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ALEXANDER OF APHRODISIAS: On Aristotle Prior Analytics 1.32–46

Translated by Ian Mueller

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ALEXANDER OF APHRODISIAS

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Alexander of Aphrodisias On Aristotle Prior Analytics 1.32-46

Translated by Ian Mueller



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Preface

The first draft of this translation was mainly composed in the spring of 2002 while I was participating in a seminar on the history of mathematical proof organized by Karine Chemla with the support of the Maison des Sciences de l'Homme, Paris, and the Columbia Institute for Scholars at Reid Hall. I would like to thank the Maison for its generosity and the Institute, its Director, Dr Danielle Haase Dubosc, its Research Coordinator, Dr Mihaela Bacou, and the other members of its staff, for providing ideal working conditions and arrangements at Reid Hall. But my deepest thanks for my time in Paris go to Professor Chemla, who organized a rigorous series of sessions on the subject of proof, while giving the participants the time and freedom to pursue their own particular projects. The second draft benefited greatly from the criticisms and suggestions of several anonymous readers and from the careful and patient editing of Dr John Sellars. The final version was prepared for publication in the fall of 2005 while I was a visiting scholar at Christ's College, Cambridge. I would like to thank the Fellows of the College and its Master, Professor Malcolm Bowie, for granting me a marvellous opportunity to participate in the vigorous intellectual life of Cambridge University and to pursue my own research.

Cambridge, October 2005

Abbreviations

- Aldine = the first printed edition of the Greek text. On the title page above the device of the Venetian printer Aldo Manuzio one reads in Greek: Alexandrou tou Aphrodisieôs eis ta tou Aristotelous protera analytika hypomnêma, and in Latin: Alexandri aphrodisiensis in priora analytica Aristotelis commentaria. A subscription at the end of the text indicates that it was printed by Aldo Manuzio and Andreas Torresanus de Asula in 1520.
- B = Vatican manuscript Urbinas Graecus 51.
- CAG = Commentaria in Aristotelem Graeca, Berlin: G. Reimer, 1882-1909.
- *Elements* = Euclid's *Elements*, vols 1-4 in Heiberg, J.L., and Menge, Hermann (ed. and trans.), *Euclidis Opera Omnia*, Leipzig: Teubner, 1883-5.
- Hülser = Hülser, Karlheinz, Die logischen Fragmente zur Dialektik der Stoiker, 4 vols, Stuttgart: Frommann-Holzboog, 1987-8.
- Ross = Ross, W.D. (ed.), Aristotle's Prior Analytics: A Revised Text with Introduction and Commentary, Oxford: Clarendon Press, 1949.
- Smith = Smith, Robin (trans.), Aristotle's Prior Analytics, Indianapolis and Cambridge: Hackett, 1989.
- Theophrastus: Sources = Fortenbaugh, William W., Huby, Pamela M., Sharples, Robert W., and Gutas, Dimitri (ed. and trans.), Theophrastus of Eresus: Sources for his Life, Writings, Thought, and Influence (Philosophia Antiqua 54), 2 vols, Leiden and New York: E.J. Brill, 1992.
- Wallies = Wallies, Maximilian (ed.), Alexandri in Aristotelis Analyticorm Priorum Librum I Commentarium (= CAG 2.1), Berlin: Reimer, 1883.

1. Text and translation

This is the second of two volumes in which what might be called the third and last part of the commentary of Alexander of Aphrodisias on book 1 of Aristotle's *Prior Analytics* is translated, the commentary on the first two parts (chapters 1-7 and 8-22) having been previously translated in Barnes et al. (1991) and in Mueller and Gould (1999) and (1999a). The reader can consult the Introduction of Barnes et al. for information about Alexander and the general character of his commentary on the whole of book 1. The translation is based on Wallies' text of Alexander's commentary, and I have taken Ross as the standard for the text of the *Prior Analytics*.

Many of the manuscript sources for Alexander's commentary do not contain the third part. In his apparatus for this part Wallies cites only the *editio princeps* of the Greek text, the Aldine edition of 1521, which he takes to be an adequate representative of a number of fifteenth- and sixteenth-century manuscripts, and the fundamental Vatican manuscript which Wallies calls B^1 together with the corrections of it, whose authors are labelled, B^1 (the scribe himself, whose corrections Wallies usually adopts), B^2 (who made corrections from the archetype), and B^3 (whose corrections may very well not have had manuscript authority).

One of the issues confronting the translator of any commentary on Aristotle is to decide when the original text is being quoted and when it is not. I have been more sparing in my use of quotation marks to indicate such quotations than Wallies is. I have used quotation marks in cases where Alexander is clearly discussing the meaning of a word or phrase, but otherwise I have only used them when there is a string of, say, at least five words which correspond exactly to the text of Aristotle. Even in this connection there have to be some arbitrary decisions, since a string may be interrupted by a 'he says' or a parenthetical explanatory comment; or a particle may be eliminated or changed to fit the context.

In the case of a text like the one translated here there is an additional problem which arises frequently, the question whether an assertion such as 'Health is said of human being' is about the words 'health' and 'human being' or about health and human beings (or humanity). My general goal has been to minimize the use of single quotation marks and so I normally write: Health is said of human being

rather than:

'Health' is said of 'human being'

or:

'Health' is said of human being.

And I have tacitly adopted various conventions used in modern logic (e.g. the one just employed of indenting and not putting quotation marks around expressions which are being mentioned) to reduce the number of quotation marks. However, my goal has not been consistency, but minimizing the amount of obtrusive punctuation without obscuring what Alexander or Aristotle is saying.

In the translation I use parentheses as punctuation. Square brackets are mostly used in the lemmas which, in Wallies' text, almost always consist of only the first words of the text which Alexander goes on to discuss; I have translated the remainder of the text and enclosed it in square brackets. Square brackets are also used in the translation of Alexander for explanatory additions, such as a Greek word or phrase. Angle brackets are used to indicate two kinds of insertions: additions to the Greek text and English words added to make the text clearer. However, where an insertion marked by Wallies with angle brackets has seemed to me necessary or desirable, I have not reproduced his angle brackets. Where there is any question in my mind or I have made an insertion myself I have retained the brackets and added a note of explanation. Similarly, in the case of the addition of English words, I have used angle brackets only where it seemed to me useful to the reader to know that the addition was made.

2. Alexander's commentary

In certain ways Alexander's commentary on the third part of book 1 of the *Prior Analytics* is of more value to us than his commentary on the first two parts. Aristotle's treatment of non-modal syllogistic in the first part is relatively clear and complete, and it is probably fair to say that twentieth-century work on non-modal syllogistic has put us in the position of understanding the subject in greater depth than Alexander and probably Aristotle himself. The situation is quite different with Aristotle's treatment of modal syllogistic. If any consensus has been reached on its interpretation, it is perhaps that no generally acceptable interpretation has been found. As is often the case with Alexander, a major value of his commentary (and perhaps in this case the major value) is the thoroughness with which he goes through the text, dotting all of Aristotle's 'i's, but also showing clearly all the problematic steps in his reasoning. Another great value of Alexander's commentary on the second part of book 1 is the historical information he provides about developments subsequent to Aristotle, notably Theophrastus' attempt to iron out difficulties in Aristotle's modal syllogistic. Unfortunately, what Alexander says does not enable us to judge how successful Theophrastus was.

The first two parts of book 1 of the Prior Analytics are easily assigned to the subject which most philosophers think of as logic: the formal analysis of deductive argument. In the third part Aristotle takes for granted that he has developed all the formal machinery he needs, and his concerns might be put under the following labels: in chapters 23-31, the power of syllogistic to deal with ordinary deductive argument (chapter 23), the use of syllogistic to furnish proofs (chapters 24-30), and the comparison of syllogistic with the method of division associated with Plato (chapter 31); in the chapters translated here Aristotle is almost entirely concerned with a variety of issues which we might assign to semantics and the philosophy of language, e.g., questions concerning terms with no referent and questions about the significance of the concept of meaning for logical analysis. Alexander's commentary on these chapters is again notable for its thoroughness, but especially for the information he provides about post-Aristotelian developments in these areas of major concern to philosophers today. In a number of cases he is our only source, or, at least, our major one for the ideas of Theophrastus and, more significantly, of the Stoics.

I have discussed Alexander's commentary on chapters 23-31 and some of the material in 32-46 in the Introduction to Mueller (2006). In this Introduction I shall deal only with parts of chapters 32-46. Before that, however, I note that the logic presupposed by Aristotle in the last part of book 1 and therefore by Alexander in his commentary on it is really non-modal syllogistic; in the chapters with which we are concerned here, modal syllogistic enters seriously only in 34.² However, Alexander does take for granted a thorough knowledge of non-modal syllogistic, and so I give here a summary presentation of points from Aristotle's presentation of non-modal syllogistic in the first part of book 1 of the *Prior Analytics* which are relevant to understanding the third part and Alexander's commentary on it.

3. Non-modal syllogistic

For the purpose of understanding this part of Alexander's commentary it suffices to think of a (valid) categorical syllogism as a deductive argument consisting of two premisses P_1 and P_2 and a conclusion P_3 , where the conclusion expresses a relationship between two terms T_1 and T_2 , called the predicate and subject respectively, and P_1 expresses a relationship between T_1 and a term T_3 and P_2 expresses a relationship between T_2 and T_3 ; T_3 is called the middle term, T_1 and T_2 are called the major and minor term respectively, and P_1 and P_2 are called the major and minor premiss respectively. Aristotle recognizes three syllogistic figures; in the first figure T_1 is the predicate of P_1 and T_2 is the subject of P_2 , in the second figure T_1 and T_2 are both predicates, and in the third they are both subjects. There are four possible relationships between the terms in a proposition, which I symbolize with the letters 'a', 'e', 'i', and 'o' placed between the two terms. The propositions having T_1 as predicate and T_2 as subject are then:

Universal affirmative:	$T_1 a T_2$ (read T_1 holds of all T_2 or All T_2 are T_1),
Universal negative:	$T_1 e T_2$ (read T_1 holds of no T_2 or No T_2 are T_1),
Particular affirmative:	$T_1 i T_2$ (read T_1 holds of some T_2 or Some T_2 are T_1),
Particular negative:	$T_1 \circ T_2$ (read T_1 does not hold of some T_2 or Some T_2
_	are not T_1).

It is to be noticed that a- and o-propositions are related as affirmation and negation, as are e- and i-propositions. Other propositional relations used by Aristotle are:

Simple conversion:	if T_1eT_2 , then T_2eT_1 ;
-	if T_1iT_2 , then T_2iT_1 ;
Partial conversion:	if T_1aT_2 , then T_2iT_1 .

The first-figure syllogisms recognized as valid by Aristotle in An. Pr. 1.4 are:

1.	Barbara	2.	Celarent	3. Darii	4.	Ferio
	$T_1 a T_3$		T_1eT_3	$T_1 a T_3$		T_1eT_3
	$T_3 a T_2$		$T_3 a T_2$	$T_3 i T_2$		$T_3 i T_2$
	$T_1 a T_2$		$T_1 e T_2$	$T_1 i T_2$		$T_1 o T_2$

The names used here are medieval inventions, which, given the figure of a syllogism, describe it completely by specifying the predication relations in the vowels. In my notes I sometimes indicate the figure of a syllogism with a subscript, writing, e.g., 'Barbara₁'. The syllogisms in the first figure are called complete (*teleios*) by Aristotle; those in the second and third figure are incomplete and are established as valid by reduction (*anagôgê*) to or analysis (*analusis*)³ into a valid first-figure syllogism. The valid syllogisms in the second figure are:

1.	Cesare	2.	Camestres	3.	Festino	4.	Baroco
	$T_3 e T_1$		$T_3 a T_1$		$T_3 e T_1$		$T_3 a T_1$
	$T_3 a T_2$		$T_3 e T_2$		$T_3 i T_2$		$T_{3}0T_{2}$
	$T_1 e T_2$		$T_1 e T_2$		$T_1 o T_2$		$T_1 o T_2$

The first letter of one these names indicates the first-figure syllogism to which the syllogism is reduced. The letter 's' after a vowel indicates that

the corresponding proposition is converted simply, the letter 'p' that the proposition is converted partially, the letter 'm' that the two premisses are interchanged. And so Camestres is reduced to Celarent by converting T_3eT_2 to T_2eT_3 , changing the order of the premisses to get this case of Celarent.

```
\begin{array}{l} T_2 e T_3 \\ T_3 a T_1 \\ T_2 e T_1, \end{array}
```

and then converting the conclusion to T_1eT_2 . The letter 'r' in Baroco indicates that it is reduced to Barbara by a *reductio ad impossibile* in which the negation T_1aT_2 of the conclusion T_1oT_2 is made the minor premiss of the Barbara syllogism:

 $\begin{array}{l} T_3 a T_1 \\ T_1 a T_2 \\ T_3 a T_2, \end{array}$

the conclusion of which contradicts the minor premiss $T_{30}T_2$ of Baroco. The valid syllogisms in the third figure are:

1.	Darapti	2.	Felapton 3.	Datisi	4.	Disamis	5.	Ferison	6.	Bocardo
	$T_1 a T_3$		$\mathbf{T}_1 \mathbf{e} \mathbf{T}_3$	$T_1 a T_3$		$T_1 i T_3$		T_1eT_3		$T_1 o T_3$
	T₂aT₃		T₂aT₃	$T_2 i T_3$		$T_2 a T_3$		$T_2 i T_3$		T₂aT₃
	$T_1 i T_2$		$T_1 o T_2$	$T_1 i T_2$		$T_1 i T_2$		$T_1 o T_2$		$T_1 o T_2$

Alexander takes for granted a thorough knowledge of the material summarized here, including that, e.g., the second syllogism in the middle figure is Camestres. He will frequently say that something is proved in such and such a figure, expecting his audience to know with which categorical syllogism it is proved. He will also take for granted such things as that a categorical syllogism requires at least one affirmative premiss and at least one universal one or that no affirmative conclusion is proved in the second figure and no universal one is proved in the third. I imagine that most modern readers do not have this kind of information at their fingertips and will need to refer to this or some other summary of syllogistic to see that it is true.

The preceding material is a relatively formal presentation of syllogistic. chapters 4 to 6, on which it is based, are not quite this formal, but in general there is no difficulty translating what is said there directly into this kind of symbolism, for example, when Aristotle or Alexander says, 'If A is predicated of all B and B of all C, it is necessary that A be predicated of all C'. The case is no more difficult when words are substituted uniformly for letters in such an expression. But neither Aristotle nor Alexander is as concerned with the niceties of formal

representation as modern logicians. For example, Alexander gives as a categorical syllogism:

The courageous person thinks little of his own salvation because of common advantage;

everyone who thinks little of his own salvation because of common advantage is worthy of honour;

therefore the courageous person is worthy of honour, (354,27-9)

and leaves it to the reader to figure out what terms and syllogism are involved. Alexander's informality is not simply a possible source of difficulty for the modern reader, since sometimes what he suggests is a categorical syllogism is not. As an example I mention:

Everything which is greater than what is greater than something is also greater than what is less than that; A is greater than B, which is greater than C; therefore, A is greater than C. (344,24-7)

I have discussed some of the problems involved in these cases in section 4 of the Introduction to Mueller (2006), and discuss others, starting in section 6 below.

To conclude this section I want to say something about the word 'categorical', katêgorikos, and the related terms katêgorein and katêgoria. I always give the verb katêgorein its standard logical translation using the verb 'predicate'. I usually translate the noun katêgoria with the noun 'predication', but with 'category' when Alexander takes it to refer to the highest genera of Aristotle's Categories. The adjective katêgorikos is translated 'categorical', since Alexander uses it to refer to the syllogisms I have been describing, and it has become standard to refer to them as categorical syllogisms. Alexander is perfectly aware that Aristotle uses katêgorikos to mean 'affirmative', but he only uses Aristotle's other word for 'affirmative', kataphatikos, with this sense.

4. Thinkable Aristomenes and cultured Mikkalos (chapter 33)

At the beginning of chapter 32 Aristotle announces the main topic of the remainder of book 1 of the *Prior Analytics*, 'how we can reduce syllogisms to the figures previously described' (46b40-47a1), that is, the formal representation of informal arguments. Alexander adds (340,6-11) that the techniques to be developed also make possible the assessment of informal arguments, and says that these techniques are the reason for the title *Analytics*. I have discussed Alexander's commentary on this chapter in section 4 of the Introduction to Mueller (2006). Here I remark only that the upshot of chapter 32 is that the only concern of

analytics will be arguments which are represented as categorical syllogisms, and that means that it is possible to talk about their three terms and their major and minor premisses. And this is exactly what Aristotle proceeds to do at 47a40.

In chapter 33 Aristotle discusses cases in which an argument with a false conclusion seems compelling because an indeterminate premiss such as 'A is predicated of B' is accepted as if it were universal. Alexander gives clear examples of this at 352,27-35, e.g.:

The fitting is good; the pleasant is fitting; therefore, the pleasant is good.

Here Alexander insists that the first premiss is not true if understood as the universal proposition 'Everything fitting is good', as it must be if the argument is to be valid. Unfortunately, Aristotle's examples are not so clear. His first is:

(i) Thinkable Aristomenes always is;

(ii) Aristomenes is thinkable Aristomenes;

(iii) therefore, Aristomenes always is. (47b21-9)

Here (iii) is false because it means that Aristomenes (who can and will perish) always exists. Alexander takes (i) to mean the same thing as the following true assertion:

(ia) It is always possible to think of (an) Aristomenes,

but he does not think that (ia) and (ii) yield (iii). Following Aristotle, he thinks that the argument will be valid if (i) is changed into:

(i*) Every thinkable Aristomenes always is.

But this premiss is false because it means that any Aristomenes who is thinkable always exists.

Aristotle's second example is:

(i) Cultured Mikkalos will perish tomorrow;

(ii) Mikkalos is cultured Mikkalos;

(iii) therefore, Mikkalos will perish tomorrow, (47b29-37)

and he says that to turn this into a valid argument the first premiss has to be turned into the false:

(i*) Every cultured Mikkalos will perish tomorrow.

Alexander's discussion is somewhat obscured by the fact that he sometimes treats (i) and (iii) as contingent statements of possibility rather than as unqualified statements.⁴ But it seems clear that he is more worried about what exactly is supposed to be wrong with the argument as it stands than about the falsehood of (i^{*}). He first $(351,29-34)^5$ points out a possible fallacy of ambiguity in which (i) and (iii) are taken as:

- (i') Cultured Mikkalos will cease to be cultured tomorrow,
- (iii') Mikkalos will cease to exist tomorrow,

a point which seems irrelevant to the context, but does make sense of the claim that the two premisses are true and the conclusion false. He then offers several reasons why there is something wrong with the original argument. The first (352,4-8) is the fallacy of ambiguity just described. The second (352,8-13) is directed against the interpretation of (i) as (i^{*}) and offers the following reading of the premisses and conclusion:

- (i*') Every cultured Mikkalos will cease to be cultured tomorrow;
- (ii) (This) Mikkalos is cultured Mikkalos.
- (iii") (This) Mikkalos will cease to be cultured tomorrow.

Alexander implies that (i^*) and (ii) would be true and (iii") false if this Mikkalos was not yet cultured but was going to be. In the third interpretation (352,13-15) (i) and (ii) are taken as:

- (i") Some Mikkalos, who is cultured, will perish tomorrow;
- (ii) (This) Mikkalos is (a) Mikkalos who is cultured,

where obviously these premisses imply nothing about this Mikkalos. Alexander's last suggestion (352,19-26) is that (iii) is false in the sense of not following syllogistically from (i) and (ii) and that all Aristotle is doing is indicating the difference between an indeterminate statement such as (i) and a determinate statement such as (i*). He concludes his discussion by giving the clearer examples to which I have already referred.

5. 'Sick' and 'sickness' as terms (chapter 34)

Aristotle's discussion in chapter 34 is compressed and problematic. I here describe Alexander's construal of it. Consider the following two Aristotelian sentences:

Sickness holds of no health; Sickness holds of no human being. The first of these is most naturally taken to correspond to:

Health is not sickness,

the second to:

No human being is sick.

Aristotle marks this difference by saying that the predicate term in the first case is the state (*hexis*), sickness (*nosos*), and in the second the thing corresponding to (*kata*) the state, being sick (*nosoun* or *nosein*). In chapter 34 Aristotle considers problems which arise when the terms of an argument are construed as states when they should be construed as things corresponding to the state. The first case he considers (47b40-48a15) is related to Celarent₁:

- (ia) Health holds of no sickness;
- (ib) sickness holds of every human being;
- (ic) therefore, health holds of no human being.

Here when the major premiss is construed in terms of states it expresses the necessary truth:

(ia_s) Sickness is not health;

And when sickness in the minor and health in the conclusion are construed in terms of things corresponding to states, they express:

(ib_c) Every human being is sick, (ic_c) No human being is healthy.

Alexander first (353,30) takes (ib_c) to be an unqualified truth, so that on Aristotle's account of Celarent with a necessary major and an unqualifed minor (An. Pr. 1.9, 30a17-23) (ic_c) should be necessary, but it is not. However, it is easy enough to say that there is no difficulty here because the terms sickness and health have been construed in two different ways in the argument.

If the major premiss is construed in terms of being healthy and being sick it says:

(iac) Nothing sick is healthy,

We now have a valid instance of Celarent, but the minor premiss and conclusion look false. Aristotle says (48a13-14) 'there is no syllogism, except of something contingent'. Commenting, Alexander says (354,25-6) that (ib_c) is either contingent or unqualified and also takes (ia_c) to be

a contingent truth, since a sick person *could* be healthy. Since, according to Aristotle's theory (*An. Pr.* 1.14, 33a1-5 and 1.15, 33b36-40), Celarent with a contingent major and either a contingent or an unqualified minor yields a contingent conclusion, it is possible to say that there is a syllogism with a contingent conclusion.

In the second figure Aristotle considers (48a15-18) a case of Cesare:

- (iia) Health holds of no sickness;
- (iib) health holds of every human being;
- (iic) therefore, sickness holds of no human being.

The mixed construal of the terms leads to

(iia_s) Sickness is not health;

- (iib_c) every human being is healthy;
- (iic_c) therefore, no human being is sick.

According to Aristotle's theory (An. Pr. 1.10, 30b9-13) Cesare with a necessary major and unqualified minor yields a necessary conclusion, so that, (iic_c) would be necessary, which it clearly is not. Properly construed (iia) becomes:

(iia_c) Nothing sick is healthy.

Aristotle says nothing about the argument construed in terms of things corresponding to states, but on his theory Cesare with a contingent major and contingent or unqualified minor yields no conclusion at all (An. Pr. 1.17 and 1.28, 37b19-23). In this case Alexander explicitly takes (iic_c) as unqualified and apparently takes (iia_c) as necessary, (iib_c) as unqualified, since he says (355,16-19) that this example counts against the claim that 'the mixture under consideration', presumably Cesare with a necessary major and unqualified minor, yields a necessary conclusion. So with this caveat he is able to squeeze a valid syllogism out of Aristotle's second-figure case.

The only thing Aristotle says about the third-figure case is that 'the mistake occurs with respect to contingency' (48a18-19), which Alexander takes to mean that the conclusion of the illegitimately construed argument should be contingent rather than necessary, as it was in the first- and second-figure cases. Alexander offers an example in Darapti:

- (iiia) Health holds of every human being;
- (iiib) sickness holds of every human being;
- (iiic) therefore, health holds of some sickness.

