

the earlier ones think that all that exists is in a place. Now, if we are not to denounce these early men pointlessly, it is likely that 'somewhere' does not indicate a relation in the sort of place now being investigated, but a determination of order, just as Plato recognised a signified and supercelestial⁹ place, and as we say that intelligence is in the intelligible place.

Having thus shown from the ancient scientists that the discussion of place is necessary, in the second argument he demonstrates the same point on the basis of the actual facts as follows: if the change common to all natural bodies is change of place, it is clear that place is a natural phenomenon; so the discussion of place is necessary for the natural scientist. But the antecedent, so the consequent.¹⁰ He called this change the common one either (a) because it is commonly recognised by everyone. For we all perceive change of place more readily than other changes. That is why some have even denied the reality of passing away, like the school of Anaxagoras, or of qualitative change, like those who say that 'colour is conventional'.¹¹ But nobody speaking seriously has denied the existence of change of place (for we may disregard Zeno's paradox). Or (b) because this change alone is common to all natural bodies. For the heavenly bodies, that are exempt from all other change, do change in this way. This is why he calls it the most basic case of change. For the most basic case is that which is applicable to the most fundamental and originative things of all. Moreover, Aristotle will show later on that locomotion is the prime change temporally, naturally and in causal order, and such change is rightly called basic.

In some transcriptions 'prime' is written with 'common', in some 'prime' instead of 'common', and that is what Eudemus writes.¹²

208a32-b1 There are many problems about what place is. [For it does not seem to be the same thing when examined in the light of all the data. Nor do we have statements of and answers to the problems] from earlier thinkers.

Having shown that a discussion of place is necessary for the natural scientist, he goes on to show, as in other matters, that the problem is difficult and consequently in need of continuous application and pardon if an accurate answer does not immediately appear to the first persons to examine it systematically. Therefore the demonstration of the difficulty is useful for learner and teacher. He exhibits the difficulty of it first from the need to collect the

⁹ The place of Forms in Plato's *Phaedrus*.

¹⁰ A Stoic mode of presenting arguments.

¹¹ Democritus Fr. 9. (J.O.U.)

¹² Aristotle *Physics* 208b31. (J.O.U.)

523,1 definitions of investigated objects from their essential features, as
 he said at the beginning of *On the Soul*,¹³ while what seem to be the
 essential features of place do not point to the same nature. For in
 that containment is a feature of place, the place of each object will
 5 seem to be its form;¹⁴ for that is what immediately bounds and
 contains it. But in that it receives a certain form and seems to be its
 space it seems to be more like matter. This is why Plato speaks of
 matter when he seems to be talking about space and place. But in
 that the same place will receive a different body at different times it
 10 would seem to be something distinct from that which is in the place,
 and so other than its matter or form. In this way the essential
 features of place, leading as they do in different directions, make
 understanding of it troublesome.

But he informs us that a second cause of the difficulty of the
 subject is that nobody previously had raised the problem or offered
 solutions to it. This is both an indication and a cause of its being
 troublesome to understand. It is an indication in that people avoided
 15 the problem because of its difficulty, and it is a cause because the
 discussion becomes even more difficult for us when we have no
 collaborator in our enquiry nor find any sort of basis already laid
 down. For even if Hesiod apparently said

Chaos came into existence first.¹⁵

Hesiod's contribution is mythical and not scientific. But this much, if
 20 anything, he showed well, that something must already be there in
 which things can come into being. Plato, in the *Timaeus*, when he
 appears to be discussing place, in fact spoke about matter.

Eudemus says that a further cause of the troublesomeness of the
 problem of place is that it is not easy to lay hold on it, because it
 altogether escapes us when the body in it is removed, and it is not
 25 possible to apprehend it in itself, but, if at all, in combination with
 something else, like the sounds of the so-called consonants. For with
 'a' added the sound of 'b' and 'c' becomes clear. However, we should
 not shirk the problem because of its difficulty when it is so relevant
 and necessary for the natural scientist. For even if nothing more is

¹³ As Diels remarks, it is not clear where he said this. (J.O.U.)

¹⁴ Simplicius' own account of place in his *Corollary* incurs this difficulty that a thing's place is hard to distinguish from its form. His answer is that place gives order to forms (629,13-19; 630,24-30; 638,26-7, translated by Urmson). Aristotle never gave such a dynamic sense to containment and so avoids this problem. It was Iamblichus' reinterpretation of Aristotle in terms of Platonic Forms that foisted the problem on him. See Richard Sorabji, *Matter, Space and Motion* (London and Ithaca N.Y., 1988), ch. 12. For Aristotle's discussion of the relation of form to place with Simplicius' comments, see 535,13-537,4; 572,26-31.

¹⁵ Hesiod *Theogony*, line 116. (J.O.U.)

achieved with what is hard to grasp, still to have raised the problem well is enough for the lover of understanding as Aristotle himself teaches elsewhere. 30

208b1-8 That place exists, [then, seems obvious because of successive displacement. For where there is now water, there, when it has gone as from a vessel, air is present instead and at another time some other body occupies that same place. This seems to be something different from everything that comes into it or replaces it. For where there is now air, there water was formerly, so that it is clear that the place and the space must be something different from both,] into which and from which they passed.