He takes (iiia_c) and (iiib_c) to be contingent truths and (iiic_s) to be necessarily false, whereas, according to Aristotle's theory (An. Pr. 1.20,

39a14-19) the conclusion in Darapti with contingent premisses is contingent. Alexander gets a valid syllogisim by taking (iiic_c) as contingently true (since a person who is sick *could* be healthy).

6. Grammatical case and the analysis of arguments (chapter 36)

In chapter 35 Aristotle points out that analysis is simpler if there are names for the terms, but cautions against thinking that the inability to find names for terms means that a proposition cannot be proved. Later in chapter 39 he urges that one take names in place of phrases, whenever names exist. In chapter 36 he considers arguments such as:

There is opportunity for a god; there is no time which is needed for a god; therefore, opportunity is not time which is needed. (48b35-7)

Of the analysis of this argument he says:

As terms one should posit opportunity, time which is needed, and god, but take the premiss using the case ($pt\hat{o}sis$) of the name. For we say without qualification that one should always take the terms using nominatives ($kl\hat{e}seis$ tôn onomatôn) (for example, 'human being' or 'good' or 'contraries' and not 'of a human being' or 'of good' or 'of contraries'), but that one should take the premisses using the cases of the names. For a proposition might say that something is, for example, equal to him, or, for example, double of him, or, for example, striking or seeing him, or he (for example, a human being is an animal), or if the name occurs in the proposition in some other way. (48b37-49a6)

In other words, the terms in the argument just given are expressed with the nominative case as *kairos*, *khronos deôn*, and *theos*, although to make the argument work one or more terms will have to be expressed in other cases. In the example 'god' occurs in the dative, in Alexander's formulation (365, 22-3):

theôi kairos esti, theôi khronos deôn ouk estin, tis kairos khronos deôn ouk estin.

Aristotle, and, following him, Alexander sees this as an instance of Felapton₃ in which time which is needed is said to hold of no god in the second (major) premiss, opportunity is said to hold of every god in the first (minor) premiss, and time which is needed is denied of some opportunity in the conclusion. From our perspective the extension of the

notion of predication or holding to premisses such as these is dubious and probably unfortunate. But Alexander has no qualms about it:⁶

Sometimes predication is in the nominative, as when we say 'The body is white' or 'Health is good', sometimes in the genitive, as when we say 'A sibling is the sibling of a sibling', sometimes in the dative, as in 'What is similar is similar to a similar', sometimes in the accusative, as when we say 'The large is called large with respect to the small' or 'Plato praises Socrates' (359,29-33)

7. Duplication and co-predication (chapter 38)

Chapter 37 makes simple remarks about the correlation between the forms of holding and the categories of being and suggests there is a distinction between holding simply or in combination. It calls for further investigation of the subject. Alexander refers to *On Interpretation* and Theophrastus' *On Affirmation*.

At the beginning of chapter 38 Aristotle takes up as an example the following argument:⁷

Of good there is knowledge that it is good; justice is good; therefore, of justice there is knowledge that it is good.

Here, for Aristotle, the terms are:

knowledge that it is good (major), good (middle), justice (minor),

and the syllogism is a case of Barbara₁. He refers to 'good' as being duplicated (*epanadiploumenon*, 49a11) and predicated in addition (*epikatêgoroumenon*, 49a25), and insists that what is duplicated should be put with the major term and not with the middle. Doing the latter would produce an argument with a 'false and unintelligible' minor premiss:

Of good that it is good there is knowledge; justice is good that it is good; therefore, of justice there is knowledge.

What he says is correct enough, but the issue is not really duplication. The same issues would arise for, e.g.:

Of good there is belief that it is bad; justice is good; therefore, of justice there is belief that it is bad.

In commenting Alexander uses both of Aristotle's words, and also forms of 'co-predicate' (proskatêgorein). Alexander's understanding is that the middle term 'good' is duplicated because it serves as both the middle term and as co-predicated with (or predicated in addition to) 'knowledge' in the major term 'knowledge that it is good'. 49a25 is the only occurrence of any form of epikatêgoroumenon in Aristotle, and Alexander apparently thinks it is synonymous with proskategoroumenon (cf. 369,14-15,23). Alexander uses proskatêgoreisthai again in connection with chapter 46, in which Aristotle discusses the relationships among predications such as 'is just', 'is not-just', 'is not just' (the denial of 'is just'), and 'is not not-just' (the denial of 'is not-just').⁸ Alexander says that the 'is' in sentences such as 'Socrates is just' and 'Socrates is not-just' is co-predicated (along with 'just' or 'not-just') of Socrates. The authority for speaking of co-predication in these cases is On Interpretation 10, 19b19-31 where Aristotle uses the term in the same kind of context and refers to chapter 46 of the Analytics. In the On Interpretation passage Aristotle refers to 'is' as a third component of 'Socrates is just' (triton sunkeisthai), but that he does not hold the implausible view that 'is' makes a second predication of Socrates is made clear enough by the one other passage (Metaphysics 10, 1054a16-18)⁹ in which he mentions co-predication, when he says that 'one human being' doesn't co-predicate anything different than 'human being' and adds that being isn't something other than being something or being qualified in a certain way or being a certain size. In his commentary on the Metaphysics (CAG 1, 614,23-6)¹⁰ [Alexander] describes Aristotle as saying in this passage that just because 'one' is co-predicated of human being it is not possible to claim that saying 'human being' is different from saying 'one human being' so that one is something; 'for just as "is" is not some entity (phusis) in and of itself which is predicated as such of human being, so too "one" isn't either'. If the cases discussed by Aristotle in chapter 38 do involve co-predication, as Alexander thinks, it is certainly a different kind than that suggested by the passages in which Aristotle himself speaks of co-predication.

Alexander takes Aristotle to be extending his discussion from duplication to co-predication in general at 49a27 when he contrasts an argument in which the conclusion is 'some this or in some respect or in some way' with one in which it is 'something without qualification'. Aristotle's examples for the contrast may be formulated:

- (i) Of the good there is knowledge that it is good.
- (ii) There is knowledge of the good.

Alexander repeats Aristotle's second example at 370,6-10, but prior to that he gives examples for the first case using the expression *qua*, e.g., 'The healthful is known *qua* good'. Aristotle says that for (ii) one should take 'being' as middle term and for (i) 'that it is something'. At 370,10-18 Alexander treats 'being' as one example of a general middle which holds of the subject and gives this example of a proof of (ii):

There is knowledge of being; the good is a being; therefore, there is knowledge of the good.

But when at 49a36-b1 Aristotle takes the relevant conclusion of these two premisses to be 'there is knowledge of the good that it is', Alexander repeats what Aristotle says without comment (371,29-35).

Aristotle's syllogism for (i) is:

Of something there is knowledge that it is something; the good is something; therefore, of the good there is knowledge that it is good.

Aristotle explains that 'something' indicates the 'specific substance' of the good, so perhaps we can formulate his example as:

Of any X there is knowledge that it is X; the good is an X; therefore, of the good there is knowledge that it is good.

Although Alexander briefly expresses agreement that this sort of thing is a proper syllogism at 371,11-13, he maintains that Aristotle's point is that for (i) one cannot take as middle a general term like 'being', since it is is not known that being is good, but should take a predicate such as choiceworthy, where clearly the choiceworthy is known to be good and the good is choiceworthy (370,18-371,6).

8. The importance of meaning (chapters 39-41)

In chapter 39 Aristotle urges substituting synonymous expressions, particularly names, for synonymous expressions. Alexander takes the occasion to say that 'Syllogisms do not exist in the words they contain but in what the words mean' (372,29-30), and he contrasts Aristotle's position here with that of the Stoics, 'who stick closely to the way things are expressed and not to what the expressions mean'. As an example of their denial that a syllogism remains the same when an expression in it is replaced by an equivalent Alexander gives the following:

... Although 'If A, then B' means the same thing as 'B follows from A', they say that a formulation such as: If A, then B; but A; therefore B¹¹

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is a syllogistic argument, but that B follows from A; but A; therefore B is conclusive but not syllogistic. (373,31-5)

When in chapter 40 Aristotle points to a distinction between (i) 'Pleasure is good' and (ii) 'Pleasure is the good' Alexander makes the converse point about attending to meaning rather than formulation: a slight change of expression may yield a big change in meaning. Aristotle does not say what the difference between the (i) and (ii) is, but at 374,8-10 Alexander says that it is the difference between 'What is pleasant is good' and 'What is pleasant and only what is pleasant is good'. Alexander gives two other cases in which the presence or absence of the definite article changes the truth value of a sentence; these correspond to the English:

(A) man is an animal (zôion), Man is (the species) animal (to zôion),

and

Snow is white (*leukon*), Snow is whiteness (*to leukon*).

Alexander concludes his discussion at 374,21-36 with an example in which the meaning of an expression, namely, 'It isn't night (ou nux estin)' is different in different contexts. The following argument, he says, was used as a counterexample to the argument involving three conditionals:¹²

If there is nothing, it isn't night; if it isn't night, it is day; therefore, if there is nothing, it is day.

He says that in the first premiss *ou nux estin* means that there is no night at all, but it does not follow from the fact that there is no night at all that it is day.

At the beginning of chapter 41 Aristotle asserts that there is a difference between:

(i) A holds of everything of which B holds (*hôi to B huparkhei, toutôi panti to A huparkhei*)

and:

(ii) A holds of everything of all of which B holds (hôi panti to B huparkhei, kai to A panti huparkhei);¹³

but he never says explicitly what the difference is, and it appears that Theophrastus thought they were equivalent (379,9-11). Alexander is committed to finding a difference. As he says, (ii) is equivalent to the universal affirmative:

(ii') A holds of all B.

but Alexander takes (i) to be an indeterminate statement which may mean either (ii) or:

(ia) A holds of everything of some of which B holds.

The meaning of (ia) is not clear to me, but Alexander says it is equivalent to the particular affirmative:

(ia') A holds of some B.

Obviously, on this reading (i) and (ii) are not equivalent.

9. The analysis of arguments from a hypothesis (chapter 44)

The brief chapter 42 states that the components of a composite syllogism may be in more than one figure and that not every kind of proposition is proved in every figure. Alexander develops Aristotle's claims in considerable detail. In the even briefer chapter 43 Aristotle makes a remark about focusing on one term in a definition. Alexander, again, expands what he says by talking about various ways in which a definition can be refuted. In chapter 44 Aristotle takes up the analysis of arguments from a hypothesis. I have discussed most of this chapter in section 4 of the Introduction to Mueller (2006). Here I discuss only the difficulties raised by Aristotle's example of a proof based on an agreement. Consider:

(i) If X and Y are contraries and x is the capacity to be X and y is the capacity to be Y, then x and y are the same.

(ii) If X and Y are contraries and x is the knowledge of X and y is the knowledge of Y, then x and y are the same.

The agreement Aristotle considers is:

If (i) is not true, then (ii) is not true.

The argument that (i) is not true apparently uses:

(iii) If some z is the capacity for X and Y, something can be X and Y at the same time;

(iv) healthy (hugieinos) and sick (nosôdês) are contraries;

(v) nothing can be healthy and sick at the same time.

At 387,5 (cf. 387,35-388,13) Alexander points out that this argument looks to be hypothetical, but he offers his own argument, which he takes to be a categorical syllogism, starting at 386,31:

Being healthy and being sick are contraries; there is not one capacity for being healthy and being sick; therefore, there is not one capacity for all contraries.

Here the second premiss would appear to be question-begging. Alexander offers a syllogism for it:

Things for which there is the same capacity produce the same thing (for what has the capacity for heating heats and what has the capacity for cooling cools);

being healthy and being sick do not produce the same thing; therefore, the capacity for being healthy and the capacity for being sick are not the same.

In this case the first premiss appears to be question-begging, but Alexander shows no qualms about it.

10. A formal exercise (chapter 45)

This chapter is a straightforward formal exercise in syllogistic with no clear connection with what precedes it. The question Aristotle raises is this:

If the only rules of transformation are the conversion rules,¹⁴ and a conclusion is proved using a syllogism in one figure, can that syllogism be reduced to a syllogism with the same conclusion in another figure?

Aristotle has already shown in chapters 5 and 6 that the two indirectly reduced syllogisms, $Baroco_2$ and $Bocardo_3$, cannot be directly reduced to the first figure, and that the other syllogisms in the second and third figure can. In fact $Baroco_2$ and $Bocardo_3$ cannot be directly reduced at all because a particular negative premiss does not convert and conversion of a universal affirmative premiss yields a weaker particular affirmative premiss. This point is made by Aristotle for $Baroco_2$ and the

first figure at 50b30-32 (392,7-393,4), for $Bocardo_3$ and the first figure at 51a18-22 (394,32-6), for $Baroco_2$ and the third figure at 51a31-3 (395,22-35), and for $Bocardo_3$ and the second figure at 51a37-9 (396,11-24). Aristotle has already described the reduction of the other secondand third-figure syllogisms to the first figure in chapters 5 and 6, and he repeats what he has said there in this chapter:

(50b17-21; 390,34-391,2);
(50b21-5; 391,23-392,2);
(50b25-30; 392,4-7);
(51a3-7; 394,2-10);
(51a7-8; 394,10-13);
(51a8-12; 394,13-24);
(51a12-15; 394,24-8);
(51a15-18; 394,28-30).

Barbara₁ cannot be directly reduced to a second-figure syllogism because there are no universal affirmative conclusions in the second figure and neither it nor Celarent₁ can be directly reduced to a third-figure syllogism because there are no universal conclusions in the third figure. But Aristotle shows:

Celarent₁ \rightarrow Cesare₂ (50b9-13; 390,31-4).

Neither Aristotle nor Alexander points out that $Celarent_1$ cannot be reduced to Camestres₂. For Darii₁ and Ferio₁ one has:

$Darii_1 \rightarrow Datisi_3$	(50b35-8; 393,20-24);
$\operatorname{Ferio}_1 \rightarrow \operatorname{Festino}_2$	(50b13-16; not discussed by Alexander);
$Ferio_1 \rightarrow Ferison_3$	(50b38-40; 393,24-9).

Darii₁ and the three third-figure syllogisms with particular affirmative conclusions (Darapti₃, Datisi₃, and Disamis₃) cannot be reduced to the second figure because it admits no such cconclusions. Ferio₁ and also Festino₂ cannot be directly reduced to Felapton₃ because the premisses of Felapton₃ are stronger than those of either Ferio₁ or Festino₂. The remaining cases are:

$Festino_2 \rightarrow Ferison_3$	(51a28-30; 395,17-22);
$\operatorname{Ferison}_3 \rightarrow \operatorname{Festino}_2$	(51a35-7; 396,9-11);
$Felapton_3 \rightarrow Festino_2$	(51a35-7; 396,9-11).

11. The nature of negation (chapter 46)

In chapter 46 Aristotle returns to issues of formal representation, describing the relations of implication, non-implication, compatibility, and incompatibility holding between such expressions as 'not being white' ($m\hat{e}$ einai leukon) and 'being not-white' (einai $m\hat{e}$ leukon) and

their negations, and insisting that, for example, the negation of 'being white' is 'not being white' and not 'being not-white', so that, 'Socrates is not white' ($S\delta krat\hat{e}s$ ouk esti leukos) and not 'Socrates is not-white' ($S\delta krat\hat{e}s$ estin ou leukos) is the negation of 'Socrates is white' ($S\delta krat\hat{e}s$ esti leukos). At 402,1 in connection with this sentence Alexander mentions that some people, presumably Stoics, denied that 'Socrates is not white' is a negation on the grounds that both it and 'Socrates is white' are false when there is no Socrates. The genuine negation is 'It is not the case that Socrates is white' ($oukhi S\delta krat\hat{e}s$ esti leukos); in other words, they stressed that negation is an operator which applies to whole sentences, not terms. The important issue in the example is the non-existence of the subject term; other cases of the same kind in which a sentence with and without a negation were said to be both false are:

'He is walking' and 'He is not walking' said of a female; 'The teacher Kallias is walking' and 'The teacher Kallias is not walking' said of a Kallias who is not a teacher.

To refute the claim that both 'Socrates is white' and 'Socrates is not white' assert or presuppose the existence of Socrates, Alexander introduces more complicated examples such as 'A house is being built', which does not imply that a house which is being built exists, and 'Socrates died', which does not imply that Socrates both died and exists. Alexander suggests – without an adequate explanation – that for the Stoics the true sentence 'Socrates died' is a 'temporal inflection' (*enklisis kata khronon*) of the whole of the once true sentence 'Socrates is dying' and not just a combination of a name and a verb. Alexander responds that verbs, not sentences as wholes, are inflected and that 'in "Socrates is dying" "Socrates" indicates the existing Socrates, but in "Socrates died" it is used anaphorically (*kat' anaphoran*); for in the latter case "Socrates" signifies this man who was Socrates (not who exists)' (403,27-30). He continues:

For when it is uttered just by itself a name does not signify either existence or non-existence. For what is signified by it does not further signify non-existence, nor does it by itself signify existence rather than past or future existence; rather it itself is only a sign for the thing. And <the verb> which is combined with it indicates whether the thing is or was or will be. So, in this way, all of 'Socrates was alive', 'Socrates died', and 'Socrates did philosophy' are uttered anaphorically, with what is added to the name indicating that what is signified by the name existed previously. So, since each of these is true, their opposites, 'Socrates did not die', 'Socrates was not alive', 'Socrates did not do philosophy', are false. (404,3-11; cf. 404,35-405,5)

Similarly Alexander insists that 'He is not walking' said of a female and 'The teacher Kallias is not walking' said of a non-teacher are true since the sentences without the 'not' are false. Perhaps we can summarize Alexander's position in terms of the example 'Socrates is good'. By itself and in the context of a sentence the word 'Socrates' refers to a certain person, but does not assert that he exists. In the sentence 'Socrates is good' the predicate 'is good' implies that Socrates exists, just as the predicate 'will be good' implies that Socrates will exist, and so on. If Socrates does not exist then 'Socrates is good' is false and so is 'Socrates is not-good'; and so their negations 'Socrates is not good' and 'Socrates is not not-good' are true.

Notes

1. The manuscript probably dates from the eleventh century, rather than the twelfth or thirteenth as Wallies (p. ix) suggests; see Stornajolo (1895), pp. 53-4.

2. There is also a brief reference to modal syllogistic at 352,16-19 in connection with a confusing Aristotelian example at 47b29-37 (see section 4 below), and references to modal propositions at 392,23-5, 397,16-20, and 410,35-412,2.

3. It is important to realize that these nouns and the corresponding verbs are also used by Aristotle for the representation of a more or less ordinary argument in the more formal language of syllogistic.

4. See, e.g., 352,16-19, where he raises the possibility that the argument is sound if both (i) and (iii) are interpreted as contingent sentences.

5. My interpretation here depends on inserting several words; see the note on 351,33.

6. It appears that Aristotle is unwilling to speak about predication (or saying of) in these cases, but only of holding; see, e.g., 48a40-b2 and b24. Alexander sometimes (360,5-6; 363,8-10) contrasts these problematic predications with predications in the strict sense or predications without qualification, but in general he doesn't worry about such niceties.

7. I have adopted uniform formulations in this section, whereas Aristotle's and Alexander's show variations which are recorded in the translation.

8. cf. section 11 below.

9. The same thing is borne out by Aristotle's one other relevant use of *epanadiploumenon* in *Metaph.* 3, 1003b26-32.

10. cf. Ammonius in Int. (CAG 4.5) 165,4-30. Ammonius stresses that 'is' is needed to weave 'Socrates' and 'justice' together to make an assertion.

11. The first Stoic indemonstrable; see section 4 of the Introduction to Mueller (2006).

12. On these arguments see section 4 of the Introduction to Mueller (2006).

13. Other formulations of this proposition are:

A is said of that of all of which B is said;

A holds of everything of any of which B is said;

A is said of all of whatever B is said.

14. Aristotle himself never takes into account change in the order of premisses. Alexander of Aphrodisias On Aristotle Prior Analytics 1.32-46

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46b40-47a9 [After this we should say] how we can reduce 340,3 syllogisms to the figures previously described, [since this part of the investigation still remains. For if we were to study the generation of syllogisms and we were to have the ability to discover them and, further, we were able to analyze those we produced into the figures previously described, our initial project would be complete. It will also result at the same time that things said previously are confirmed and it will be more evident that things are this way because of what we will now say. For everything which is true should be consistent with itself in every way].

Here he describes for us a method with which we will be able to $\mathbf{5}$ reduce every proposed syllogism to its appropriate figure, a method which will also make us able to discover which arguments that are put forward are syllogistic and which appear to be but are not in fact syllogistic. For if some argument cannot be reduced to any of the three figures when we use this method which he is presenting to us, or if it can be reduced to one of them but not to one of the syllogistic 10 combinations, it is clear that it will not be syllogistic. It is because of the method which is presented now that these books are entitled 'Analytics'. And he describes the analysis not just of simple arguments but also of composite ones. To describe a method with which we ourselves can analyze and reduce all proposed <arguments> is not the same as reducing arguments to the figures (as is done in the two books of Theophrastus entitled 'Arguments which have been reduced 15 to the figures').² For the person who possesses the method of analysis and has the knowledge will be able to reduce all <arguments>, even those which are not vet known: but the person who knows only certain arguments which have been reduced, could reduce only these, since he has an experience of these from which explanation is missing but not knowledge. Theophrastus also describes this same method in the work entitled 'On the Analysis of Syllogisms'.

He says that this subject which still remains is the main part of 20 the treatment of syllogisms. For suppose we were to know how syllogisms are generated (something he described using the three figures and the syllogistic combinations in each of them), and we ourselves also possessed a method of discovering and making syllogisms (which he taught us when he showed³ that one should select 25

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the consequents of each term in a problem, their antecedents, and the things which do not hold of each of them, and that one should make⁴ some of these which are combined in an appropriate relation for the problem the middle term); then, if, in addition to those two things, we

- 30 were also able to analyze syllogisms already produced into the syllogistic figures, the proposed undertaking (he says) would be complete. He says that the understanding of the analysis of syllogisms will also be useful for making firm things said previously. These previously said things are that every syllogism is in the three figures, and that
- 341,1 every one is composed of three terms and two immediately connected premisses; for the analysis into the three figures of syllogisms which have been produced will make those things more credible and firmer for us (for they will be made firm by the fact that it is not possible for the syllogisms which have been produced to be reduced to anything other than one of these figures).
 - 5 **47a10-12** First, then, we should try to take the two premisses of the syllogism; for it is easier to divide into greater things than into smaller ones, [and composites are greater than what they are composed of].

Since every syllogism, whether simple or composite, has been shown to consist of two immediately connected premisses and three terms,
he says that we should first take the two premisses of the proposed syllogism. It is clear that these are composed of three terms, but it is easier to find greater parts than smaller ones. And composites are greater than the simples of which they are composed, and the premisses have this character relative to the terms since they are composed of the terms.

47a13-22 And then we should investigate which are universal and which particular, [and if both premisses are not assumed <explicitly> we should posit the second one. For sometimes they put forward the universal premiss but do not assume what is contained in it, either when they are writing or when they are asking questions. Or they put forward these premisses but leave out the premisses through which they are inferred and ask for other things in an empty way. So we should investigate if something superfluous has been assumed and if something necessary has been left out, and one should posit the latter and get rid of the former until one reaches the two premisses. For without these it is not possible to reduce the arguments which have been put forward in this way].

15 He says that after taking the immediately connected premisses we should examine which is universal and the major and which is the

minor and more particular. For even if both are universal, nevertheless in each figure one of them is the major and one the minor, the major being the one containing the major term, which is predicate in the conclusion, the minor being the one containing the subject <of the conclusion>. But since sometimes people who wish to produce a syllogism do not posit both premisses, but leave out one of them, he says that one should take the omitted one together with which the assumed premiss immediately implies the proposed conclusion. For sometimes those who argue syllogistically assume the universal premiss but leave out the one under it as something known.

An example is if someone were to infer that health is good, assuming the universal premiss 'Everything appropriate is good', but not assuming in addition the other premiss (that is, 'Health is appropriate'), but leaving it out as something known. So we, who wish to reduce the syllogism and analyze it into one of the figures, should posit the left-out premiss: for when it is posited one will find out what was proposed, namely, in which figure the syllogism is. For when the premiss which I mentioned is added, it becomes known that there is 30 a first figure, since the middle term, appropriate, is predicated of health and is the subject of good. But if this is not posited, what is stated will not be a syllogism at all. Or again, another example would be if someone were to assume that everything choiceworthy is good and infer that therefore pleasure is good, leaving out the minor premiss, that pleasure is choiceworthy, as known. Similarly, if someone were to assume that no one who secretly takes away what belongs to another is good and infer that therefore no thief is good, omitting as known the minor premiss 'Every thief takes away what belongs to another'. In this way the minor premiss is left out in cases of this sort.

Conversely there are cases in which they leave out the universal 5 premiss as known, but posit the minor,⁵ as in the case of the person who syllogizes that this person deserves punishment through the proposition 'He is an adulterer' (or a thief or a temple robber). In all these cases the universal premiss, which says that every adulterer (or every thief or every temple robber) deserves punishment, is omitted as evident; the conclusion of these is 'Therefore this person deserves punishment'. Or again, if someone were to assume 'This person is a 10 dandy' and infer 'Therefore, he is an adulterer'.⁶ leaving out the universal premiss 'Every dandy is an adulterer'. So the person who is trying to analyze and reduce should himself again add this premiss. I mean the universal one.

Having said, 'For sometimes they put forward the universal premiss but do not assume what is contained in it', and wanting to say the converse he adds 'Or they put forward these premisses (that is, 15 the particular⁷ premisses) but leave out the premisses through which they are inferred' (these are the universal premisses). For particular premisses are proved and made credible through universal ones

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because they are under them (and so they also follow from them). For he referred to the left-out particular premiss before when he said that they 'do not assume what is contained in it'. But if a particular

- 20 premiss is contained in a universal one it would be reasonable to say also that a particular premiss is inferred from a universal one. Furthermore, if the posited universal premiss always establishes along with itself all the particular premisses which are under it, it would be reasonable to say that the particulars are inferred through the universals. When he says 'the premisses through which they are inferred', he is also speaking about the conclusions of what is as-
- 25 sumed in the case of the particular premisses, since in syllogisms in which a particular premiss has been assumed the conclusion is also particular. Indeed, this conclusion is inferred through a universal premiss because it is impossible for there to be a syllogism without a universal premiss. He adds the words 'either when they are writing or when they are asking questions' since some people do these things in conversation and in writing.
- 30 It is possible that the words 'They put forward these premisses but leave out the premisses through which they are inferred' do not refer to the major premiss as being left out – when it would be accepted⁸ –, but he leaves out this case either because the argument is not yet syllogistic at all when the major is left out (because when the major
- 35 is posited the minor has in a way also been assumed potentially because it is contained by the major, but, since the major cannot be contained by the minor, there can no longer be a syllogism when only the minor is assumed) or because when the major is left out we will add it in the same way as we add the minor if it is missing. Rather he
- 343,1 is now speaking about syllogisms in which both the premisses immediately connected to the conclusion are assumed, but the premisses which prove those premisses are left out, it being clear that those also need proof.

Or perhaps it is not necessary to add any of those premisses for the analysis of the syllogism under consideration since the immediately connected premisses are sufficient for the reduction. However, some other premisses are added in an empty way and superfluously, but conveying the impression that they prove the immediately connected premisses. But just as the premisses which establish the premisses immediately connected with the proposed conclusion are left out and others are added in an empty way, the situation is the same when the premisses which establish the immediately connected premisses are

10 posited, but the immediately connected premisses are left out. So one should pay attention to these premisses which are external to the immediately connected ones, and if they are such that the two premisses are inferred and proved through them (each of the immediately connected premisses for what is proved being a conclusion of them), it is clear that we will take them in the same way and

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reduce them to one of the figures. But if they do not prove one of the 15 premisses syllogistically or prove it in some other way (as premisses assumed inductively for establishing a universal premiss prove something), and they are not present for the sake of weight or something else useful, such as concealment or clarity,⁹ one should get rid of them, reject them, in the analyses of syllogisms as having been assumed in an empty and void way. But if these things were added for one of those reasons, one should even then distinguish them from 20 the premisses for the conclusion in the strict sense, but indicate the reason for which they are assumed. For it is necessary that the conclusion result 'because these things are the case'¹⁰ – if the conclusion results from a syllogism, but things posited in the way we have mentioned are not of this sort. For in the argument:¹¹

Everything which is self-moving moves forever; everything which moves forever is immortal,

the statement 'What moves something else and is moved by some other thing of which the motion ceases has a life which ceases' 25 contributes nothing towards the conclusion, 'Everything which is self-moving is immortal'; rather the original premisses imply it.

So he says that in analyses of syllogisms into the figures one should always investigate what has been assumed from outside superfluously and what necessary thing has been left out, and one should add what is necessary and get rid of the superfluous until, in our inquiry 30 into what has been assumed for the sake of what and what has been omitted we reach and discover the two premisses for the conclusion in the strict sense. For unless one takes these things and distinguishes and separates the superfluous <premisses> it is not possible to reduce to a figure the arguments which have been put forward in this way. An example <would be> if someone were to take the universal premiss 'Everything appropriate is good' and take 'Everything noble is good' and also take in a similar way 'Everything 30 advantageous is good' and then inferred as conclusion 'Therefore, health is good'. For in this argument 'Everything noble is good' and 'Everything advantageous is good' are superfluous, and the premiss which says 'Health is appropriate' has been omitted. For with this premiss 'Everything appropriate is good' implies the stated conclusion, 'Health is good'. And if it were assumed that everything 344.1appropriate is natural and that everything natural is good, with these premisses too the conclusion will be 'Therefore, health is good'; but again 'Health is appropriate' will have been omitted in the same way, and the premisses 'Everything appropriate is natural' and 'Everything natural is good' would prove the premiss 'Everything 5appropriate is good', which has been assumed.
47a22-8 [For some cases it is easy to see what is missing,] but some escape notice and are thought to imply something syllogistically because something does follow necessarily from what is assumed, [for example, if it were assumed that if a non-substance is done away with, a substance is not done away with and that if the components are done away with what they compose is destroyed. For, if these things are posited, it is necessary that a part of a substance be a substance, but this has not been inferred syllogistically through the premisses; rather premisses are missing].¹²

Here he indicates clearly to us that one should not simply attend to the conclusion and think that there is a syllogism if something follows necessarily from what is assumed. For it is not the case that if a syllogism proves something by necessity thereby also where something is proved to follow by necessity from what is assumed, this is a syllogism, since necessity is more inclusive than syllogism.¹³ Accordingly, it is not the case that if it follows by necessity from the

15 assumption that A is equal to B and C to B that A is also equal to C, that this is thereby a syllogism. There will be a syllogistic inference if we assume in addition a universal premiss which says that things equal to the same thing are also equal to each other and we draw together what were taken as two premisses into one premiss equivalent to the two. This premiss is 'A and C are equal to the same thing (since they are equal to B)'. In this way it follows syllogistically that 20 A and C are equal to each other.

Similar to this is thinking that one proves syllogistically that A is greater than C if one assumes that A is greater than B and B is greater than C, on the grounds that this conclusion does follow necessarily. But this is not in itself a syllogism unless the universal premiss 'Everything which is greater than what is greater than something is also greater than what is less than that' is assumed in addition and the two things

25 assumed are made into one premiss – the minor in the syllogism – which says that A is greater than B, which is greater than C. For in this way it will follow syllogistically that A is also greater than C.

Now frequently something follows necessarily not however syllogistically from some assumptions because of a peculiar feature of the subject matter when what is assumed relates to the source of neces-

30 sity, as in the case of definitions and *propria* when two affirmative premisses are taken in the second figure.¹⁴

The following argument is similar to the ones just mentioned:

This individual (for example, A) has the same parents as that one (for example, B);

but also B has the same parents as C;

therefore A has the same parents as C.

What is left out for there to be a syllogism is the universal premiss which says 'All things which have the same parents as someone are 35 siblings', to which one adds the divided premiss made one and saving 345.1that A and C have the same parents as B. In this way it follows that A and C are siblings. It is clear that the syllogism is through the added universal premiss because if the universal premiss were not true, the conclusion drawn from these assumptions would not be true. 5 For if we assumed that A is the sibling of B and B is the sibling of C, it would still not also be true that A is by necessity the sibling of C because the universal premiss that siblings of the same person are siblings of each other is not true. For a man who has a child and takes another wife who also has a child might have a child by her; this child would be a 10 sibling of each of their previously existing children, but the previously existing children would not therefore be siblings of each other.¹⁵

The <arguments> which more recent thinkers say reach a conclusion unsystematically are also of this sort. Because they say that these do not make a syllogistic inference they are correct, since many <unsystematically conclusive arguments> are of this kind. But they 15are totally mistaken because they think that these <arguments>, when they are taken in the way they posit them, are similar to categorical syllogisms, the subject of the present treatise. For if they were similar to categorical syllogisms, they would also be syllogisms. But, in fact, most arguments of this kind have all their premisses particular, but we showed that there cannot be a categorical syllogism without a universal premiss. For if some conclusion came about 20syllogistically from two particular premisses, it would be necessary that a similar conclusion result in the case of any subject matter. Therefore, as we have said, these are not syllogistic in themselves, but they become syllogisms when a universal premiss is added to them. The reason that the <arguments> said to reach a conclusion unsystematically have a consequence which follows by necessity from 25what is assumed is that they seem¹⁶ to reach their conclusion from the fact that when the premisses which they take are true, so is the universal premiss, which they leave out. And they divide the minor premiss into two premisses. <Arguments> of the following kind are like this:

Dion says that it is day; but also Dion speaks truly; therefore, it is day.

Or again:

Dion says that it is day; but also it is day; therefore, Dion speaks truly.

For if one assumes in addition that what someone says is the case, it follows that he speaks truly; and if one assumes in addition that a person speaks truly, it follows that what he says is the case. For in each of the arguments universal premisses which are true are omitted. In one case <we should have>:

Everything in saying which a person speaks truly is the case; but Dion in saving that it is day speaks truly;

35 (This premiss has been divided into 'Dion says that it is day' and 'But also Dion speaks truly'.) From these premisses the syllogistic conclusion is:

Therefore, it is day, as Dion says.

In the other case the omitted universal premiss is that whoever says of what is the case that it is the case speaks truly. But 'Dion says that

- it is day when it is day' has been divided, since it has been divided 346.1into 'Dion says that it is day' and 'Also it is day'. The conclusion 'Dion speaks truly' follows syllogistically and not unsystematically when the premisses are taken in this way. Categorical syllogisms differ from <arguments> which are said to reach a conclusion unsystemat
 - ically to the same extent as <arguments> taken in the one way differ $\mathbf{5}$ from <arguments> taken in the other.

47a22-8 For some cases it is easy to see what is missing, but some escape notice and are thought to imply something syllogistically¹⁷ because something does follow necessarily from what is assumed, [for example, if it were assumed that if a non-substance is done away with a substance is not done away with, and that if the components¹⁸ are done away with what they compose is destroyed. For, if these things are posited, it is necessary that a part of a substance be a substance, but this has not been inferred syllogistically through the premisses; rather premisses are missing].

- 10 He means in some cases;¹⁹ he says that in some cases it is not difficult to recognize what is needed to make the syllogism whole and what has been assumed superfluously, as in the case of the arguments we have just spoken about (since in these cases it is clear what has been omitted). But also in cases in which something different has been inferred as conclusion and not what follows from what is assumed, as in the case of the argument put forward by Epicurus which says:
- Death is nothing to us; for what has been dissolved lacks percep-15tion; and what lacks perception is nothing to us.²⁰

However, this is not what follows, but rather – in the first figure – that what has been dissolved is nothing to us.

Similarly in the case of the argument of Parmenides which infers that being is one thing [hen] from 'What is other than being is what is not, what is not is no thing [ouden]'.²¹ Here what follows is evident: it follows in the first figure from what is assumed that what is other than being is no thing [mêden], but it does not follow that therefore being is one thing, as Parmenides thinks. For the conclusion must always be composed of the extremes which have been taken in the two premisses. (And the extremes are the <terms> in the premisses which have been taken one time each in the positing of the premisses; for the term which is present in both premisses and is connected with each of the extremes is the middle.)

So, as I said, in some cases it is easier to detect the mistake in 25arguments. But in some cases it is not easy to recognize it. These cases are not syllogisms, but they seem to be because what is inferred does follow by necessity from what is assumed. This is clear in the cases we have mentioned and in the example which he lays out as 'If a non-substance is done away with, a substance is not done away 30 with, but if the components of something are done away with what they compose is destroyed'. On the basis of these things 'It is necessarv that a part of a substance be a substance'. However, this has not been proved syllogistically, but certain premisses are missing for producing a syllogism; that is, what ought to be assumed is not assumed, but what is assumed is equivalent to premisses from which something could be proved syllogistically, but something has also²² 35been omitted. There will be a syllogism if the assumptions are trans-347.1formed into their equivalents and what is left out is added. For 'If a non-substance is done away with, a substance is not done away with' is equivalent to its converse, 'A substance is done away with by a substance', and this is equivalent to 'What does away with a substance when it is done away with is a substance'; for if a substance is done away with when something is done away with that thing is a substance. And again one should add what is left out to 'If the 5components are done away with what they compose is destroyed', namely 'A whole is composed of its parts'; for it will also be true that if the parts are done away with the whole is destroyed, and from this it follows that if the parts of a substance are done away with the substance they compose is destroyed; an equivalent to this is 'The parts of a substance which do away with the substance when they are done away with are substance', which is assumed after being trans-10formed from the original premisses. So the premisses become:

The parts of a substance do away with the substance when they are done away with;

what does away with a substance when it is done away with is a substance.

From these the conclusion "Therefore the parts of a substance are substance' follows in the first figure. So premisses have been taken in place of other ones in the arguments and they were <previously> omitted.

15 47a28-40 Again, if, being a human being, it is necessary for it to be an animal, and, being an animal, it is necessary for it to be a substance, then,²³ being a human being, it is necessary for it to be a substance. <But this has not yet been inferred syllogistically;>²⁴ for the premisses are not related in the way we described.²⁵

[(47a31) We are misled in such cases by the fact that something does follow necessarily from what is assumed because a syllogism is also necessary. For necessity is more inclusive than syllogism since every syllogism is necessary, but not everything necessary is a syllogism. Consequently it is not the case that, if something follows when certain things are posited, one should straight away try for a reduction; rather one should first take the two premisses and then divide them in this way into terms, positing the middle term as the one which is expressed in both premisses (since in every figure it is necessary that the middle be in both premisses).]

He also finds fault with this example in which something ('Being a human being, it is a substance') follows by necessity but not syllogis-

- 20 tically from what is assumed ('Being a human being, it is an animal, and, being an animal, it is a substance'). For the premisses are not related in the way he said they must be if there is going to be a syllogism. That is to say, it is necessary that both premisses or in any case at least one be universal. But in this case neither has been taken as universal. However, because the universal premiss which has been omitted (and when it is posited, there will be a syllogism) is true, what
- 25 is thought to follow from what is assumed is thought to be true. The universal premiss is 'Every consequent of something is a consequent of what that thing is a consequent of'. In 'If, being a man, it is an animal and, being an animal, it is a substance' substance is a consequent of animal and animal is a consequent of human being. Therefore, substance is also a consequent of human being.

This can also be handled as follows:

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When among three things the second is a consequent of the first and the third of the second, the third also follows the first; among human being, animal, and substance, which are three things, animal follows human being, and substance follows animal;

therefore, among these things substance will also follow human being.

For when the universal premiss which we have just stated is assumed and there is added to it 'Being a human being, it is an animal and being an animal, it is a substance', it follows syllogistically that also among these things, being a human being, it is a substance.

It will be clear that the conclusion does not result from the assumed sequence <of premisses> but from the fact that the universal premiss which we added is true, if we choose another sequence which is also true, but is not subordinate to some universal truth, for example:

A exceeds B by a foot; B exceeds C by a foot.

But A will not also exceed C by a foot, since this is false. The reason for this is that the universal proposition which says that if something exceeds something by some measure and the latter exceeds something else by the same measure, the first will also exceed the third by the same measure is false.

It is clear from these words that <Aristotle> is saying that the argument said to involve three <conditionals> has its conclusion ('The first being, the third is') by necessity but not syllogistically; nor is the argument involving three <conditionals> a syllogism, nor, in general, is the <argument> called totally hypothetical.

Therefore, he had even more reasons for saying about the example 'Again, if, being a human being, it is necessary for it to be an animal ...', 'But this has not yet been inferred syllogistically; for the premisses are not related in the way we described' (because they were taken neither in a way which would prove something nor universally). For there will be a syllogism if they are taken this way:

Every human being is an animal; every animal is a substance.

But when they are taken in the other way what follows follows necessarily but not syllogistically, since every syllogism is posited to show holding or not holding.

Again it is possible to find fault with 'If, being a human being, it is 20 necessary for it to be an animal, and being an animal, it is necessary for it to be a substance' for making a non-syllogistic inference because its premisses 'human being-animal' and 'animal-substance' are indeterminate. But he speaks more clearly about this in the sequel.²⁶

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He has obviously made the difference between what is necessary and what is a syllogism clear with the words he has added. The reason he sets down these words is <given when he says,> 'Consequently it is not the case that, if something follows when certain things are posited, one should straight away try for a reduction'. For when something follows syllogistically one should reduce the argument to one of the figures since it is a syllogism, but not when something simply follows by necessity. If he says these things with this meaning,

30 the word 'posited' in the definition of syllogism,²⁷ since it is being applied to things assumed in a categorical way, would be equivalent to 'assumed to be or not to be' and not to 'hypothesized', since what follows necessarily from what is hypothesized does not follow syllogistically.²⁸

Having said that these things come about because of a middle term, he returns to what was said before, namely that one should first take the two premisses (since it is easier, as he said,²⁹ to divide into large and composite things), and then take the terms from the premisses, positing the middle term as the one which is in both premisses. For in every figure the term which is taken twice and combined as the same thing with each of the extremes is the middle term, since in the three figures the middle is like this.

349,1 **47a40-b9** So if the middle is both³⁰ predicated and predicated of [or it is predicated and something else is denied of it, there will be the first figure. But if it is both predicated and denied of something there will be the middle figure. And if other things are predicated of it or one thing is denied, another predicated, there will be the last figure. For the middle was this way in each figure. Similarly too if the premisses are not universal, since the determination of the middle is the same. So it is evident that there is no syllogism in the case of an argument in which the same thing is not said more than once, since a middle term has not been taken].

> After taking what are strictly speaking the premisses for the conclusion and taking the terms from them, the remaining reduction of the syllogism which is being reduced into the appropriate figure is easy since <the specification of the premisses and terms> make the relation of the middle to the extremes evident.

If the middle is in both premisses and is such that it is predicate of one of them and subject of the other there will be the first figure. (This is what is indicated by 'predicated and predicated of', since 'predicated of' refers to the subject when something is predicated of it affirmatively.) Similarly if it is predicated of something and something else is denied of it.

10 But if it is predicated of both extremes, but affirmatively of one,

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negatively of the other, the syllogism will be in the second figure; for if the middle is related in any other way to the extremes of which it is predicated, the combination will be in the second figure, but it won't be syllogistic.

But if both extremes (he calls these 'other things') are predicated of the middle, either <both> affirmatively or one affirmatively and the other negatively, the syllogism will be in the third figure.

Syllogisms will be reduced in the same way even if both premisses are not universal, but only one is. For whether both premisses are universal or only one is, the relation of the middle to the extremes will be of three types; the difference of the figures is determined by the differences among those relations.

He says that this is also clear from what has been said: an argument in which the same term has not been taken more than once is not a syllogism. For it is impossible for there to be a syllogism without a middle, as has been shown; but in every figure a middle is what is taken twice.

47b9-14 Since we know what sort of problem is inferred in each figure [and in which one it is universal and in which sort it is particular, it is evident that we should not look into all the figures, but in what is appropriate for each problem. When problems are inferred in more than one figure, we recognize the figure by the position of the middle].

He describes this method for the analysis of syllogisms into the figures for us. For since there are four types of problems and we know what sort is proved in each figure, we should take the problem, that is, the conclusion, and not inquire in all figures but in the one in which the problem is by its nature to be inferred. This is easy in the case of the universal affirmative, since this kind of problem is only proved in the first figure. Of other problems the universal negative is proved through the first and the second figure, only in one way through the first, in two through the second; again the particular affirmative is proved through the first and the third, only in one way through the first, in three ways through the third; and the particular negative is proved through the first, the second, and the third, only in one way through the first, in two through the second, and in three through the third. In the case of problems which are proved through more than one figure one should examine the figure in which it is inferred more often and more than once. And in fact the position of the middle term will make the figure known, since, if the same term is subject and predicate there will be the first figure, if it is only predicate the second, if only subject the third.³¹

Someone, reaching here, might ask how the account given is still the definition of syllogism if there are also other arguments in which 30

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'some things being posited something different from what is posited follows by necessity \dots '.³² In fact these arguments fail to satisfy the condition 'because these things are posited', as was said previously.³³

350,15 For the necessity in these arguments is not through the things posited, but derives from the fact that the universal, which is omitted, is true, and when this is added, this argument also becomes a syllogism. A totally hypothetical <argument> would be distinguished from a syllogism by the word 'posited'; for it also has its conclusion dependent on what is posited, but not 'because these things are the case'.³⁴

Chapter 33

47b15-40 As was said previously,³⁵ it frequently happens that one is misled about syllogisms because of necessity; [and some-350,10 times by the similarity in the way the terms are posited – we should not let this escape our notice. For example, if A is said of B and B of C; for one might think that when the terms are related this way there is a syllogism, but there is neither a syllogism nor any necessity. For let A be always being, B thinkable Aristomenes. C Aristomenes. It is true that A holds of B. since thinkable Aristomenes always is; but B also holds of C, since Aristomenes is thinkable Aristomenes: but A does not hold of C because Aristomenes is perishable. A syllogism does not result when the terms are related in this way, but it is necessary for the premiss AB to be taken universally, but it is false to maintain that every thinkable Aristomenes always is when Aristomenes is perishable.