Having shown the necessity and the difficulty of the enquiry concerning place, it remains for him to move on to its specific problems, of which the first is whether place exists. He sets out first the arguments that make the existence of place probable, and afterwards those that eliminate it. He expounds four arguments that affirm place. The first of these is that from successive displacement. For if, where formerly there was water, the water has run out and there is now air, just as happens in vessels, it is clear that what receives them is other than either of them. The second is from the natural locomotion of the elements. For each of these is specified by its locomotion, one upwards, another downwards; these specific differences are of place. The third is a proof from mathematical considerations according to Alexander, but I think he is mistaken. For the argument based on mathematics is a part of the second argument from the natural locomotion of the elements, as we shall learn. The third is in fact a dialectical argument from the void; for, if the void is a place lacking a body, those who say there is a void will certainly endorse the existence of place. As a fourth argument in addition to these he adds Hesiod's mythical poetry that shows not only that place exists but also that it has great power. It is clear that the first two arguments appeal to the necessity of the situation; the others are derived from the opinion of those who accept such hypotheses. But now that we have given a synoptic account of the arguments, we shall take up the thought of each and articulate it so far as we can. 524,1
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The proof from successive displacement went somewhat as follows: a place will receive successively different objects while remaining the same. But what will receive successively different objects while remaining the same is something and a different thing from these objects, since it remains the same and they are different and at different times. So place is something and other than what it 25

contains. That a place receives different things at different times while remaining the same he showed by successive displacement of bodies, saying 'where there is now air, formerly there was water'. From which it is clear that a space is something else into which and from which the bodies in it passed. But if it is different it clearly exists and is worth investigating. The comparison with the vessel added actuality to the proof of the existence and the otherness of that which receives its successive occupants. For the vessel is both something and also other than the things in it, which fact reinforces the major premiss.

208b8-25 Also the local motions of natural and simple bodies, [such as fire, earth and the like not merely show that place is something but also that it has a certain capacity. For each of them moves to its own place if not prevented, one up, the other down. But up and down and the rest of the six directions are parts and forms of place. Moreover up and down, to left and to right and the like are not merely relative to us. For to us they are not always the same, but depend on our position and how we turn, which is why the same thing can often be to right and to left, above and below, and in front and behind. But in nature each of these is distinct. For above is not anywhere you like but to where fire and light things move locally; similarly below is not anywhere you like but the place of heavy and earthy things. So they do not differ from each other only in position but also in their powers. Mathematical objects also illustrate the point; not being in a place they still have a position relative to us, to right and to left, but only relatively speaking, since] they do not have these properties naturally.

Also a second proof of the existence of place is based on the natural motion of bodies. At the same time it demonstrates that place has some power in its own nature, so that for this reason also it is worth investigation. Aristotle shows that place is something and has a power as follows: if each natural and simple body moves locally to its proper place if not prevented (fire upwards, earth downwards and intermediate things to the middle, and what moves in a circle¹⁶ moves round the middle point), and each is specified in this way, and if up and down and the other directions are parts and forms of place, then it is plain that place is something and has a power. Otherwise these differences would not specify simple bodies. But right and left, and in front and behind characterise celestial motion also, as Aristotle proves in *de Caelo*, and also living things in the world of

¹⁶ The heavens.

becoming, in accordance with their composite nature.¹⁷ Further, warmth and softness and similar attributes might exist without place, but it is impossible for there to be lightness and heaviness without place; for these are defined by upward and downward motion. 15

But, since up and down and the other differences of place seem to exist relatively, one might raise the problem whether place itself is not a natural entity but has its being through its relation to us. For clearly the roof is above to the people in a house, but is below to those on the tiles. So if place should exist relatively to us it is clear that it neither has any power, as existing relative to our position, nor would its treatment be necessary for the natural scientist. In removing this objection he shows that up and down are natural and not merely relative. He proves it as follows: natural up and down are invariant. For above is whither light things move locally and below whither heavy things move. But things that are relative to us are not always the same, but, as we turn about, so they too change their position. For the pillar now on my right becomes on my left when I turn round or move, and the case of the roof is the same, as said above. So the natural above and below are not relative to us, nor is their existence relational; they do not differ only by their position relative to us but also in their power. Otherwise they would not have been receptive of different things nor have determined the specific nature of what went their way. 20 25 30

Aristotle also proves from mathematical objects the fact that differences of place are not only because of a relation to us but are natural, and that natural differences and differences of position are distinct. For if objects that have a left and right and up and down only by their relation to us are not in a place according to their own nature, as is the case with mathematical objects, those things that are in a place cannot have their differences of place merely by their relation to us. Aristotle seems to be only supposing the conditional when he says 'though not in a place, nevertheless they have a right and left by their relation to us' (208b23-4), as if he had said 'mathematical objects have a right and left only through their relation to us because they are not naturally in a place, since, if they were, they would have had these differences not merely by position but by their nature'.¹⁸ Proceeding, he again makes the point by saying of their differences of place that 'they have them solely from position and do not have any of them naturally' (208b24-5). 35 526,1 5

It is clear from this argument that relative place is one thing and natural place another, and that relative place is capable of holding

¹⁷ Thus one's head is at the top of one's body, whatever one's posture. (J.O.U.)

¹⁸ Extending the quotation from Diels's 526,2 to 526,4.

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