(47b29) Again let C be Mikkalos, B be cultured Mikkalos, A perishing tomorrow. It is true to predicate B of C, since Mikkalos is cultured Mikkalos; but it is also true to predicate A of B, since cultured Mikkalos might perish tomorrow; but to predicate A of C is false. This example is the same as the previous one, since it is not universally true that cultured Mikkalos will perish tomorrow; but if this is not assumed, there is not a syllogism.

(47b38) So this mistake concerns a small point. We assent as if there was no difference between saying this holds of that and saying this holds of all that].

Having shown how one should make the analysis of syllogisms, he 20 now describes what things should be guarded against because they can lead us astray into thinking that non-syllogisms are syllogisms. For if we know this is to be guarded against, we will not labour in an empty way by trying to analyze non-syllogisms as if they were syllogisms. So first we should not just attend to the fact that what is inferred follows necessarily from what is assumed and think straight away that the argument is a syllogism, since in this way a mistake results. He has spoken about this³⁶ and shown that necessity in arguments is more inclusive than necessity in syllogisms. Sometimes we are misled by the similarity in the way the terms are posited, since there does not seem to be any difference if one posits a premiss indeterminately or universally. Therefore, too, if someone puts forward an indeterminate premiss we assent as if there was no difference from a universal proposition, but when things of this kind are assumed there is no syllogism.

He also teaches us this with examples. He takes A as always being. B as thinkable Aristomenes. C as Aristomenes. Taking these terms. he predicates A of B indeterminately, that is always being of thinkable Aristomenes, which is true since Aristomenes is always thinkable, that is, it is always possible to think of an Aristomenes and 35 to think certain things about Aristomenes: and he predicates B of C. since it is also true that the Aristomenes (which is C) is thinkable Aristomenes (that is B); but, he says, it is not true that A, always being, is predicated of C, Aristomenes, which is what seems to follow; for Aristomenes is not always because he is perishable. And in this $\mathbf{5}$ way the first combination in the first figure, that is, the first syllogism, would seem to be overthrown, if the conclusion is false when the premisses are true. But the reason for this is that the premisses were not taken syllogistically. For when the premiss AB, which says that thinkable Aristomenes always is, is taken indeterminately, it can be true, but if it is taken universally and becomes 'Every thinkable 10 Aristomenes always is', it is false. For the person who says 'Every thinkable Aristomenes always is' is not assuming that every thinkable Aristomenes is always thinkable but that <any> Aristomenes of whom to be thinkable holds always is. Since this is false, if the indeterminate proposition which says that thinkable Aristomenes always is signified this it would also be false, because no Aristomenes to whom to be thinkable belongs can always be. Now that indetermi-15 nate proposition meant one thing, but what it means becomes different and of a different kind when the word 'every' is added to it. since if, when 'every' was added to it, it still meant the same thing, the universal proposition would be true in the same way as the indeterminate one, since every Aristomenes is always thinkable.³⁷ Therefore what he is now saying is not the same as what he said a 20little while ago when he said 'Again, if, being a human being, it is necessary for it to be an animal'.³⁸ For, if the present <argument> is taken in that way, it becomes by necessity syllogistic, but not if it is taken in an indeterminate way, since it is necessary that the major premiss in the first figure always be universal.

He uses another example to demonstrate the same thing. He takes C as Mikkalos, B as cultured Mikkalos, and A as perishing tomorrow. Then, he predicates B of C, cultured Mikkalos of Mikkalos, since that

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is true (it seems that there was some cultured Mikkalos), and A of B, perishing tomorrow of cultured Mikkalos. How does he take this to be possible? In the sense in which thinkable Aristomenes always is or in

30 the sense that cultured Mikkalos will perish tomorrow by losing his culture? He says that although these things are true, A is not predicated truly of C, that is, <it is not true that> Mikkalos will perish tomorrow because he has also taken³⁹ as a hypothesis that <Mikkalos> will not perish <tomorrow> and cultured Mikkalos <will perish> tomorrow by losing his culture.

He says that the reason why this conclusion is false is that the major premiss, which says that it is possible that cultured Mikkalos

- 352,1 will perish tomorrow, is taken indeterminately, since, although it is true when it is taken indeterminately, it is not true when it is taken universally; for it is not true that it is possible that every cultured Mikkalos will perish tomorrow. He might be saying that this conclusion is false because people who put forward a sophism have assumed
 - 5 this hypothesis (for they take as hypotheses which are not impossible that cultured Mikkalos will not perish tomorrow and that he will lose his culture tomorrow; for they thought that they proved that what follows from what is assumed in the two propositions, which is possible, is impossible).

Or he might be saying that it is false that it is possible that every cultured Mikkalos will perish tomorrow because it is possible that

10 some Mikkalos is going to be cultured but is not yet. But the person who says that it is possible that every cultured Mikkalos will perish tomorrow without adding the words 'in fact' posits this [that some Mikkalos is going to be cultured but is not yet] as if it is also possible that he [the not yet cultured Mikkalos] will also perish; but it is not possible that what is not yet perish.

Or perhaps he takes as hypothesis that some cultured Mikkalos will perish tomorrow, since if this is hypothesized to be true it does not always follow that *this* Mikkalos will perish tomorrow.

Someone might inquire why the conclusion that it is possible that Mikkalos could perish tomorrow will not be true as a contengency. For the major premiss was taken to be contingent, and, since it is contingent, the conclusion will be contingent.

Or perhaps he says that it is false that A is predicated of C as equivalent to 'To say in this case that syllogistically A is predicated of C is false.' For even if it is true in some other sense, it is false in

20 of C is false'. For even if it is true in some other sense, it is false in terms of being in a syllogism; for he is not now speaking in a precise way about the conclusion but is only indicating to us the difference between an indeterminate and a universal premiss by taking it that, although the proposition saying that cultured Mikkalos will perish tomorrow is true, the proposition saying that every cultured Mikkalos will perish tomorrow is not always true; for the words 'It is not

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universally true that cultured Mikkalos will perish tomorrow' mean 25'It is not true that every cultured Mikkalos will perish tomorrow'.

It is also possible to prove what he says through clearer examples. Let A be good, B appropriate, and C pleasure. Let A, good, be predicated of B, appropriate, but also B, appropriate, of C, pleasure. Even if the premisses are true, good is not predicated of pleasure 30 without exception because it is not assumed that good is predicated of everything appropriate; it is assumed indeterminately. And if someone assumes that quality is active and that what is active is body, there will not be a syllogism that quality is therefore body. For he did not assume that everything active is body, since that is false; for, when it is taken indeterminately it is true, but it does not yield a syllogism. Similarly if one assumes that a human being is an animal 35 and animal is a genus, since a human being is not a genus.⁴⁰

In cases of this kind the mistake comes from assimilating the indeterminate to the universal, since they assent to and accept <what is said> as if the indeterminate is equivalent to the universal. But there is the greatest difference, since to state what is universal indeterminately is correct, but what is true indeterminately is not by necessity true universally. He says that this kind of mistake occurs because of a small point. For they are misled because they assent to what is 5indeterminate as universal as if there were no difference between taking a premiss as universal and taking it as indeterminate.

Chapter 3441

47b40-48a15 Frequently deception <will occur>42 because the terms in a premiss are not set out well, [for example, if A is health, B sickness, C human being. It is true to say that it is possible that A holds of no B (since health holds of no sickness), and again that B holds of all C (since every human being is subject to sickness). So it would seem to follow that it is possible that health holds of no human being. The reason for this is that the terms are not set out well verbally, since when terms corresponding to the states are substituted there will not be a syllogism; for example, if being healthy is posited instead of health and being sick instead of sickness, since it is not true to say that it is not possible that being healthy holds of one who is sick. But if this is not assumed there is no syllogism, except of something contingent. But this is not impossible, since it is possible that health holds of no human being].

If in analyzing the argument:

Being healthy of no one who is sick; being sick of every human being,

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we set out the terms as health and sickness and not as being healthy and being sick, this will cause us to make a mistake. He says that when the setting out of terms is not done properly it is the cause of a mistake. For when we take states themselves in the terms instead of

- 15things corresponding to the states as if there were no difference between taking them this way or that, then in this way we will make arguments non-syllogistic. For since it is not true or possible that a human being is health or a human being is sickness, but it can be true that a human being is sick (or that sickness or being sick holds of a human being) or again that a human being is healthy (or that health or being healthy holds of it), when we set out these terms to predicate them of a human being we should take the ways of being disposed corresponding to the states, not the states themselves. (Health and
- 20sickness are the states, 'is healthy' and 'is sick' the ways of being disposed corresponding to the states.) For, <if we take the states themselves.> we will either assume a false premiss or the argument will not be syllogistic. For if we take A as health, B as sickness, C as
- 25human being, and then assume that A holds of no B by necessity (which is true, since by necessity no sickness is health),⁴³ and we posit that B holds of all C, that is that sickness holds of every human being (this should not be thought impossible, since every human being is thought to be subject to sickness), then we should infer that by necessity health holds of no human being; for, in the first figure the
- 30 major has been taken to be necessary, the minor unqualified, and he thought⁴⁴ that in mixtures of this kind the conclusion is necessary. which is false in the case under consideration, since it is false that by necessity health <holds> of no human being. He says that this absurdity followed from the terms not being taken well. For one should not posit the states health and sickness for the terms A and B, but being healthy and being sick, the things corresponding to the 35
- 354,1states: for when the terms are taken this way it is not true that by necessity being healthy holds of no one who is sick.

One should take the terms in this way because 'Every human being is sick' can be taken as unqualifiedly true by hypothesis, but it is impossible that 'Every human being is sickness' be so taken. So it is necessary to posit what is predicated of human being as the middle

5 term; this is being sick, since in this way it is true that sickness holds of every human being, because a human being can be sick but not because he is sickness. For animal and sickness are not predicated of human being in the same way, since it is true that a human being is an animal but not true that a human being is a sickness because something like sickness is not predicated in the essence of human being. But by necessity no sickness is health insofar as it is not possible for sickness to be health.

And truth applies in one way to the first premiss, in another to the second; it applies to the first ['Sickness holds of no health'] because

sickness has been taken, to the second ['Sickness holds of every human being'] because being sick has been. If being healthy is predicated of what is sick, the proposition is contingent negative and not necessary, and so is the conclusion, since it is possible that being healthy holds of no human being; but if health is predicated the conclusion will also be necessary negative, since by necessity no human being is health. However, the proposition predicating sickness of every human being in such a way as to say that every human being is sickness is still not true. But if someone adds holding.⁴⁵ the same middle will not be being taken.

He says that if the terms for the states are transformed into the terms corresponding to the states, there will not result the syllogism 20which he said consists of a necessary negative universal major and an affirmative unqualified minor in the first figure, since the universal negative premiss is not necessary but contingent, so that there will not be a syllogism with a necessary conclusion.⁴⁶ but there will be one with a contingent negative conclusion. For the major premiss, 'Being healthy of no one who is sick', is contingent, the minor, which 25is 'Being sick of all human beings', is universal affirmative and unqualified or contingent. But whatever the premisses are, the combination will be syllogistic in the first figure, and the conclusion will not be necessary but contingent, as he says: 'Since it is possible that health holds of no human being'. And this is equivalent to 'It is 30 possible that no human being is healthy'; for that health or sickness holds <of something> means that it is healthy or sick.

48a15-18 Again, in the case of the middle figure the mistake will be similar. [For it is possible that health holds of no sickness and of every human being, so that it is possible that sickness holds of no human being.]

He shows in the case of the second figure that because of a similar setting out of terms the apparent conclusion is false when the premisses are taken as true. For if we assume that health holds of no sickness by necessity and holds of every human being, it would be thought to follow that by necessity sickness holds of no human being. But this is false since a human being is subject to sickness just as it is subject to health. However, the statements 'Health of no sickness' and 'Health of every human being' are not true in the same way. For 'Health of no sickness' is true because it says that no sickness is health (this is what it means); but 'Health of every human being' is true not because it says that every human being is health, but because it says that every human being is healthy. So if we substitute being healthy and being sick for health and sickness, the proposition 'By necessity being healthy of no one who is sick' will not be a true necessary universal negative one.

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- 10 It is also possible in the case of this combination to say the same thing: that the premiss which says that health is said of every human being is not true without qualification because it is not even possible that 'Every human being is health' is true. Consequently for this reason too the terms are not posited well, but one should transform the states into the things corresponding to the states. For the person who says that health holds of every human being says what is equivalent to 'Every human being is healthy', and so one should posit being healthy and not health as a term. However, if someone accepts that as true, the conclusion, 'Sickness of no human being' will also be true but unqualified, not necessary this again would speak against the claim that in the case of the mixture under consideration the conclusion is necessary.
- 20 **48a18-28** In the third figure the mistake occurs with respect to contingency⁴⁷ [since health and sickness, knowledge and ignorance, and in general contraries can hold of the same thing, but it is impossible for them to hold of one another. (But this does not agree with what was said before since before when it was possible for several things to hold of the same thing, it was possible for them to hold of each other.⁴⁸)

So it is evident that in all these cases the mistake results from the setting out of terms, since if the things corresponding to the states are substituted, nothing false results. Therefore, it is clear that in the case of premisses of this kind one should substitute what corresponds to the state for the state and posit it as term].

He has shown that in the case of the first and second figure when the major premiss is taken as necessary, the minor as unqualified, the conclusion is not necessary because the setting out of terms is not done appropriately; he now says that in the case of the third figure the absurdity does not arise because one of the premisses is taken to be necessary and the conclusion comes to be unlike⁴⁹ this kind of premiss. Rather it arises because when both premisses are taken to

- be contingent the conclusion does not follow. What occurs in the case of this figure is the reverse, since the conclusion which follows from contingent affirmative premisses is found to be necessary negative if the terms are taken in this way. For when in the third figure the two premisses are contingent universal affirmative, the conclusion which
- follows from such a combination, is neither particular affirmative contingent nor particular contingent negative; nor is it universal contingent affirmative or negative; rather it is necessary negative universal. That is why he also says, 'In the third figure the mistake
- 35 occurs with respect to contingency'. In the first and second figure the mistake occurs with respect to necessity, as I said, since when the

major premiss was thought to be necessary, the conclusion was not necessary.

Conversely, in the third figure the premisses are contingent, the conclusion necessary. For when the extremes are posited in this way. by necessity one <holds> of none of the other. But if this is so, a combination of this kind, which he previously showed to be syllogistic. would not be syllogistic. For it is possible that health <holds> of every $\mathbf{5}$ human being and it is possible that sickness <holds> of every human being, and it is necessary that health <holds> of no sickness. Again the reason for this is that the extreme terms which are predicated of human being have not been taken well, since one should not take health and sickness, but being healthy and being sick. For when the terms are taken in this way, the contingent universal affirmative premisses are true, but they are not true when they are taken the 10 other way. For the person who says that it is possible that health <holds> of every human being says what is equivalent to 'It is possible that every human being is healthy', since he takes health instead of being healthy. In this way each of the premisses is true, but not because it is possible that a human being is either health or sickness. So in setting out the terms one should posit being healthy, and similarly in the case of sickness. If the things corresponding to the 15 states are taken instead of the states in the same way, both the premisses and the conclusion which follows from them are true. For it is possible that being healthy <holds> of every human being, and similarly it is possible that being sick <holds> of every human being; and it is possible that being healthy <holds> of someone who is sick. and this is the conclusion of the combination under consideration. There will be the same account if certain other contrary states are taken.

And it seems more evident that this way of taking terms has been 20 overthrown in the case of the third figure than in the case of the figures prior to it. For in those cases it was overthrown relative to the assumption⁵⁰ that the conclusion is necessary when the major is necessary and the minor unqualified, and that is not agreed to. But in the case of the third figure it is done away with because it is agreed that⁵¹ the conclusion of contingent premisses is contingent. He recommends that in setting out the terms in the analysis of syllogisms of this kind we always set out the things corresponding to the states and not the states themselves.

It should be pointed out that sometimes a mistake occurs because the middle has not been taken to be the same in both premisses or because it has been taken to be the same in name only, for example, if it is assumed that colour <is said> of all white and white of every swan, since colour is not <said> of every swan because a swan is not a colour. The cause of the mistake is that white is not taken in the same way in both premisses; rather in the first it is the quality – since

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it is taken as whiteness, the state itself and in the second what corresponds to the state, having the quality as it were. For white as

- 35 whiteness is not true of swan if it were every swan would be whiteness –, but it is true as having whiteness. (Or perhaps this form is subsumed under the case in which the major premiss is taken indeterminately and not universally, since the proposition 'Colour of everything white' is not true, since it is false that everything white is a colour.)
- 357,1 Parmenides misleads himself when he says, 'What is other than being is what is not, what is not is nothing'.⁵² He took the first to be true because he used being instead of substance, since what is other than substance is not substance. Because he takes it in this way he tries to infer that being is one, but the second <premiss> does not
 - 5 keep being restricted to substance, since it is not true that what is other than substance is nothing. However, taking the first premiss as what is other than all being is all*⁵³ not being, one posits in addition the second, that not being is nothing; the conclusion which follows from these premisses taken this way is that what is other than all being is all* nothing, and because of this conclusion it is agreed that there is more than one being since the word 'all' indicates more than one.
 - 10 Of this kind is the <argument> which says:⁵⁴

What is limited has a beginning; what has a beginning came into being; therefore, what is limited has come into being, so that if the cosmos is limited, it has come into being.

For having a beginning has been taken one time with respect to magnitude (it has been taken this way in the case of what is limited and the cosmos), but in the case of having come into being it has been taken with respect to time. For what has a beginning with respect to time, not what has a beginning with respect to magnitude, has come into being. This is why Aristotle always says that it is necessary to guard against homonymy. (It is also the case that here the major premiss is not universal, since it isn't true that everything which has a beginning came into being.)

Chapter 35

48a29-31 One should not always seek to set out the terms with a name, since frequently there will be phrases for which there is no name.⁵⁵ [Consequently it is difficult to reduce such syllogisms.]

20 He says that there are many syllogisms in which some or all of the

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terms are indicated by a phrase and are phrases, not names; in these cases he says that those wishing to do an analysis should not always seek to set out the terms using names, but in taking the terms should set out the very phrases which are posited. Because of this the reduction is frequently difficult and troublesome because names are not found for the terms, for example if someone infers syllogistically that the courageous person is worthy of honour through the middle 'thinking little of one's own salvation because of common advantage' and says:

The courageous person thinks little of his own salvation because of common advantage;

everyone who thinks little of his own salvation because of common advantage is worthy of honour;

therefore the courageous person is worthy of honour.

The person who wishes to take the terms for this syllogism should not 30seek a name for the middle term, since it is a phrase, and if it is kept, the division into terms and the analysis of the syllogism into the first figure is evident.⁵⁶

Another example is if someone assumes that the science of being qua being is the science of the first moving cause and that the science of the first moving cause is first philosophy, and infers from these things that the science of being qua being is first philosophy. For the person who argues syllogistically in this way has taken all the terms as phrases, not as names. And if a person who wished to analyze the argument did not take the phrases but sought names to replace them. he would not discover the analysis of the syllogism into its appropriate figure, the first.

48a31-9 And sometimes a mistake will occur from this kind of search, [for example, thinking that the syllogism is of things having no middle term.⁵⁷ Let A be two right <angles>. B triangle, C isosceles. Thus A holds of C through B, but it does not hold of B through something else, since the triangle has two right <angles> in and of itself. Consequently there will not be a middle for AB, although it is demonstrable. For it is evident that one should not always take the middle as a particular thing, but sometimes as a phrase, as happens in the case described].

He says that sometimes a mistake results from this kind of search for terms. He says that, when it is not possible to take a middle term as a name and prove a conclusion relating the extremes, many people who analyze syllogisms think that such propositions have no middle term and are indemonstrable when they are demonstrable but the middle term cannot be indicated by a name through which the 25

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syllogism <can be constructed>. He says that these people suppose that there are such things which cannot be demonstrated by those who wish to prove them through an appropriate middle term, although there is a phrase, and they call these things really indemonstrable and say they have no middle for those who wish to prove them syllogistically.⁵⁸ This is what is meant by 'thinking that the syllogism is of things having no middle term'.

- 15 The example he uses is this. He assumes that the isosceles triangle is a triangle⁵⁹ and that every triangle has its three angles equal to two right angles; from these things it follows that the isosceles triangle has its three angles equal to two right angles. He posits isosceles (clearly isosceles triangle) as C, triangle as B, having three angles
- 20 equal to two right angles as A. The proposed conclusion is proved through a middle which is a name.

But in the case of AB if, because it is not possible to take the middle term using a name, someone were to suppose that the statement that the three angles of every triangle are equal to two right angles is a premiss with no middle term and is indemonstrable, and he were to censure those who tried to prove it in this way, he would be mistaken

25 in thinking that what is demonstrable is indemonstrable, since there is a demonstration of this, but the middle term is a phrase and not a name.***⁶⁰

The three angles of a triangle are equal to the consecutive angles;

but if they are equal to the consecutive angles, they are also equal to two right angles (this is so because every straight line standing on a straight line makes the consecutive angles either two right angles or equal to two right angles⁶¹);

30 therefore, the angles of the triangle are equal to two right angles.

So it is clear that this is demonstrable, but the person who does not think that this is demonstrable because the middle term was not found as a name is misled because of his ignorance of the fact that not all of the terms in syllogisms have to be indicated by names.

Although <Aristotle> says that AB, that is that the three angles of a triangle are equal to two right angles, is demonstrable, he does not 1 lay out the example of the middle term (which is a phrase) through which what seems not to have a middle is proved. Here is the proof.

ABC is taken as a triangle, and the <straight line> BC⁶² is extended to E, and it is proved that the external angle C of the triangle is equal to the two angles interior and opposite to it. For if CD is drawn through the point C parallel to BA, since AB and CD are parallel and a straight line AC has fallen on them, the

alternate angles ACD and CAB are equal. Again, since AB, CD

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are parallel and the straight line BE has fallen on them, the external angle at C is equal to the internal and opposite angle B. Therefore the whole angle C, which is external to the triangle, is equal to the angles A and B of the triangle which are opposite to it. <It is evident>63 that if the angle consecutive to the external angle C of the triangle is added in common to both the external angle and the angles opposite to it, the three angles of the triangle are equal to the two consecutive ones. But the consecutive angles are equal to two right angles. Therefore the three angles of the triangle are also equal to two right angles.⁶⁴

Chapter 3665

48a40-b2 One should not take the statement that⁶⁶ the first 15holds of the middle and this of the extreme as saving that they can always be predicated of one another or that the first can be predicated of the middle and the middle of the last in the same way. [And likewise in the case of not holding.]

Here he teaches us that with respect to grammatical cases⁶⁷ one should not schematize the terms in the premisses and in their combinations with one another in the way they are set out. For one should 20always set out the terms in selections in the nominative case, but one should make their combinations in the case in which they could occur, since predications of terms come in all cases. For not every predicate is predicated as of a subject⁶⁸ since <if they were> it would be necessary that all propositions have their terms construed in the nominative case, as in 'A human being is an animal'. 'Grammar is 25knowledge', 'Colour is a quality'. But not just things said of a subject are predicated, but also accidents and things in a subject; and the predication of these is not always in the nominative case; but sometimes it is in the nominative, as when we say 'The body is white' or 'Health is good', sometimes in the genitive, as when we say 'A sibling 30 is the sibling of a sibling', sometimes in the dative, as in 'What is similar is similar to a similar', sometimes in the accusative, as when we say 'The large is called large with respect to the small' or 'Plato praises Socrates'; so since there are predications of things in all the cases, and propositions are predications, we should, he says, set out the terms in propositions and syllogisms in the nominative case when we select them, but we should make their predications and the propositions in their combination with one another in whatever way it is possible.

He says that things in the nominative case are predicated of one another because the subject thing itself is indicated with the nominative case. So when what is predicated is predicated in the nominative case, it is predicated of the subject in the strict sense, since then the

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subject is also taken in the nominative case. But if it is predicated in another case, it is no longer predicated of the subject <in the strict sense> because the case does not signify the subject itself; rather it is predicated of what is signified by the case. But also one should not

10 take it that the second is always predicated of the third in the same case and in the same way as the first has been taken to be predicated of the second. For if the first is predicated of the second in the nominative case it is not necessary to predicate the second of the last extreme in the nominative case.

He says 'they can always be predicated of one another' wishing to indicate predication in the nominative case. And he calls the last term

- 15 the 'extreme' to contrast it with the middle, since the extremes are the terms other than the middle. Having said of the nominative case that the predications may not be the same with respect to case in both premisses, he adds more universally that the middle is not always predicated of the last in the same way and in the same case as the
- 20 first is of the middle. He says that one should do the same thing not only with affirmatives, that is affirmative predications, but also with negatives.

48b2-9 [But one should think that holding] has as many meanings as being and saying that this is true.⁶⁹ [An example is that there is one knowledge of contraries; for let A be being one knowledge, B contraries to one another. A holds of B not in such a way as that contraries are one knowledge, but because it is true to say of them that there is one knowledge of them.]⁷⁰

- This means the following. One should try to combine terms with one another in propositions and say that one thing holds of another in as many ways and with as many cases as we apply being and 'is' to things in combining one with another and in as many ways as it is possible to say that a proposition is true when terms are combined with one another. In what he adds he shows how one should set out
- 30 the terms in propositions in the nominative case and how one should combine them with one another in generating propositions. If we take the proposition which says that there is one knowledge of contraries and set out the terms, we will set out 'there is one knowledge' and 'contraries to one another'. Taking the terms in the proposition we
- 35 will say not that contraries are one knowledge but, reschematizing it, we will get 'There is one knowledge of contraries' [tôn enantiôn esti mia epistêmê] instead of 'Contraries are one knowledge' [ta enantia esti mia epistêmê], since in this way the proposition is true. For as was
- 361,1 said, one should make as many kinds of propositions and predications of terms as there are possible ways of predicating one thing truly of another, both affirmatively and negatively, in accordandance with the schematization of the expression, that is, in as many ways as the

terms under consideration in their combination with one another will correspond with the predication being natural and with truth. This is what is meant by the words 'has as many meanings as being or^{71} saying that this is true'.

And so animal is predicated of human being and human being of 5 literate and animal of literate, all in the same way. For what is literate is a human being and a human being is an animal in the nominative case, and therefore so is what is literate an animal <in the nominative case>. But it is not possible that what is predicated be predicated in this way in all syllogisms. For example, in the proposition which he sets out that there is one knowledge of things 10 contrary to one another, 'There is one knowledge' is the predicate, so he also posits it as A. and the subject is 'of contraries to one another'. which he posits as B. But here A does not hold of B in such a way that it is possible to say that this is this, as when we say that what is literate is a human being. For the proposition does not say that 15contraries are one knowledge (to say that contraries to one another are one knowledge is unintelligible and bad Greek), but that there is one knowledge of contraries, where 'of contraries' is in the genitive case; for when the terms are combined in this way it is true to say that there is one knowledge of contraries. And so in the setting out of the terms 'contraries' and 'one knowledge' were posited, but in the 20proposition it does not continue to be suitable to take 'contraries'; rather one should take 'of contraries'.

48b10-14 It sometimes happens that the first is said of the middle but the middle is not said of the third, [for example, if wisdom is knowledge and wisdom is knowledge⁷² of the good; the conclusion is that knowledge is of the good. The good is not knowledge, but wisdom is knowledge].⁷³

Having shown, using as example 'There is one knowledge of contraries' how predications of terms in propositions are not always in the 25 nominative case, he now shows generally for premisses in syllogisms that the predications of terms are not always the same and in the same case, but that in some the first term is said of the middle – that is, it is predicated in the nominative case –, but the middle term is not said of the third, as is the case in the example which he lays out:

The understanding of the good is wisdom; wisdom is knowledge; therefore the understanding of the good is knowledge.

For the major premiss, which says that wisdom is knowledge has its terms in the nominative case, but the minor premiss which says that

wisdom is of the good does not, since 'of the good' is in the genitive case.

- 35 In setting out the premisses he combines the major predicate [knowledge] in the minor premiss, combining it with the middle term
- 362,1 [wisdom] and saying 'Wisdom is knowledge of the good'. For the premiss is that wisdom is understanding of the good. For knowledge has not been connected with wisdom, nor is it a part of the middle term, but it is the major term and predicate, since wisdom is knowl-
 - 5 edge. As a result the text has been made less clear. He makes clear that knowledge is the predicated term with the conclusion which he infers, since he says that the conclusion is that knowledge is of the good, and this would not be the conclusion if knowledge were connected with wisdom as one whole middle term.
 - It is possible that he has added 'knowledge' in order to show that 10 wisdom is predicated of the good (which is taken in the genitive case), since he shows that wisdom is knowledge of the good.

It is also possible that he has said 'knowledge' instead of 'understanding'. For the understanding of the good is wisdom and instead of this he says that wisdom is knowledge of the good as being equivalent to 'Understanding of the good is wisdom', 'understanding' having been transformed into 'knowledge'.

15 Or perhaps he takes both terms, the middle, wisdom, and the major extreme, knowledge, together in order to show that the minor premiss and the conclusion contain the same case: but just as the predication in the minor premiss was not in the nominative case, so neither is the predication in the conclusion.

48b13-27 The good is not knowledge, [but wisdom is knowledge.⁷⁴

(48b14) And sometimes the middle is said in relation to the third, but the first is not said in relation to the middle, for example if there is knowledge of every quality or contrary, and the good is both a contrary and a quality, the conclusion is that there is knowledge of the good; but the good is not knowledge, nor is quality or contrary (but the good is these two things).

(48b20) And it is possible that the first is not said of the middle and this is not said of the third, and sometimes the first is said of the third and sometimes it is not. For example, if there is a genus of that of which there is knowledge and there is knowledge of the good, the conclusion is that there is a genus of the good; here nothing is predicated of anything.

(48b24) But if a genus is what there is knowledge of and there is knowledge of the good, the conclusion is that the good is a genus; here the first is predicated of the extreme, but they are not said of one another].

Here he shows that the predication in the conclusion is not in the 20 nominative case, but is the same as it was in the minor premiss.

(48b14) Again, he says that other times the minor premiss has a predication of the middle of the last term in the nominative case, but the major does not have a predication in the nominative case because the major term is not predicated of the middle in this way. He also shows this with an example by setting out the following syllogism:

There is knowledge of every contrary; the good is a contrary; the conclusion is that there is knowledge of the good.

In the premisses the middle term [contrary] is predicated in the nominative case of the minor and subject term [good], since this is the way it is with the premiss which says that the good is a contrary. But the major extreme [knowledge] is not predicated of the middle in this way, since in the major premiss which says that there is knowledge 30 of a contrary, contrary is not the subject, as it would be if there were a nominative case; rather 'of a contrary' is, and this is the genitive. Once he takes contrary as the middle, and once quality, but whichever is taken the premisses are similar, since at one time one will have 'The good is a quality and there is knowledge of a quality', and at the other 'The good is a contrary and there is knowledge of a 35 contrary'. But the conclusion is not in the nominative case, since what follows is that there is knowledge of the good (not that knowledge is 363.1the good), just as neither quality nor contrary (these were the middle terms) was said to be knowledge, but there was said to be knowledge of these. So the good was posited to be either a contrary or a quality in the nominative case, which is what he makes clear by saying, 'But the good is these two things' (the things which he has mentioned). For $\mathbf{5}$ the good is a contrary or quality, and in both cases there is predication in the nominative case.

(48b20) He says that there are times when the first is not predicated of the middle and this is not predicated of the third in the nominative case. (For, as I said,⁷⁵ he also calls predication in the nominative case predication without qualification when it is possible to say that this, the subject, is this, the predicate itself.) When the premisses are this way, the first is sometimes predicated of the third in the nominative case and sometimes not. Again he lays out an example of a syllogism in which neither a premiss nor the conclusion has been taken in the nominative case:

There is a genus of that of which there is knowledge; there is knowledge of the good; therefore, there is a genus of the good. 25

In the premisses no term has been taken to be predicated of a term in the nominative case; for in the major it has been taken that there is a genus of that of which there is knowledge and not that what is knowledge is a genus, and in the minor it has been taken that there is knowledge of the good, not that the good is knowledge and again in the conclusion it has been taken that there is a genus of the good, not

20 that the good is a genus; for it is not the same thing to say that the good is a genus or that there is a genus of the good.

(48b24) And as an example of a syllogism in which the predication in neither of the premisses is in the nominative, but it is in the nominative in the conclusion he sets out the following syllogism:

A genus is what there is knowledge of; there is knowledge of the good; the conclusion is: therefore, the good is a genus.

The conclusion is in the nominative case, but neither of the premisses is like this. He again⁷⁶ calls the last term, the subject of the conclusion, the extreme. This term is the good, and its being a genus is predicated of it. In the premisses knowledge is not predicated of good <in the nominative case> nor is genus of knowledge. This is what he indicates by saving 'But they are not said of one another'.

48b27-33 One⁷⁷ should take things the same way in the case of not holding. [For not holding does not always mean that this this does not hold of that this, but sometimes it means there is no this of that (or for that). For example:

There is no change of a change or genesis of a genesis; but there is of pleasure; therefore, pleasure is not a genesis.

Or again:

There is a sign of laughter; there is not a sign of a sign; consequently, laughter is not a sign.]

Having shown for affirmative propositions that predication is not always the same with respect to the cases, he says that similarly in the case of negative premisses and conclusions one should also make

- 35 the case of negative premisses and conclusions one should also make predication of the negative in the suitable and correct case. (In a sense the slope adds this) For a neuron who saws that this does not held of
- 364,1 he also adds this.) For a person who says that this does not hold of that is not always saying that this is not that (as in the case of 'A human being is not a horse'), but sometimes he is saying that there is no this of that, as when someone says that knowledge does not hold

of what is not (the person who says this is not saying that what is not is not knowledge, but that there is not knowledge of what is not); and 5 sometimes he is saying that this does not belong⁷⁸ to that, since the person who denies sickness of a human being is not saving that a human being is not sickness but that being sick (or being changed) and such things do not belong to a human being.

He also shows what he has said, and first with two negative syllogisms put forward in the second figure (in both a universal negative is proved in the second figure). The first example is this:

There is no change of a change (or there is no genesis of a genesis):

there is a genesis of pleasure (or there is a change of pleasure); therefore, pleasure is not a genesis (or a change).

Neither of the premisses has been put together using the nominative case, but the conclusion has, since 'Pleasure is not a genesis' is in the 15nominative case.

This is the second example:

There is a sign of laughter There is not a sign of a sign Consequently, laughter is not a sign.

For in the case of these premisses neither the affirmative nor the negative one has been put together using the nominative case, but the conclusion has.

48b33-49a6 Similarly too in other cases in which⁷⁹ the problem is done away with⁸⁰ because the genus is said in relation to it in a certain way.

[Again:

Opportunity is not time which is needed since there is opportunity for a god, but there is no time which is needed for a god because nothing is required for a god.

(48b37) As terms one should posit opportunity, time which is needed, and god, but take the premiss using the case of the name. For we say without qualification that one should always take the terms using nominatives⁸¹ (for example, 'human being', or 'good' or 'contraries' and not 'of a human being' or 'of good' or 'of contraries'), but that one should take the premisses using the cases of the names. For a proposition might say that something is, for example, equal to him, or, for example, double of him, or, for example, striking or seeing him, or he (for example, a human 10

being is an animal), or if the name occurs in the proposition in some other way.]

Having shown with two syllogisms put forward in the second figure that neither the negative nor the affirmative premiss is taken in the nominative case, but in the genitive, and that the negative conclusion

- is in the nominative case, he says that the situation will be similar in 25other instances in which something negative is inferred (this is what is meant by 'the problem is done away with') according to the kind of relation that the predicate has to the subjects or because of how the subject is combined with the predicate and the middle in the negative premiss in terms of relation and case. This occurs in the middle
- 30 figure, and so the conclusion will also be negative; for in the second figure the middle term is predicated of both extremes. Because the predicate is said in relation to the subject 'in a certain way', negatively, the conclusion will be negative and in whatever case is suitable. The text is unclear because instead of taking 'predicate' or 'middle' he says 'genus', which is not true of all affirmative predica-
- tions and even less true of all negative ones. He uses 'genus' because 35 a genus, too, is always predicated of that of which it is the genus, and
- in the middle figure the middle is predicated of all the extremes and 365,1in this respect has the same character as a genus. For the middle has the role of genus in the second figure insofar as it is predicated of everything.

It is clear from what he adds that he is saying that in the second figure the middle or 'genus' which is predicated does away with the problem in whatever way and in whatever case it is combined nega-

 $\mathbf{5}$ tively with one of the extremes. For after saying this he again sets out an example of a negative syllogism in the third figure, the middle term in this example no longer having the position of a genus because it is not even predicated.

Or perhaps he does not say 'because the genus is said in relation 10 to it in a certain way' only of a negative premiss but of the whole problem. For in the second figure the middle, which is predicated of both the terms of the problem, is the cause of the negative conclusion. But it is not the case that in every syllogism in which something negative is inferred because the middle is combined in some relation and in some case and either affirmatively or negatively with what is

15done away with in the problem, the terms will always be combined with one another in the nominative case but <also> in the ways found in the examples previously given.

It is also possible that something in the original text has been misunderstood and there is a mistake in the text with 'because the genus is said in relation to it in a certain way' being written instead of 'because the *middle* is said in relation to it in a certain way'.

20The example in the third figure is also of this kind: the conclusion

is negative particular and in the nominative case, but neither the affirmative nor the negative premiss is. For:

There is opportunity for a god; there is no time which is needed for a god.

From these it follows that:

Some opportunity is not a time which is needed.

Explaining the meaning of the negative premiss and at the same time showing that it is true he adds 'because nothing is required for a god'. 25since the premiss which says that there is no time which is needed for a god means that there is no time which is required for a god^{82} – some people define 'opportunity' as 'time required'.

(48b37) He selects the terms and says that one should set out the names themselves: names are what are said in the nominative case: 30opportunity, time which is needed, god. He says 'the premiss' instead of 'the premisses' (he might be talking about the negative premiss). For both the premisses in this example are taken in the same way, in the dative case: 'for a god', not 'god'. So one should not take the premiss using the name (that is, using the nominative case) and say 'A god is not a time which is needed', but using the case of the name; 35 for one should take the dative 'for a god' in the premisses. And he advises that one should do this universally, set out the terms 'using nominatives', that is, using the names (he says that cases are not names in On Interpretation⁸³), but to combine the terms in the premiss using suitable cases. He makes clear the differences among the cases by setting down relatives as examples. For some of them are said in relation to something in the dative case, 'equal' and 'like', for $\mathbf{5}$ example (since what is equal is equal to an equal, and what is like is like to a like), some in relation to something in the genitive, 'double', for example, since the double is double of the half, and some in relation to something in the accusative, striking, for example, since what strikes strikes what is struck. (But 'what is struck' [to tuptomenon] is in both the nominative and the accusative case.) He is not advising that one always make combinations of the 10propositions in terms of a case <other than the nominative>, but only when it is suitable to do so. But when the nominative is involved one should use the nominative case, as he indicates by also setting down an example of this, namely 'or he (for example, a human being is an animal)'.

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Chapter 37

49a6-10 One should take this holding of that and this being true of that in as many ways as the ways in which the categories have been divided, [and take these either in some way or without qualification, and furthermore, either simply or in combination. And similarly for not holding.

(49a9) But we should investigate these things and make the distinctions in a better way].

Having said previously⁸⁴ that 'one should think that holding has as many meanings as being and saying that this is true' he now states in how many ways it is true to say that one thing holds of another, namely in as many ways as the ways in which the categories and the

- 20 genera of beings have been divided. (One should not connect the categories immediately with names or the cases of names and include them in propositions as though if something were to be expressed in the nominative case, there is also a category, but if it is expressed in the other cases, there is not; rather one should look to things and the ways they hold, and schematize propostions in ways corresponding to
- 25 the ways in which they can be signified in whatever case.) For either what is predicated of a subject is predicated as substance and one should take it as being in the essence of the subject in propositions, as in 'A human being is an animal'; or it is predicated as indicating a quantity of the subject, as in 'A human being is three cubits tall'; or as indicating a quality, if the subject is said to be white; or as indicating a relation, if it is said to be to the right or a father; or as indicating an activity, if it were conversing or writing; or as indicating a passivity, if it were struck or feeling pain; or as indicating place, if
- 30 it were said to be in the Lyceum; or as indicating time, if it were said that it was yesterday or last year; or as indicating position, when it is said to be seated; or as indicating some condition, if it were said to be wearing shoes or armour. For one thing can hold of another and be true of it in as many ways as there are categories.

And of these things which are predicated and true of something one should take what is predicated as predicated either without qualification, that is, universally, or in some way. For genera and differentiae and *propria* and definitions are predicated without quali-

367,1 fication of the things of which they are the genus or differentia or *proprium* or definition and of which they are true, but an accident is sometimes predicated simply – as with bright in the case of snow – and sometimes in some way, as with bright in the case of eye.

Furthermore, one should make a predication either simply and without combination, that is one should predicate one thing belonging to one category, or one should predicate combined things, that is, composites. 'Socrates is a human being' has a simple predicate [an-

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thrôpos], but the proposition which says that Socrates is a white human being or that Socrates is seated and conversing has a composite one.

(49a9) He says 'But we should investigate these things and make the distinctions in a better way' because some composite predications make a single proposition and some do not. In the case of some things which are predicated truly individually it is also possible to predicate them truly in combination, but in the case of others it is not possible. He recommends that these things (and also the other things of which he has set out the main points) should be investigated⁸⁵ in a better way. And he himself speaks about these things in *On Interpretation*;⁸⁶ and Theophrastus speaks about them at greater length in *On Affirmation*.⁸⁷

Chapter 38⁸⁸

49a11-26 What is duplicated in the premisses should be posited with the first extreme not with the middle. [I mean, for example, that if there is a syllogism with the conclusion that of justice there is knowledge that it is good, one should posit 'that it is good' (or 'good *qua* good') with the first extreme. For let A be 'knowledge that it is good', B be 'good', C 'justice'. Then it is true to predicate A of B, since of the good there is knowledge that it is good. But it is also true to predicate B of C, since justice is essentially good. This is the way the analysis goes. But there will not be an analysis if 'that it is good' is posited at B, since A will be true of B, but B will not be true of C because to predicate 'good that it is good' of justice is false and not intelligible.

(49a22) And similarly if it were shown that the healthful is knowable qua good or a goat-stag is⁸⁹ <knowable> qua not being or that a human being is perishable qua perceptible. For in all cases of things predicated in addition one should posit what is duplicated with the extreme.]

What is duplicated, that is, what is taken twice, is not simply what is added or co-predicated, as is made clear by the name itself, that of duplication. What is duplicated in the premisses is the middle term, since, being duplicated, it becomes co-predicated. He says that in analyses of syllogisms of this kind one should not combine what is taken second and duplicated with the middle term, as if the middle term is said twice, but with the first, that is with the major or predicate. He has made clear what he means with the example. For if through a syllogism there results the conclusion that of justice there is knowledge that it is good, what is duplicated is 'good', which is added to 'knowledge', but it is duplicated because the middle term is also 'good'. For this is the syllogism: 10

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Justice is good; of the good there is knowledge that it is good; therefore, of justice there is knowledge that it is good.

30 For when the terms are posited in this way and 'knowledge that it is good' is the major extreme, 'good' is the middle, and 'justice' is the minor extreme, the conclusion will be the one described, that of justice there is knowledge that it is good; and the analysis of the syllogism will be into the terms mentioned.

But if what is duplicated, namely good, is connected not with the major extreme but with the middle and the middle becomes 'good that

- 35 it is good', the conclusion will no longer be that of justice⁹⁰ there is knowledge that it is good because 'that it is good' (which is what is
- 368,1

1 duplicated) is not added to the predicate ['knowledge']. But the minor premiss won't be intelligible either, since it will be 'Justice is good that it is good'. For either 'that it is good' will mean nothing and be added to 'good' superfluously and the premiss which says that justice

- 5 is good that it is good will be unintelligible, or, if it means that justice is good *because*⁹¹ only it is good and is the same as the good, what is said would be false. (It should be pointed out that he says both 'false' and 'not intelligible'.) And one should not add what is duplicated to the middle term on the grounds that the middle term is taken twice as the same; rather one should add it to the predicate.
- 10 The words 'since justice is essentially good' indicate the way in which the premiss is true, since for <Aristotle> 'essentially' indicates the genus;⁹² so the minor premiss, which says that justice is good is true because justice is essentially good, that is, because it is in the genus of good; and this is so since justice is contained by goodness. And at the same time the added word 'essentially' is an indication
- 15 that 'good' is predicated in the nominative case of justice and not in the way it is when it is the subject of 'knowledge' (for knowledge is not the good, it is of the good). And so to predicate 'good' of justice in the nominative case is sound and true without qualification; for the genus is predicated of the species, and in general what contains is predicated of what it contains, and therefore they are also predicated without qualification.
- However, the proposition which says that justice is the same as the good (this is what is indicated by the person who says that justice is good because <only>⁹³ it is good) is not true. Good is, in fact, more general <than justice> since <Aristotle> takes good to be predicated of justice in its essence and as genus of it; for he uses 'essentially' instead of 'contain'.⁹⁴

(49a22) Similarly again if the conclusion were that the healthful is knowable qua good, what is duplicated is 'good'. The analysis of this

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syllogism too will be into its terms and its premisses, if 'qua good' is added to the major term, the predicate, so that the major extreme is

'knowable qua good', the middle 'good', the last 'the healthful'. For then the premisses will be:

The healthful is good: the good is knowable qua good,

and the conclusion:

The healthful is knowable qua good.

But if in the analysis what is duplicated is not added to the predicate 30 but to the middle, the proposed conclusion that the healthful is knowable qua good will no longer be proved, nor will the premiss which says that the healthful is good qua good be a true or intelligible premiss.

'The goat-stag is⁹⁵ qua not being' is similar to these, but it is unclear because it is stated very concisely, since he only takes what 35 is duplicated to be predicated of the subject and fails to say that it is necessary for it to be added to the predicate. For the conclusion is that a goat-stag is thinkable qua not being. And the syllogism is:

A goat-stag is not [i.e., does not exist]; what is not is thinkable qua not being.

The conclusion from these premisses is:

A goat-stag is thinkable qua not being.

But some people understand the syllogism in this way:

The goat-stag is not: what is not is not *qua* not being; therefore, a goat-stag is not qua not being.

Another example similar to the preceding ones is 'A human being is perishable qua perceptible'; it is clear that the conclusion has 'perceptible' as what is duplicated since it has resulted and been proved⁹⁶ through the middle term 'perceptible'. For a human being is perceptible and what is perceptible is perishable qua perceptible; from these 10 the posited conclusion follows if 'perceptible', which has been duplicated and taken second, has been combined with the predicated extreme, 'perishable', and not with the middle.

He says what is duplicated is predicated in addition, because it is combined with the predicate and is co-predicated and predicated in addition in the conclusions. It is now also possible to say more universally that in all syllogisms in which something is added to the

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predicate and predicated in addition in the conclusion, if the same thing has been taken twice and duplicated, as was true in the cases we have discussed (for what was added was the same as the middle – it was also possible for it to be the same as the predicate, as in the case of the goat-stag, if in the conclusion one were to take 'The

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goat-stag is not *qua* not being'⁹⁷) or if it were to have been added in another way from outside, people who are making analyses, in setting out the terms, should combine something of this kind with the major extreme, the one predicated in the conclusion; for in this way it will be predicated in addition and co-predicated in the conclusion.

However, he seems to mean the same by 'predicated in addition' and 'duplicated' since he adds 'one should posit what is duplicated with the extreme'.

49a27-b1 The positing of the terms is not the same when the conclusion of a syllogism is something without qualification and when it is some this⁹⁸ or in some respect or in some way. [I mean, for example, when it is proved that the good is known and when it is proved that it is known that it is good. If it has been proved that it is known without qualification, one should posit 'being' as middle, but if it has been proved that it is known that it is good, one should posit 'that it is something'. For let A be 'know-ledge that it is correct to predicate A of B, since there is knowledge of something that it is something; and also B of C, since C is something; therefore, it is true to predicate A of C, so that there will be knowledge of the good that it is good (for 'something' indicates its specific substance).

(49a36) But if 'being' is posited as middle, and 'being' without qualification (and not 'being something') is said in connection with the extreme, there would not be a syllogism that there is knowledge of the good that it is good, but that there is knowledge of the good that it is (for example, if A is 'knowledge', B 'being', and C 'good').]

He says that in analyses of syllogisms one should not make the same or a similar positing of and search for terms when something has been taken without qualification as predicate in the conclusion and when it has been taken with the addition of something predicated along with the predicate and combined with it (as he showed⁹⁹ in the case of conclusions having something duplicated co-predicated); he indicates this predication in addition with the words 'some this or in some respect or in some way'). For some co-predications indicate that the

35 subject is something, as in the case of the conclusion that an isosceles triangle has angles equal to two right angles *qua* triangle (what is

370,1 co-predicated is 'qua triangle', and it indicates what isosceles, which

is the subject in the conclusion, is); and some¹⁰⁰ indicate that the subject is in some respect, as in the case of 'The healthful is known aua good' (here the healthful is known in some respect since it is known insofar as it is good). But when the conclusion is that the goat-stag is thinkable qua not being, there is a case of 'in some way'. since it is thinkable as not being. Such are the conclusions in which something is co-predicated and they indicate these kinds of thing. Simple conclusions occur when in them the predicate is predicated of the subject without qualification or addition – for example, if the conclusion is 'Justice is known' or 'The good is known'. In the first case 'being known' is predicated of justice without qualification, in the second it is predicated of the good without qualification.

Such being the difference among syllogisms and conclusions, he 10says that one should not seek terms in the same way in connection with predications without gualification and with predications involving an addition. Rather when the conclusion is simple, for example, when it is that justice or (as he says) the good is known, one should seek and posit the middle term as something more general which holds without qualification of the subject term (that is, justice or the 15good) and which makes it clear that the predicate will be predicated truly. For example 'being'; for the result is the syllogism:

Justice (or the good) is a being: being is known; therefore, justice (or the good) is known.

When the conclusion is not simple but includes something added and co-predicated, one should seek not a middle term which holds without 20qualification and generally of the subject, but one which holds of it more immediately and in the way that, when it is taken, the major extreme will be true of the subject when it is predicated with the addition. It was true to predicate 'known' without gualification of being, but it is not true to predicate 'known qua good' of it, since being is more general and more inclusive than the predicate ['known qua 25good'] is; for the proposition which says that being is known qua good is not true, since neither is all being good nor are only good beings known - at least if the knowledge of opposites is one and the same. So the middle term will not be being without qualification but being something, something more proper to the subject and more immediately connected to it; it will not be common in a uniform way, but in the way in which it will be possible for the major extreme to be predicated of the subject. The major extreme is 'known qua good': we 30 should take something which is more proper to justice (or the good)¹⁰¹ of which 'known qua good' will be predicated; for example we should take the good or the choiceworthy or virtue, since the good or the choiceworthy or virtue is known qua good. But it is also true to

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- 35 predicate the middle term of justice (or the good), since it is true that justice is good (or that the good is choiceworthy). And the predication of 'good' or 'virtue' of justice is more proper and immediate than the predication of 'being', since being is more general. (And again so is the predication of 'choiceworthy' of the good or virtue <more immediate
- 371,1 than the predication of 'being'>.) So what he is saying is that in those conclusions in which the predicate contains something added which indicates 'some this or in some respect or in some way' (<Aristotle> encompasses these things more generally and refers to them as something), ...¹⁰² one should also take the middle term to be either the same <or not the same>¹⁰³ as what is added, since it is possible for a
 - 5 conclusion of this kind to result through a duplicated middle term, as has been shown.

He also makes this clear universally through examples. He says 'Let A be knowledge that it is *ti* on', using *ti* on to indicate what is added, and he says 'Let B be on *ti*'. Just before this *ti* on was added in the case of A, but here he takes on *ti* in the case of B; for on *ti* and *ti* on are the same.

He says 'since C is something' instead of 'since B is predicated of C'; for B is something and not being without qualification.

It is also possible for there to be a syllogism if 'something' itself is taken as middle term and again co-predicated.

If the middle which is taken is the same as what is added and even if it is not the same, it is in any case necessary that it hold more properly and immediately (and not generally) of the subject.

The words 'for "something" indicates its specific substance' indicate in what way the middle term, B, should be taken; he says that it should be taken as something and not as being without qualification, since it should indicate the specific substance of the last term, and not be predicated generally and without qualification of it. For what is co-predicated, if it holds of the subject, will also always hold of such

- 20 a thing. And such a thing results when the middle is taken either to be the same as what is added and predicated in addition or to be immediately connected to the subject. For 'good' indicates the specific substance of justice and similarly so does 'virtue' and 'what is choiceworthy in itself' since they are contained in the account of justice, but they do not belong to justice in common with other things in the way
- 25 'being' does, since 'being' is true of injustice (and of what is bad). (And similarly 'choiceworthy' indicates the specific substance of the good.)

When he says 'indicates its specific substance' he does not mean that the middle term should be a definition, but rather that in such syllogisms it should be closer and more proper to the subject and not general or universal in the way it is when the predicate is unqualified.

30 (49a36) He shows that if the middle is not taken in this way but is taken as common, the proposed conclusion containing a co-predication does not follow. He says that if 'being' and not 'being something'

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(for example, 'good and choiceworthy' or 'virtue') is the middle term, the conclusion would not be that of either the good or justice there is knowledge that it is good, but that there is knowledge that it is, since 'being' and not 'being something', such as 'good', was added to the extreme – that is the predicate.

It makes no difference whether justice or the good is the subject. For he posited in the examples previously mentioned that if 'being' 37 were predicated of justice or of the good, the conclusion would be that justice is known to be (for this is what he indicates with the words 'but that there is knowledge of the good that it is'), but not that it is known that it is good because the premiss which says that being is known qua good is not true. For in general, if it is necessary that 5 something be added, what will be added is 'being', which is the middle term; and the conclusion will be that justice (or the good) is known qua being, but not that it is known qua good.

49b1-2 So it is evident that one should take the terms in this way in particular syllogisms.

He calls syllogisms which don't have a simple predicate but rather 10involve an addition indicating 'some this or in some respect or in some way' particular because these things, that is, the additions to the predicate which indicate them make the predicate more particular. For the propositions 'The good is known', 'The good is known qua being', 'The good is known qua good', or 'Justice is known qua good' are not equally universal. He is saying that in the case of such 15syllogisms which are particular in this sense it is evident that one should take the terms in this way. For one should not take the middle term as general since the conclusion is more particular because of the co-predication, but as immediately connected and indicative of the specific substance <of the subject> or even as the same as what is added, since in this way the major extreme will hold of the middle. Having first said that it is necessary for what is duplicated to be 20added to the predicate, he said after this what middle term one ought to take in cases in which something predicated in addition is added to the predicate, and he explained that the addition is at least something proper to the subject or even immediately connected to it.

Chapter 39

49b3-9 One should also transform things with the same meaning, putting names in place of names, [phrases in place of phrases, and name and phrase, and one should always take a name in place of a phrase, since then the setting out of terms is easier. For example, if there is no difference between saying that what is judged is not the genus of what is believed and saying

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that what is believed is not essentially what is judged (what is meant by these things is the same), one should posit 'what is judged' [*hupolêpton*] and 'what is believed' [*doxaston*] as terms in place of the phrase mentioned].

He says that in order to make analysis easier one should, in the analysis of syllogisms, transform what is posited in the terms into things with the same meaning. For names have the same meaning as names, phrases as phrases, and names as phrases. Syllogisms do not

- 30 exist in the words they contain but in what the words mean, and names mean the same thing as phrases; therefore, when the terms have been taken using phrases and one is doing an analysis, one should first and foremost transform the terms into names with the same meaning as the phrases and meaning the same thing; for when the terms are names and not phrases, analyzing a syllogism into
- 373,1 premisses and discovering the figure in which it has been put forward becomes easier. For because of their length phrases produce unclarity in the division of propositions into terms and in their combinations. For example, if 'terrestial biped animal' were posited of Socrates and

5 'perceptive living substance' of 'terrestial biped animal', we can transform the first phrase into 'human being' [anthrôpos], the second into 'animal'. Again if 'good by its own nature' were posited, we can transform it into 'good per se'. And we can take a name in place of a name, for example, 'pleasure' in place of 'delight', since 'pleasure' is more customary.

10 He makes clear with an example in what way one should transform terms and how. If the phrase 'What is believed is not essentially what is judged' means the same thing as 'What is judged is not the genus of what is believed' (since 'essentially' indicates a genus), one should make the transformation into this, and instead of positing 'what is believed' as a term and positing the phrase which says that what is judged is not the genus of what is believed, one should take 'what is

- 15 believed' as a term and and also 'essentially¹⁰⁴ what is judged'. For then the syllogism will be the same, since, as we said, a syllogism comes about through what is meant by the words, not through the words. And certainly when the words mean nothing or are ambiguous, no syllogism results from them. Consequently when the same things are signified in a primary way by different words and the words are taken in the same way, the syllogism will be the same.¹⁰⁵
- 20

The expression 'Animal is essentially a substance' means the same thing as the expression 'Animal is in the genus of substance'. Here there has been a transformation of a phrase into a phrase, so that the transformation of them into one another will not make the syllogisms different in any respect.

What he is saying now is not inconsistent with what he seemed to say a little while ago,¹⁰⁶ namely 'One should not seek to set out the

terms with a name'. For there he said 'One should not *always* seek ...' 25because in some cases it is not possible to find names meaning the same thing as phrases, and here he recommends that one set out the terms with a name in cases in which it is possible to find names which are equivalent to the phrases.

So this is what Aristotle thinks about transformations of expressions. But more recent thinkers, who stick closely to the way things are expressed and not to what the expressions mean, say that the syllogisms are not the same when there is a transformation of an 30expression into an equivalent; for although 'If A, then B' means the same thing as 'B follows from A', they say that a formulation such as:

If A, then B; but A: therefore B

is a syllogistic argument, but that

B follows from A: but A: therefore B

is conclusive but not syllogistic.

Chapter 40

49b10-13 Since 'Pleasure is good [agathon]' and 'Pleasure is the good [to agathon]' are not the same, [one should not posit the terms in the same way, but if the conclusion of the syllogism is that pleasure is the good one should posit 'the good', and if it is that pleasure is good, one should posit 'good'. So too in other cases].

It is clear from what is said here that in cases in which, even if the transformation of the expression is slight, the expression does not have the same meaning, he is precise about the meaning because he thinks that one should attend to and posit as one's focus what an 5expression means and not the expression <itself>. What he is maintaining is this: the statement that pleasure is good and the statement that pleasure is the good do not mean the same thing (the person who says that pleasure is good is simply predicating goodness of pleasure, but the person who says that it is the good predicates the excess among goods of it),¹⁰⁷ and so (he says) in analyses of syllogisms one 10 should pay attention, and if pleasure is assumed to be the good one should take 'pleasure' and 'the good' as terms, but if pleasure is simply assumed to be good, one should take 'pleasure' and 'good'.

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In the same way it is not the same thing to assume that man is an animal and to assume that it is animal, since it is true to say that man is an animal, but not true to say that man is animal. For taking the two to be the same gives rise to the fallacy in the argument <with the

premisses>:

15

Man is an animal; animal is a genus.

It does not <follow> that man is a genus because it was not assumed originally that man is animal but simply that man is an animal; but 'animal' without the definite article <does not refer to> a genus, but 'animal' with the article does¹⁰⁸ since it is not the case that every animal is a genus. So the argument contains this mistake because the major premiss ['Animal is a genus'] is not assumed universally. Similarly, too, to say that snow is white is true, but to say that snow

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is whiteness is not true.

So he is saying that in the case of these kinds of addition of the definite article one should be precise and in analyses of syllogisms attend to the meaning and take terms in the way they are posited. One should also proceed in this way in the case of the argument introduced to overthrow the argument involving three <conditionals>:

If there is nothing, it isn't night [ei mêden estin, oude nux estin]; 25if it isn't night, it is day; therefore, if there is nothing, it is day.

For since from 'There is nothing' it does not follow simply that it isn't night but that there isn't even night, one should take 'There isn't night' as antecedent term in the second implication; from this, taken in this way, it will not follow that it is day. Furthermore, taken in and

- 30 of itself 'If it isn't night, it is day' is true, but it is not true in the context of the proposed conditional 'If there is nothing, it isn't night' because the middle, which is the consequent in the first conditional and the antecedent in the second, is not taken in the same way in both; for in the first conditional 'It isn't night' is taken as equivalent to 'In addition to other things there will not be night either', and from this it does not follow that it is day.¹⁰⁹
- 35

Chapter 41¹¹⁰

49b14-20 It is not the same thing for it to be the case that or to 375.1say that A holds of everything of which B holds [and to say that A holds of everything of all of which B holds, since nothing prevents B from holding of C but not of all C. For example, let B be beautiful, C white. If beautiful holds of something white, it is

true to say that beautiful holds of white, but perhaps it does not hold of everything white].

Since what is meant also varies with the manner of predication, he says that in analyses of syllogisms one should also pay attention to how the predication has been made. And he shows that the meaning 5 varies with the manner of predication by saying that 'A holds of everything of which B holds' and 'A holds of everything of all of which B holds' are not the same either in reality and meaning or in the expression signifying them. (This is what he says.)

And he shows that these statements do not have the same meaning 10as each other. For if we say that A holds of everything of which B holds, not adding the words 'all of', we have taken B to be predicated indeterminately of what it is predicated of (for example, of C, if it were predicated of it). But what is indeterminate is also compatible with the particular. So it is possible that B is posited to hold of some C. For if B holds of some C and it is true that A holds of it, then the 15indeterminate statement turns out to be equivalent to 'A holds of everything of some of which B holds'. When this is the case and is posited, it turns out that A holds of some B. For when A is assumed to hold of that of some of which B holds (either of all of that of some of which B holds or without qualification), it is taken as equivalent to 'A of some B' (just as when it is assumed that A holds of everything of all of which B holds, A has been assumed of all B-at least if '[X] of 20all [Y]' is the same as 'it is not possible to take anything of [Y] of which [X] will not be said'.¹¹¹ For 'A of everything of all of which B' is the same as 'A of all B'; and this is also the major premiss in the combination set out, which is in the first figure).¹¹²

So when the premiss is taken in this way,¹¹³ the result is a 25 particular major premiss in the first figure. A combination of this kind is not syllogistic whether B holds of all or of some C (that will be the minor premiss).

What is being said will be clearer if terms are brought in. Let having wings be posited for B, white for A. If it is said that white holds of everything of which having wings holds, then if what has wings is taken to be swan, what is said will be true, since a swan has wings 30 and is white. And if someone were to say, 'But having wings holds of crow, but white doesn't', one should reply that what was said was not 'of all of which B holds', but simply 'of which B holds', and <the whole statement> would be equivalent to 'A of some B'. And when it is taken in this way the combination is not syllogistic, since A will hold of some of the things under B and will not hold of some of them. For in the case of the combination set out the result is 'White of something 376.1having wings', 'Having wings of every swan and of every crow', but 'White of every swan and of no crow'. Again let A be rational, B living, and let it be assumed that rational holds of everything of which living

holds. That is true if human being is taken to be what is under living, but not if horse is. For the result is 'Rational holds of something living and living of every human being and of every horse'. It is clear that these combinations are themselves not syllogistic, so that one should not analyze them as syllogistic.

He shows that in this way of taking things the premiss BC is indeterminate by setting down terms, beautiful for B, white for C. If beautiful holds of something white, it will be true to say indeterminately that beautiful holds of white and to say indeterminately without 'some' or 'all' that B holds of everything of which C holds. But it is not true that beautiful holds of everything white.

He adds 'perhaps' when he says 'But perhaps it does not hold of everything white' not because of the terms set out but because what is indeterminate is true when the universal is and also when the particular is.¹¹⁴

49b20-2 So if A holds of B, but not of everything of which B <is said>, then, whether B holds of all C or only holds of some,¹¹⁵ it is not necessary that A hold of all C and not even necessary that it hold of C.¹¹⁶

What he is saying is that if A holds of some B, and not of all (it would hold of all if A were predicated of everything of all of which B is, since the words 'but not of everything of which B <is said>' are equivalent to 'but is not said of all B' and to 'but not of everything of all of which B <is said>', then (he says) not only will A not hold of everything of which B holds, but it will be possible that A not hold at all of that of which B holds, if B is taken to be predicated of all of something such as C (as white is predicated of something lifeless and is predicated of all snow) or if it is taken to be predicated of some (as having wings is predicated of something black and of every crow, and white holds of neither of them although it holds of something having wings). For the argument will not be about whether A does not or does hold of all C in such a combination, since it can fail to hold of C at all. For when the major premiss in the first figure is particular it makes the combination not syllogistic, in whatever way the minor is taken.

The words which are in the middle of the passage, 'whether B holds of all C or only holds of some', are the same as 'whether the assumed minor premiss is particular or universal'.¹¹⁷

The words 'of <that of> which B <is said>' are not equivalent to 'of anything of which B <is said>', since the expression 'of anything' is determinate and indicates universality; it is equivalent to 'of all of which B <is said>'; but 'of <that of> which B <is said>' is indeterminate and the indeterminate is compatible with the particular.¹¹⁸

49b22-5 But if it holds of everything of any¹¹⁹ of which B is truly said, fit will follow that A is said of everything of all of which B is said].

One should supply 'A' <for the first 'it'>. As we said, ¹²⁰ the words 'of anything of which B' are equivalent to 'of everything of which B'. 'Truly' is added because it is possible for something to be predicated of everything, but falsely. The sequence of thought, then, is this. If A is said of everything of all of which B is said, 'it will follow that A is said of everything of all of which B is said'.¹²¹ <Aristotle> makes clear 10 that 'of anything of which B' is equivalent to 'of all of which B' by transforming the first into the second. When the premisses are taken this way the result is that A of all B. For let A be animal, B laughing or rational, C human being. Animal <is said> of everything of any of which laughing or rational <is said>. But laughing <is said> in this 15 way of human being, and similarly so is rational (if this is what is taken); for they <are said> of every human being. Therefore, so is animal. For this is equivalent to:

Animal of everything which laughs; laughing of every human being: therefore, animal of every human being.

And if it is assumed that laughing or rational <is said> of some human being, animal will no less hold syllogistically of some human 20being.

49b25-7 However, if A is said of everything of which B is said. [then, if B holds of C, but not of all, nothing prevents its being the case that A does not hold of C at all].¹²²

He again takes the minor premiss as indeterminate. For 'of which' is indeterminate, being different from 'of anything'¹²³ And this 25<major premiss> is the same as the one stated originally, 'A holds of everything of which B holds'.¹²⁴ The premiss should be taken indeterminately in this way and be true because the particular proposition 'A of everything of some of which B' is true since B holds of some, but not all, C (this is indicated by the words '<if> B holds of C, but not of all, nothing prevents its being the case that A does not hold of C at all'; for there will not be a syllogism when the indeterminate premiss 30 is taken to coincide with the particular). For 'A of everything of which B' does not yield a syllogism when it is equivalent to 'A of everything of some of which B' (and this is equivalent to 'A of <some of>125 that 378,1of which B'). For then the result is that A of some B, and this occurs when the indeterminate statement 'A of everything of which B' is equivalent to 'A of everything of some of which B', as has already been

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said. <Aristotle> indicates this with the words 'if B holds of C, but not 5 of all': for if the premiss is of this sort, the major premiss AB is taken as particular, as has already been said; and the things already described go forward, since when the premiss BC is taken in this way, it is not true that A holds of C because, as we said, when it is taken in this way the major ['A of everything of which B'] becomes particular.

49b27-30 Using three terms makes it clear that 'A is said of that of all of which B is said' is the same as this: 'A is said of all of 10 whatever B is said'.

What he says is this. In the case of premisses of this sort which contain three terms potentially, such as the ones he is now setting out and, in general, those which Theophrastus calls prosleptic (these

15have three terms in a way, since in the proposition 'A of everything of all of which B' the third term of which B is predicated is already in a way encompassed in the two determinate terms A and B, except that it is not determinate and evident like them), ...¹²⁶ premisses which are thought to differ from categorical premisses only in their formu-

- lation, as Theophrastus showed in On Affirmation, <Aristotle> says 20that a premiss taken as saying that A of everything of all of which B^{127} means 'A is said of all of whatever B is said'. For this has been shown.¹²⁸ So if 'of all' is added to B,¹²⁹ A will also <be said> of all B. and in this way A will also be predicated of that of which B is
- predicated. But if 'of all' is not added to the prosleptic premiss, but it 25is taken indeterminately, A will not be predicated of all B, and in this way, whatever one assumes in addition, the combination will not be syllogistic.

49b30-32 And if B of all, so is A, [but if B is not of all, it is not necessary that A be of all].

- 30 In 'A is said of that of all of which B is said' he takes the major premiss AB as universal (since 'A of all B' is equivalent to 'A of that of all of
- which B'): since the combination is syllogistic both when the minor premiss is particular affirmative and when it is universal affirmative, but when it is universal the conclusion is also universal, and when it is particular, so is the conclusion, he adds what indicates this, namely 'And if B of all, so is A, but if B is not of all ...'. So the sequence of
 - $\mathbf{5}$ thought is this:

A of all of whatever B <is said>;

and then:

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B of some C: and therefore A of some C.

or:

B of all C: so that A of all C as well.

The words 'It is not necessary that A be of all' are equivalent to 'Nor will A be predicated syllogistically of everything under B, if B holds <only> of some of that'.

However, Theophrastus in On Interpretation takes 'A of that of 10 which B' as equivalent to 'A of everything of all of which B'.

49b33-50a1 One should not think that anything absurd results from the setting out; [for we do not make any further use of its being a particular thing; rather we are like the geometer who says that this line is a foot long and straight and this one is without breadth¹³⁰ when they are not, but he makes no use of what he says in the sense of deriving something syllogistically from them. In general the person who proves does not prove anything from things of which one thing is not related to a second as whole to part and a third to the second as part to whole, so that <without these things> there is no syllogism either].

He calls the diagram of the terms a setting out. Since in the presentation of syllogisms he has used letters instead of terms and shown, 15 using them, the combinations which are syllogistic and those which are not, he now says about this that one should not suppose that something absurd and false results from the terms being taken and set out in this way, as if the taking of letters were the reason for thinking that something is shown to imply or not to imply something - in the way in which frequently some things which are not syllogistic are shown to imply something on the basis of material content.

For in the taking of terms with letters we do not make any further use of the specific relationship of the terms to one another, as if what is inferred, for example, that this is the genus or proprium or definition of that, is proved from this, as though we were setting down 25material content. (Proof in the case of things syllogistic is based on the fact that the terms are related to one another in such a way that the one is a whole, the other a part.) For the letters themselves have only been taken as common signs for the terms, and nothing about them contributes to a combination being proved to yield or not to yield a conclusion.

For a geometer for the sake of pedagogical clarity draws a diagram

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and says 'Let this be a foot long' or 'Let this one be straight'. 30 but does not assume that the <drawn> foot-long <line> is a foot long or that the <drawn> straight <line> is straight, nor does he make further use of what has been drawn to prove what he proposes to prove; rather he does not use these signs as making any contribution to what is proved, since it would not be any less possible to prove what he proposes to prove even if he did not draw these things and made no use of them; on the contrary he includes these things so that the

- 35 intellect¹³¹ follows well what is said, that is, so that the mind, being in a way disposed to depend on these things, follows more easily. In
- the same way we have also set out letters, but for us nothing from 380,1them contributes to what is proved. For the inference does not depend on one of the letters being A and another being B or C, since the same thing results even if we use other letters instead of these. This does not occur in the case of:

Every human being is an animal; everything which laughs is an animal.

From these it seems to follow that every human being laughs, but this is because of the sort of relation which the terms taken have to one another, not because of the figure; for if other terms are taken in a combination of this kind nothing follows, as in the case of:

Every human being is an animal; every horse is an animal.

- But it is not this way in the case of the setting out of letters, as he himself also shows by using different letters at different times in 10 connection with each figure. For with letters it is not the case that one is taken as a whole and the other as a part of it in the way that living and animal are related since here living, being more inclusive and universal, is taken as a whole, and animal is taken as a part of it.¹³² And again suppose something else is taken in the relation of part to
- whole to this animal which has been taken as a part in the first 15premiss, for example human being, since it is a part of animal which itself is a part of living; then the proofs will be based on things related in this way, that is, on one of the terms in the premisses being predicated and one being subject. For it is not possible for some conclusion to be proved syllogistically on the basis of any things which do not have an appropriate relation to one another. However, letters
- do not have any such relation to one another, so that nothing either 20follows or doesn't follow because of them. Therefore, proofs are also done using such things [concrete terms], so that it is no longer possible to say if our proofs resulted from the material content in which we make use of syllogisms.¹³³ For frequently because of the

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difference of material content something appears to yield a conclusion when it does not.

49b39-50a1 So that <without these things> there is no syllogism either.¹³⁴

He indicates that proofs done with letters of this kind are descriptions 25 of syllogistic modes but not thereby syllogisms; for syllogisms involve material content in terms of which something is proved.

49b37-50a1 [In general the person who proves does not prove anything from things of which] one thing is not related to a second as whole to part and a third to the second as part to whole, [so that without these things there is no syllogism either].

The sequence and combination of premisses which he has set out is 30 in the first figure, but in a way the arrangement is also the same in the other figures because they were proved syllogistic through the first figure. He refers to the predicated term with 'as whole' and the subject term with 'as part'; he adds the word 'as' because it is not the case that either the predicate is always more inclusive nor that everything which is more inclusive than something exceeds it in the sense of its being a part; for it is not the case that if white is more inclusive than human being, that thereby human being is a part of white.¹³⁵

50a1-4 We use the setting out^{136} in the way that we use perception in telling the learner,¹³⁷ [not as if it is impossible for anything to be demonstrated without these things in the way that <it is impossible for there to be> a syllogism <without> premisses].

Having said that nothing is proved from the terms set out (for the 5 letters contribute nothing by themselves to the things which are proved), he now says why we use them at all. It is so that what is said is easier to follow on the diagram,¹³⁸ just as in geometrical proofs, even though we don't make demonstrations about perceptible things, we take certain perceptible things in the diagrams so that what is 10 proved becomes easier to follow for the learner; since they also prove these things no less well without a diagram, proceeding with only words.

So the words 'in the way that we use perception in telling the learner' would be equivalent to 'just as we use certain perceptible things for the learning and teaching of some things and say what we prove with respect to them' (that is, geometricals). For the words 'in

the way that we use perception in telling the learner' mean that in teaching about something which is not perceptible we frequently give proofs for learners in terms of perceptible exemplars, using these to make them focus on the mental grasp of things which are not perceptible. For then we do not use the parallelisms of perceptible things as

- 20 if the proof came about concerning perceptible things and through them. Neither do we use the setting out of letters as if it is impossible for there to be a syllogism without letters (as is the case with the appropriate premisses for a syllogism since it is not possible for the syllogism relating to premisses to come about without those premisses). Rather the letters are no part of things that are proved. And the words might be equivalent to 'in the way that those who tell the
- 25 learner <things beyond> perception speak in terms of perceptible things'.¹³⁹

Chapter 42

50a5-8 Let us not overlook that in the same syllogism not all conclusions are through one figure, [but one is through one figure, another through another. So it is clear that one should also do analyses in this way].

Since he is discussing the analysis of syllogisms and there are also composite syllogisms in which there are several conclusions and

- 30 several syllogisms, he says that we should not overlook that in syllogisms composed of several syllogisms and conclusions, it is not necessary that all the conclusions in all the syllogisms have come about in the same figure, but it is possible that one conclusion in a composite syllogism has come about in the first figure and another in the second or third. For in a composite syllogism such as 'A of all B;
- 382,1 B of all C, C of all D' (and even if something more is added in the same sequence), all the conclusions will be through one figure, since AC is implied by AB, BC through the first figure, and again AC together with CD imply AD in the same figure.
 - 5 But if A of no B and of all C, and B of all D, so that C of no D, this syllogism would also be composite and all the conclusions would be in the same figure, but in the second, not the first, since BC, the negative 'B of no C', follows from AB, AC in the second figure, and again the
 - 10 proposed conclusion 'C of no D' follows from the negative BC together with the affirmative BD in the same figure.

And similarly in the case of a composite syllogism such as:

A and B of all C; but also D of all B; therefore D of some A.

For again this syllogism is also composite and it has all its conclusions in the third figure. For 'A of some B' follows from the universal 15 affirmatives AC, BC in the third figure, and this conclusion together with 'D of all B' implies 'D of some A' in the same figure.

But if the syllogism were of this kind:

A of all B; B of all C; A of no D; therefore, D of no C,

the syllogism is also composite, but all the conclusions are not in the 20 same figure, but one will be in the first figure and one in the second, since AC is implied by AB, BC in the first figure, and this together with 'A of no D' implies 'D of no C' in the second figure.

But if the syllogism went this way:

A of all B; B of all C; D of all (or some) C; Therefore A of some D,

the syllogism is composite, but one conclusion will follow in the first figure, the other in the third, since 'A of all C' is implied by AB, BC in the first figure, and AC together with 'D of all (or some) C' implies 'A of some D' in the third figure.

Again, if there were a syllogism of this sort:

A of no B and of all C; But D also of all C; Therefore, not B of all D,

one conclusion will be in the second figure, the other in the third, since 'B of no C' is implied by AB, AC in the second figure, and this together with 'D of all C' implies the proposed conclusion 'not B of all D'.

There will also be a mixture of the three figures in a syllogism of 35 this kind:

A of all B; B of all C; A of no D; E of all C; therefore, not D of all E,

since 'A of all C' is implied by AB, BC in the first figure, and this

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together with 'A of no D' implies 'D of no C' in the second figure, and
this together with 'E of all C' implies the proposed conclusion 'not D of all E' in the third figure; here the first figure is the antecedent, since the argument of which the conclusion is the assumption for another argument is the antecedent, and the third figure is the consequent of everything, and the second figure is the middle.¹⁴⁰

5 Again the second figure will be the antecedent of everything in a syllogism of this kind:

A of no B and of all C; but also C of all D; and E of all D; therefore, not B of all E,

since 'B of no C' is implied by AB, AC in the second figure, and this
together with 'C of all D' implies 'B of no D' in the first figure, and this
together with 'E of all D' implies the proposed conclusion 'not B of all
E' in the third figure; here the third figure is the consequent of
everything, the second is the antecedent, and the first is intermediate.

The third figure will be the antecedent of the second but not of the first, if the premiss is added from below¹⁴¹ because the conclusions in the third figure are particular, and if a premiss is added to the

15 the third figure are particular, and if a premiss is added to the conclusion from below the combination becomes non-syllogistic in the first figure, having a particular major premiss. The third figure will be the antecedent of the second in a <syllogism> of this kind:

> A and B of all C; but also A of no D; therefore, not D of all B,

20 since 'A of some B' is implied by AC, BC in the third figure, and this together with 'A of no D' implies the proposed conclusion 'not D of all B' in the second figure.

However, if a premiss in the first figure is added to a conclusion of the third figure not from below but from above, the third figure will also be the antecedent of the first figure, as in a syllogism of this kind:

A and B of all C; but also D of all A; but also D of no E; therefore, not E of all B.

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For 'A of some B' is implied by AC, BC in the third figure, and this together with 'D of all A' implies 'D of some B' in the first figure, and this together with 'D of no E' implies the proposed conclusion 'Not E

of all B' in the second figure; here the third figure is the antecedent of everything, the second is the consequent of everything, and the 30 first figure lies in the middle.

One should pay attention to the fact that, just as it is impossible in negative simple syllogisms for more than one negative premiss to be assumed, so too in composite ones, since the expansion of composite syllogisms is by means of affirmative premisses. But a composite syllogism cannot have more than one particular premiss either; rather there is also <at most> one particular in composite particular syllogisms just as in simple ones. However just as there can be more than one affirmative universal in simple syllogisms, so too in composite ones.

50a8-10 Since every problem is not in every figure but there are determinate $ones^{142}$ in each figure, [it is evident from the conclusion in which figure one should make the inquiry].

It is clear that some problems are proved in every figure (such are particular negative ones), some in two figures (such is the particular affirmative, since it is proved in the first and the third, and the $\mathbf{5}$ universal negative, since it is proved in the first and the second), and some in only one figure (such is the universal affirmative, since it is proved in only the first). He says that, since not every conclusion comes about in the same figure, as has been shown, and one should reduce each problem to the appropriate figure, in analyzing a pro-10 posed syllogism, whatever it is, one should not inquire about the analysis of a conclusion taken in every figure, unless it is of the kind to be proved in every one; rather one should pursue the analysis knowing on the basis of the conclusion what figure it is only or mostly proved in. For the universal affirmative is only proved in the first figure, the universal negative mostly in the second, even if not only in the second (since it is proved in two ways in the second), and the particular negative and affirmative mostly in the third, since each of 15them is proved in three ways in the third. Again, he says that one should seek to do the analysis of a proposed syllogism only or mostly in the figure in which the proposed conclusion is mostly or only proved. So he is recommending that one take the figure into which the analysis of the syllogism set out should be made on the basis of 20conclusions. But it is clear that the appropriate figure can be found more easily if the middle <term> is taken, as he has said earlier,¹⁴³ since the discovery of the figure has its foundation in the character of the relation of the middle to the extremes: for the conclusion can also be common to several figures. But this has already been said in the preceding.

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Chapter 43

25 **50a11-15** In arguments against¹⁴⁴ a definition which treat one item in the definition, [one should posit a term for the item which has been treated, and not the entire account, since in this way less confusion will result because of the length; for example, if one proves that water is potable liquid, one should posit water and potable as terms].

It is clear that < one > 145 of the four problems which he sets out in the *Topics* is based on definition. And he is now advising that in analyses of syllogisms one should do what he is saying in the case of syllogisms

- 30 which refute some definition which has been given, if they do away with some one term in the definition and treat one item in it and in this way do away with the definition. For a definition is done away with and shown to be unsound if even one item in it is done away with; for example, when a person has defined a human being as a rational, mortal animal having wings, if someone were to show through a syllogism that it is not reasonable for 'having wings' to be added (since
- 35 it is not an appropriate differentia of human being), he would have refuted the whole definition given, since the entire definition turns out to be false when any item in it has been done away with. But here
- 385,1 one has not also produced a syllogism against the whole account, as is the case with the person who refutes the account of god given if someone were to define god as a fiery body.¹⁴⁶ For if one were to give a refutation by taking 'Perishability of no god and of every fiery body', he would be making an argument against the whole definition, not
 - 5 against some item in it. So when an argument which refutes a definition is against the whole of it, it is clear that in the setting out of terms one should posit the whole definition as a term in the syllogism, as in the case we have just mentioned. For we will posit as a term the whole, fiery body, which was the definition given of god,
 - 10 since we deny perishability of all of god, not of some item in him. But if the argument is not against the whole definition but against some item in it, <Aristotle> recommends that only the term against which the argument is directed and not the entire definition be posited in the syllogism which is being analyzed, since then, when the length of the definition is eliminated, the argument will be less unclear. And at the same time the item in the definition which has not been taken
 - 15 properly will be recognized; for example, if someone were to give potable liquid as the definition of water and someone were to object by showing that the definition is false because not all water is potable and saying that the sea is water but it isn't potable, then in the analysis of this syllogism one should take as terms sea as middle and water and potable as extremes and not the whole definition potable

liquid; for the argument has not been put forward against the whole 20 statement that water is potable liquid, but only against potable.

Furthermore, an argument of this kind which does away with one item in the definition is also put forward in the third figure¹⁴⁷ and produces a refutation of part of the definition, whereas an argument doing away with the entire definition is in the second, as has been shown in the case of god being defined as a fiery body; it is in the second figure not because it is not also possible to prove both things 25in the first figure, but doing this would involve the conversion of propositions and would not be equally obvious.¹⁴⁸ For a definition which is not sound is refuted either when it is not possible for the same thing to hold of the definiens and the definiendum – and this is appropriate to the second figure -, or when it is not possible for the definiens and the definiendum to hold of the same thing, as the definiendum water held of sea, but did not hold of an item in the definiens, potable – and this is in the third figure. In this way, then, 30 if the definiens given either holds of none of the definiendum or does not hold of all of it, there will be a refutation.

There is also refutation of a definition through a proof that the definition given does not hold only <of the definiendum>, for example, if someone were to define intelligence as a condition which produces good things or self-control as a condition which masters pleasure; for the art of strategy or of medicine is a condition which produces good things and temperance is a condition which masters pleasure. And this kind of refutation of definitions is also in the third figure, since the definition given of self-control also holds of another¹⁴⁹ term such as temperance, but self-control, which was the definition of self-control, since not every condition which masters pleasure is self-control.

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Chapter 44¹⁵⁰

50a16-28 Furthermore, one should not try to reduce syllogisms from a hypothesis, since it is not possible to reduce them from the premisses. [For they have not been proved through syllogisms,¹⁵¹ but all are accepted because of an agreement. For example, if it were hypothesized that if there is not one capacity for contraries, there is not one knowledge of them either, and then it were argued that not every capacity is for contraries,¹⁵² for example, for being healthy and for being sick (for then the same thing will be healthy and sick at the same time). So it has been proved that there is not one capacity for all contraries, but it has not been proved that there is not one knowledge of them. Nevertheless, it is necessary to agree to it, but not on the basis of a syllogism but from a hypothesis. Therefore, this <argument> cannot be reduced, but <th column the sum of a syllogism but from a hypothesis.

one capacity can be, since this was perhaps also a syllogism, but that was a hypothesis.]

5 He says that one should not try to analyze arguments which prove something from a hypothesis and reduce them to the figures, since it is not possible to analyze them from the premisses or assumptions and reduce them to one of the figures. He adds the reason for this when he says, 'For they have not been proved through syllogisms, but all are accepted because of an agreement'. For in all <arguments>

- 10 from a hypothesis, there is not a syllogism of what is posited <as final conclusion> and proved, but this is taken because of some hypothesis and agreement; but the syllogism is relative to something else (a transformation, as he said¹⁵³) and proves it. He calls categorical syllogisms syllogisms without qualification and syllogisms in the
- 15 strict sense. And it is clear that the syllogisms which he calls from a hypothesis are such as he has described. For the person who proves from an agreement something which is from a hypothesis hypothesizes and posits what he wishes to prove and does not give a syllogism for it, but does give a syllogism for something else, which is other than what he hypothesizes; for example, the person who wishes to prove that virtue is knowledge and then posits that if he shows that virtue is something teachable, it will have been proved that it is knowl-

20 edge,¹⁵⁴ and next proves with a syllogism that virtue is teachable (through the syllogism 'Every rational condition is teachable, and virtue is a rational condition'); for in this way the syllogism does not come about relative to the proposed conclusion but relative to a 'transformation', as he has said previously.¹⁵⁵

<Arguments> which prove something through reductio ad impossibile are also from a hypothesis, and also in their case the syllogism is not of what is proved, but the syllogism is relative to what is hypothesized, which is something false; when what is proved impossible through the syllogism is done away with the proposed conclusion is posited without there being any syllogism directed primarily to it.

This is also true in the case of hypothetical <arguments> through an implication and similarly of those through a disjunctive. So what is posited is not accepted because of syllogisms, but because of the hypothesis, and the syllogism is of something else, since it is of the additional assumption or transformation.

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He makes what he is saying known clearly by means of his example. For suppose we hypothesize and agree that:

If there is not one capacity for all contraries there is not one knowledge of all contraries,

and then give a syllogism and prove that there is not one capacity for all contraries. For this we take:

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Being healthy and being sick are contraries; there is not one capacity for being healthy and being sick; therefore, there is not one capacity for all contraries.	35
And that there is not one capacity for being healthy and being sick would be proved in this way through a syllogism:	387,1
Things for which there is the same capacity produce the same thing (for what has the capacity for heating heats and what has	

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the capacity for cooling cools): being healthy and being sick do not produce the same thing; therefore, the capacity for being healthy and the capacity for being sick are not the same.

However, because he says 'For then the same thing will be healthy 5 and sick at the same time' it seems that he has not proved that the capacity for being healthy and the capacity for being sick are not the same in the way just described, but that he has proved it through a hypothesis of the following kind:

If the capacity for being healthy and the capacity for being sick are the same, the same thing will be healthy and sick at the same time: but this is not possible; therefore, the capacity for them is not the same.

But if this were proved in this way, it too would not have been proved 10through a syllogism, but from a hypothesis.

And so that there is not one capacity for all contraries can have been proved through syllogisms, and it will be possible to analyze them, since the first one given is in the third figure, the second in the second. However, it has not been proved through any syllogism that there is not one knowledge of contraries, but when it is proved that there is not one capacity for contraries, this is assented to because of the agreement.

The words 'and then it were argued that not every capacity is for contraries' are equivalent to 'and then it were proved through a syllogism that there is not one capacity for contraries', since this is what is meant by 'not every capacity is for contraries'.

Since there has not been a syllogism relative to <there not being one knowledge of contraries>, there cannot be an analysis either. This 20is what he also has said with the words 'Therefore, this argument cannot be reduced'; for it isn't a syllogism; and so it is necessary to posit it, not through a syllogism but through the initial agreement. But it is possible to reduce the statement that there is not one capacity for contraries, since it is proved through a syllogism in the way we have just proved it. And the analysis of this would be of the

<argument> that there is not one capacity. He has said, 'But that there is not one capacity can be' as equivalent to this. (The words 'for contraries' may also be missing in the text.)

He adds the word 'perhaps' because this is not always shown through a syllogism, but it is possible to take it to be clear through a 30 hypothesis or agreement. For example if someone again wished to take it that the capacity for being healthy and the capacity for being sick are not the same, he might make a hypothesis by saying:

> If there is not one and the same capacity for opposites, the capacity for being healthy and the capacity for being sick is not one and the same,

and then produce an argument concerning opposites. (The syllogism would concern there not being one capacity for opposites and not there not being one capacity for being healthy and for being sick.)

5 Or <one might make a hypothesis> in the way <Aristotle> is thought to have argued:

If there is the same capacity for contraries, the same thing will be healthy and sick at the same time.

Then, one would assume in addition, as being obvious:

But it is not possible for the same thing to be healthy and sick at the same time.

For a proof of this kind is not through a syllogism but through a hypothesis, as he himself seems to have posited (as I said) with the words 'For example, for being healthy and for being sick (for then the

- 5 same thing will be healthy and sick at the same time)'. For if it were proved through this statement that there is not one capacity for contraries, it would not be proved through a syllogism, but it, too, would be proved from a hypothesis. For even if it were assumed as obvious that the same thing is not healthy and sick at the same time or the additional assumption became credible through induction and
- 10 not through a syllogism, the proof that there is not one knowledge of contraries would not have come through a syllogism but only from a hypothesis. Therefore, an argument of this kind would not need a syllogistic analysis. It is because he gives a hypothetical proof of this kind that he adds the word 'perhaps' to 'This was a syllogism'.¹⁵⁶
- It is clear from the foregoing example that not every transformation is proved through a categorical syllogism but that they are frequently posited because of being obvious; for that health and sickness, being contraries, cannot co-exist was taken as an additional assumption as being obvious, but not as having been proved through

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a syllogism. And Theophrastus in the first book of his *Prior Analytics* says that the additional assumption is posited either through induction, or because it too is from a hypothesis, or because it is obvious, or through a syllogism.¹⁵⁷ Aristotle says that arguments which make this kind of additional assumption in this way infer and prove the proposed conclusion itself, but not through a syllogism.

As I have already said, he has said 'And then it were argued that not every capacity is for contraries' as equivalent to 'If it were argued and shown that there is not the same capacity for all contraries'.

50a29-32 [Similarly also in the case of things which are inferred through impossibility; for it is not possible to analyze these either. It is possible to analyze the *reductio ad impossibile*, since it is proved by a syllogism, but it is not possible to analyze the other since it is inferred from a hypothesis.]¹⁵⁸

Having asserted and shown that in the case of hypothetical <arguments> based on an agreement there is not a syllogism of what is posited, but if there is a syllogism that it is of something else, he next speaks about <arguments> through impossibility, which are themselves also from a hypothesis. He says that it is not possible to analyze these either because in their case too the syllogism is not relative to what is posited [the proposed conclusion, which is eventually reached] but it is of something else [the impossibility]. For in them something impossible is proved to follow through a syllogism because the opposite of the posited conclusion is hypothesized; the proposed conclusion is posited as a result of the refutation, the impossibility being proved through a syllogism; but the proposed conclusion is not posited through its own syllogism produced for it. For if it is agreed that all virtue is noble and further that everything noble is to be praised, the person who proves by *reductio ad impossibile* to a person who does not agree that all virtue is to be praised does not produce a syllogism for it; rather he hypothesizes the opposite of this, 'Not all virtue is to be praised', assumes in addition that all virtue is noble, and produces a syllogism in the third figure that not everything noble is to be praised. The syllogism has this as conclusion, and the initial statement is proved because the conclusion of the syllogism is impossible.

50a32-7 But they differ from the <arguments> previously discussed [because in those it is necessary that someone agree beforehand that he is going to admit, for example, that the knowledge of contraries is also the same if it is proved that there is one capacity for contraries. But in these proofs they assent even if they haven't agreed beforehand because the falsehood is evident].

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He states the difference between proofs through impossibility and those based on an agreement. Both are from a hypothesis, but in the case of the latter if there hasn't first been an agreement that as it stands with what is proved so it will have been proved for the proposed conclusion, then the proposed conclusion is not always established when what is proved is proved; for the person who proves that there is not the same capacity for all contraries does not prove that "There is not the same knowledge of contraries" necessarily follows unless there was an advance agreement about this. However, in the case of *reductio ad impossibile*, even if there has been no agreement, when the impossible is proved, its opposite is posited because of the necessity of contradiction.

15 **50a37-8** For example, if the diagonal is posited to be commensurable, odds are equal to evens.

He has again used this example of a *reductio ad impossibile*; we have said earlier what the proof is.¹⁵⁹ Having said about reductio ad impossibile that 'they assent even if they haven't agreed beforehand because the falsehood is evident', he sets down this example of the 20way in which it is evident that what follows from the hypothesis is false: if the diagonal is hypothesized to be commensurable with the side it follows that odds are equal to evens. <He is saving> not that it is evident and known that this follows from the hypothesis, but that it is proved through a syllogism that this follows, and, because it is evidently absurd, it does away with the hypothesis from which it 25followed; and when this is done away with because of the absurdity of what follows from it, its opposite, which was the proposed conclusion, is posited. As I said, we have shown, using prime numbers, why 'Odds are equal to evens' follows from 'If the diagonal were commensurable with the side'.

50a39-b4 There are many other <arguments> which reach a conclusion from a hypothesis which we should investigate and indicate¹⁶⁰ clearly. [We will say later how they differ and how many <arguments> from a hypothesis there are. For now let this much be evident to us: it is not possible to analyze such syllogisms into the figures. And we have stated the reason.]

Having spoken about <arguments> based on an agreement and reductiones ad impossibile he says that many other <arguments> also reach a conclusion from a hypothesis. He postpones speaking about 390,1 them more carefully; however, there is no extant treatise by him on this subject. Theophrastus mentions them in his own Analytics, and so do Eudemus and some other associates of <Aristotle>.¹⁶¹ He would be referring to hypothetical <arguments> through an implication

(which is also called a conditional) and an additional assumption, and those through a disjunctive or disjunction, or those through a negative conjunction¹⁶² if, indeed, these are different from the <arguments> just mentioned.¹⁶³ The following would be different from these: <arguments> from analogy which they also describe as 'involving quality' and those from the more and the less and the similar, and perhaps there are other different premisses in <arguments> from a hypothesis. This subject has been discussed elsewhere.¹⁶⁴

It is worth indicating that, as we have already said previously, in 10 this text he is not calling hypotheticals syllogisms without qualification, although he does say they reach a conclusion since he says, 'There are many other <arguments> which reach a conclusion from a hypothesis', and he calls all <arguments> from a hypothesis 'syllogisms' (This is what is meant by 'such syllogisms'). <Arguments> in which the additional assumption is not posited on the basis of a syllogism would be ones which just reach a conclusion, but those in 15which the additional assumption is based on a syllogism would be syllogisms from a hypothesis. So, conversely, according to him, either it is as the more recent thinkers maintain or, as we have already said, hypothetical arguments are conclusive, but they are not syllogisms categorical arguments are syllogisms. Therefore also, according to him, the <argument> involving three <conditionals> would be said to be conclusive, but not to be syllogistic.¹⁶⁵

Chapter 45¹⁶⁶

50b5-21 If any problem which is proved in more than one figure is¹⁶⁷ proved by syllogism in one figure it is possible to reduce the syllogism to the other figure; [for example, a privative syllogism in the first figure can be reduced to the second, and one in the middle figure can be reduced to the first. (But not all syllogisms, only some. This will be evident in what follows.)

(50b9) For if A of no B, B of all C, A of no C. In this way there is the first figure, but if the privative is converted, there will be the middle figure, since B holds of no A and of all C.

(50b13) Similarly, even if the syllogism is not universal but particular, for example, if A of no B, and B of some C, since if the privative is converted there will be the middle figure.

(50b17) Of syllogisms in the second figure the universal ones can be reduced to the first figure, but only one of the particular ones can be. For let A hold of no B and of all C; if the privative premiss is converted there will be the first figure, since B will hold of no A, and A of all C].

It is posited that some problems are proved in only one figure, as is the universal affirmative, which is proved in only the first figure, and

- 25 some in two, as is, again, the universal negative, which is proved in the first and the second figure. Similarly the particular affirmative is also proved in two figures, since it is proved in the first and the third. But the particular negative is proved in the three figures. And so he says that, things being this way, if any problem which is proved through more than one figure is proved by syllogism in some figure,
- 30 one can also reduce the syllogism to the other figure or figures in which the same problem is also proved. For example, if the universal negative is proved in the first figure, it will also be possible to reduce the resulting syllogism to the second figure by converting the negative premiss, since this problem is also proved in the second figure.
- 391,1 And similarly, if the universal negative is proved in the second figure, it is possible to reduce the syllogism to the first figure by converting the negative premiss.

But, he says, it is not possible for every syllogism which proves something in some figure to be reduced to the other figures in which

- 5 the same problem is also proved. He is speaking about both the fourth syllogism in the second figure, which infers a particular negative from a universal affirmative major and a particular negative minor, and the sixth syllogism in the third figure, which also infers a particular negative from a universal affirmative minor and particular negative
- 10 major. For a particular negative problem is proved in the three figures, but the two syllogisms just mentioned cannot be reduced to another figure, since the reduction and analysis from one figure into another comes about through conversion, but neither of these can be proved by conversion; rather both are proved through *reductio ad impossibile*, as has been shown.¹⁶⁸ And he will make this known as he proceeds.
- 15 Moving on, he first shows how it is possible to reduce syllogisms from one figure to another, and the procedure he uses is described in a way which is well known. It is because of this procedure that earlier when he was going to speak about the reduction of syllogisms to the figures he asserted what it is now possible to see is true, when he said, 'It will also result at the same time that things said previously are
- 20 confirmed and are more evident ...'.¹⁶⁹

50b21-30 If the affirmative relates to B, the privative to C, [then one should posit C as the first term, since C of no A and A of all B, so that C of no B; and therefore B of no C, since the privative converts.

(50b25) But if the syllogism is particular, when the privative relates to the major extreme there will be a reduction to the first figure, for example, if A of no B and of some C; for if the privative is converted, there will be the first figure, since B of no A, and A of some C].

The second syllogism in the second figure is the one having a universal affirmative major and a universal negative minor, and it is proved through two conversions, one of the negative premiss, the other of the conclusion. He shows how we can reduce this to the universal negative in the first figure. He says that one should first posit the minor term as major and posit it before the major (it is necessary to predicate the major in the conclusion), convert the universal negative premiss, and add to it the universal affirmative major premiss as minor; in this way there will be the first figure, and what follows will be that the minor term <holds> of none of the major; converting this conclusion (the universal negative does convert) we will have what was proposed to be proved, namely that the major <holds> of none of the minor. A was the middle term in the syllogism in the second figure, B was the major in relation to which the universal affirmative was assumed, and C was the minor, in relation to which the premiss was universal negative.

50b30-2 But <if the syllogism is particular.> when the affirmative <relates to the major extreme> there will be no analysis, [for example if A of all B and not of all C; since AB does not admit¹⁷⁰ conversion, nor would there be a syllogism if there were a conversionl.

Having discussed the third syllogism in the second figure (it has a universal negative major and a particular affirmative minor) and 5 shown that it is reduced to the fourth syllogism in the first figure by conversion of the major premiss,¹⁷¹ he now discusses the fourth syllogism in the second figure. He says that when the affirmative relates to the major extreme, the privative to the minor,¹⁷² the combination is necessarily syllogistic and has one premiss particular, the 10other affirmative universal (the latter is the major; for, as has been shown, when in the second figure the major premiss is not universal, it is impossible for there to be a syllogism). The conclusion is negative particular. A combination of this kind, that is, a syllogism from such premisses in the second figure and having a particular negative conclusion, cannot be reduced to the first figure, although the particu-15lar negative is also proved in the first figure, because this syllogism is not proved through conversion but only through reductio ad impossibile.

As we have said,¹⁷³ the analysis of syllogisms from one figure into another comes about using conversion. He has said 'since AB does not admit conversion', not because the universal does not convert at all (the premiss AB is posited as universal affirmative, and the particular affirmative converts from the universal affirmative), but because it does not convert with itself.¹⁷⁴ Premisses which convert with themselves are said to convert in the strict sense; that is why the

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unqualified or necessary universal negative and the particular affirmative are most thought to convert, but the universal affirmative, even if it has a certain kind of conversion with itself,¹⁷⁵ nevertheless does not convert with respect to itself. This is why he says that the universal affirmative does not admit conversion and that if the conversion which the universal affirmative does admit (it admits

conversion into the particular affirmative) did occur and were taken,
the combination would not still be syllogistic; for the result would be
a combination in the first figure having the major premiss BA particular affirmative and the minor premiss AC particular negative, and this combination is not syllogistic.

Someone might also understand the words 'nor would there be a syllogism if there were a conversion' as meaning 'even if it were accepted¹⁷⁶ that the universal affirmative converts with itself, even so

- 393,1 there would not be a syllogism'. For in this way the combination is also not syllogistic, since the result will be a universal affirmative major premiss BA and a particular negative minor premiss in the first figure, but it is impossible for there to be a syllogism in the first figure when the minor premiss is negative.
 - 5 **50b33-40** Again not all the syllogisms in the third figure can be analyzed into the first, although all those in the first can be analyzed into the third.

(50b35) [For let A hold of all B, B of some C. Then, since the particular affirmative converts, C will hold of some B; but A holds of all B, so that the third figure results.

(50b38) And likewise if the syllogism is privative, since the particular affirmative converts, so that A will hold of no B and C of some.]

The reason why the syllogisms in the third cannot all be analyzed into the first is that the sixth syllogism in the third figure, which has a universal affirmative minor and particular negative major cannot be proved through conversion just as the fourth syllogism in the second figure cannot be; for it, too, is proved through *reductio ad impossibile* only, as he will make clear as he proceeds.¹⁷⁷ The words 'all those in the first can be analyzed into the third' do not mean 'all' without qualification (since neither the syllogism having a universal affirm-

- 15 ative conclusion or that having a universal negative one are reduced to the third figure) but rather 'all those which have as a conclusion a problem which is also proved in the third figure' – his discussion is about these. These are the two which have a particular conclusion, one affirmative, one negative, since these conclusions are also proved in the third figure.
- 20 (50b35) And first¹⁷⁸ he does an analysis of the syllogism which consists of a universal affirmative major and a particular affirmative

minor, and infers a particular affirmative conclusion; for when the particular affirmative minor is converted, the result is the third figure and a combination which implies the same conclusion as that posited in the first figure.

(50b38) And he analyzes the syllogism in the first figure which implies a particular negative conclusion into the third figure again in terms of the conversion of the particular affirmative premiss, which is the minor. For this syllogism consists of a universal negative major and a particular affirmative minor, and when the latter is converted, the third figure again results, and in it a combination which proves a particular negative conclusion.

51a1-18 Only one of the syllogisms¹⁷⁹ in the final figure is not reduced¹⁸⁰ [to the first figure, namely the one in which the privative premiss is not posited as universal. But all the others are analyzed.

(51a3) For let A and B be predicated of all C; then since C converts¹⁸¹ with respect to each of them partially, C holds some B. Consequently there will be the first figure if A of all C and C of some B.

(51a7) And if A of all C and B of some, the argument is the same, since C converts with respect to B.

(51a8) But if B of all C and A of some C, then B should be posited as first term, since B of all C and C of some A, so that B of some A; and since a particular proposition converts A will also hold of some B.

(51a12) And if the syllogism is privative and the terms are universal one should take it in the same way; for let B hold of all C, A of no C; then C will hold of some B and A of no C, so that C will be the middle.

(51a15) And similarly if the privative is universal, the affirmative particular, since A will hold of no C, C of some B].

Having shown that the two syllogisms in the first figure implying a particular conclusion are reduced to the third figure, he speaks in turn about syllogisms in the third figure and asserts and shows that five of the syllogisms in this figure are reduced to the first figure (since they were shown to be syllogistic in this way), but not the sixth – we have given the reason for this.¹⁸²

(51a3) And first he reduces the syllogsim with two universal affirmative premisses. Since affirmative universal propositions convert with respect to particular ones and A and B are predicated of all C, if we convert BC, we will have 'C of some B'; but 'A of all C' was assumed; the result in the first figure is 'A of some B', which is what was also proved by the combination in the third figure which was set out. The words 'then since C converts with respect to each of them ...'

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are equivalent to 'since both premisses are universal affirmative and convert, we will be able - whichever of them we want to convert - to reduce the syllogism to the first figure'.

(51a7) And then next he reduces the syllogism consisting of a universal affirmative major and a particular affirmative minor in the third figure, again converting the particular affirmative premiss.

(51a8) Third he reduces the syllogism consisting of a universal affirmative minor and a particular affirmative major, this also 15through conversion of the particular affirmative premiss.¹⁸³ Since this was proved by two conversions (this is how the proposed result was proved: its conclusion was converted as was the particular premiss). he says that one should take B as the first and major term. For since the premiss BC is universal, and in the first figure it is necessary that

the major premiss be universal, he says that one should make this the major premiss and AC, which is particular affirmative, the minor; 20when AC is converted one will have 'B of all C and C of some A', and the conclusion 'B of some A' will follow: and if we convert this we will have the conclusion which it was proposed to prove, the one which was also proved through the combination set out in the third figure.

(51a12) Fourth and after these things he analyzes the syllogism which infers a privative particular conclusion and consists of a uni-25versal negative major AC and a universal affirmative minor BC; for when the affirmative premiss is converted the result is the first figure and the same conclusion.

(51a15) Fifth he analyzes the syllogism consisting of a universal negative major AC and a particular affirmative minor BC, and he does this in the same way by converting the affirmative premiss. 30

> 51a18-22 But if the privative premiss is taken as particular, [there will not be an analysis, for example, if B holds of all C and A does not hold of some C: for if BC is converted both premisses will be particular).

Here he is speaking about the sixth <syllogism> in which the negative premiss is particular. He says that it will not be analyzable and reducible to the first figure because the particular negative premiss does not convert, but if the universal affirmative is converted, there will be two particular premisses. But an analysis is by conversion.

- 51a22-5 And it is also evident that the premiss relating to the 395.1
 - minor extreme has been converted¹⁸⁴ for the analysis of the figures into one another [in the case of both figures, since when it was altered, the change came about].

When he now says 'into one another', he is speaking about the first and the third figure, since syllogisms in the first figure come to be in

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the third and those in the third come to be in the first because the minor affirmative premiss is converted. But this was not so in the case of the first and second figure, since syllogisms in those figures were reduced into one another when the universal negative major premiss was converted.

51a26-33 One of the syllogisms in the middle figure is analyzed into the third figure, the other is not, [since there is an analysis when the universal premiss is privative.

(51a28) For if A of no B and of some C, both premisses convert in the same way with respect to A, so that B of no A and C of some A; for A is the middle term.

(51a31) But when A holds of all B and does not hold of some C, there will not be an analysis, since neither of the premisses resulting from conversion is universal].

A particular negative conclusion is proved in two ways in the second 10 figure and in three ways in the third. And so he shows in the case of these figures how we can reduce syllogisms having the same conclusion to the third figure if they have been put forward in the second and¹⁸⁵ to the second if they have been put forward in the third; for he has spoken about reduction from the first figure into these figures and from these into the first. He says that we analyze one of the two 15 syllogisms in the second figure which infer a particular negative conclusion into the third figure, but not the other one.

(51a28) For we can analyze the one consisting of a universal negative major and a particular affirmative minor by converting both premisses. For a universal negative converts to itself, and so does a particular affirmative; consequently if 'A of no B and of some C' is assumed, then 'B of no A and C of some A' will be a combination in the third figure which implies a particular negative conclusion.

(51a31) But the other syllogism, which has a universal affirmative major and a particular negative minor is not analyzed into the third figure just as it was not analyzed into the first. For, if someone is going to analyze a syllogism put forward in the second figure into the third figure, it is necessary that both premisses be converted, but, of 25the premisses assumed, the particular negative does not convert at all, and when the universal affirmative is converted it becomes particular. He states the reason quickly: 'since neither of the premisses resulting from conversion is universal'. For if there is going to be a syllogism, it is necessary that some premiss be universal, but 30when a universal affirmative premiss is converted the result is not a universal premiss, and that was the only premiss which it was possible to convert. However, even if this did convert universally, that would not mean that it was possible for there to be an analysis of this

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into the third figure because it is necessary that both premisses be converted, but the other premiss does not convert.

396,1 **51a34-b5** And the syllogisms from the third figure can be analyzed into the middle one when the privative is universal, [for example if A of no C and B of some or all. For C will hold of no A and of some B.

(51a37) But if the privative is particular, an analysis will not be possible, since a particular negative does not admit conversion.

(51a40) So it is evident that in the case of these figures the same syllogisms are not analyzed as were not analyzed into the first figure, and that when syllogisms are reduced to the first figure only these are inferred through impossibility.

(51b3) So it is evident from what has been said in what way one should reduce syllogisms and that the figures are analyzable into one another].

There are three syllogisms in the third figure which infer a particular negative conclusion; two of these have a universal negative major and either a universal affirmative or a particular affirmative minor, and

- one has a universal affirmative minor and a particular negative major. He says that of these three two, those having a universal negative premiss, are analyzed into the middle figure, if both premisses are converted. For if 'A of no C and B of C' (either all or some)
- 10 is assumed, when both premisses are converted, the result is 'C of no A and C of some B', a combination in the second figure which implies a particular negative conclusion.

(51a37) He says that the third syllogism having a particular negative premiss cannot be reduced to the second figure, just as the syllogism in the second figure with a particular negative premiss was not reduced to the third figure. And the reason is the same: it is necessary that both premisses be converted, but of these one does not

15 necessary that both premisses be converted, but of these one does not convert at all, and if the other is converted, the result is particular; and it is impossible for there to be a syllogism without a universal premiss.

In both cases he has proved for you, that these syllogisms which have a particular negative conclusion are not analyzed into another figure; in the case of the syllogism in the second figure he gave as reason the fact that if the universal affirmative is converted it be-

20 comes particular and when it is particular the combination is not syllogistic whether or not the other premiss is converted, because both premisses are particular.¹⁸⁶ In the case of the syllogism in the third figure, the reason <he gives> is that it is not possible to convert the particular negative premiss. Both of these things are reasons why

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in the case of each of the syllogisms it is not possible for them to be reduced to another figure.

(51a40) He showed earlier that these syllogisms cannot be reduced 25 to the first figure either, and he now reminds us of this and of the fact that, when the other syllogisms in the second and third figure are analyzed into the first figure by conversions, and conversion makes credible that they imply something, only these two were not reduced to the first figure through conversions, but were shown to imply something only through *reductio ad impossibile*. 30

Chapter 46

51b5-25 It makes some difference in establishing or refuting whether one supposes that 'not being this'187 and 'being not-this' [(for example, 'not being white' and 'being not-white')] mean¹⁸⁸ the same thing or something different. [For these do not mean the same thing, nor is 'being not-white' the negation of 'being white'. Here is the explanation of this. 'Can walk' is related to 'can not-walk' in the same way as 'is white' is related to 'is not-white'189 or 'knows the good' is related to 'knows the notgood'. For 'knows the good' does not differ from 'is knowing of the good', nor does 'can walk' differ from 'is capable of walking'.¹⁹⁰ Consequently neither do their opposites, that is, 'cannot walk' and 'is not capable of walking'. So, if 'is not capable of walking' also means the same thing as 'is capable of walking and of not-walking',¹⁹¹ then these can hold of the same thing at the same time, since the same person can walk or¹⁹² not-walk and the¹⁹³ knower of the good is also the knower of the not-good; but an opposite assertion and negation do not hold of the same thing at the same time. So, as 'not knowing the good' and 'knowing the not-good' are not the same,¹⁹⁴ so too are 'being not-good' and 'not being good' not the same, since of analogous pairs if one is different, so is the other.

In regard to being able to produce a syllogism and establish or refute something using one he says that it makes a difference if one knows how to distinguish and separate propositions which have a negative appearance but are affirmative from negations. (He is speaking about propositions which Theophrastus calls 'involving transposition', and he himself has spoken about them in *On Interpretation*¹⁹⁵ and shown that they are not negations of affirmations.)¹⁹⁶ He says this either because one frequently supposes that something of this kind which is syllogistic and proves something is not syllogistic because it is composed of two negatives or, in the case of the first and third figures, because one thinks it has a negative minor premiss. For consider the argument saying:

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A stone is not-living:

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everything which is not-living is imperceptive (or whatever it might be true to predicate of what is not-living).

which is syllogistic¹⁹⁷ because 'A stone is not-living' is not a negation. 10 If one interprets that premiss as a negation, one will suppose that the argument is not syllogistic on the grounds that the combination which says that a stone is not living and then predicates something universally of what is living is not syllogistic, since it has a negative minor in the first figure.¹⁹⁸ (Moreover, the middle term is not the same in the two combinations.)199

- He makes clear in a general way what he is discussing by saying 15'not being this' and 'being not-this', something which he has previously discussed in On Interpretation, as I said. With these words he shows that in propositions in which a modality of holding is not co-predicated²⁰⁰ there is a negation only when the negative particle is combined with the word 'is', but that there is not a negation but an affirmation if the particle is not combined with 'is', but with something else prior to the 'is' which is posited.²⁰¹
- He now makes distinctions on these matters and shows that 'not 20being white' does not mean the same thing as 'being not-white', nor is 'is not-white' the negation of 'is white'; rather 'is not white' is. He does this because such expressions convey the impression that they are the same as negations, as if, since it is impossible for Socrates to
- 25be good and not to be good at the same time, so too it is impossible for him to be good and to be not-good at the same time.²⁰² And so he shows that propositions taken in this way do not mean the same thing as each other and are not negations.²⁰³

The proof makes use of an analogy and is itself a hypothetical proof. The analogy assumes that the following are related to one another in the same way;

'is white' to 'is not-white': 'can walk' to 'can not-walk'; 'knows the good' to 'knows the not-good'.

For as 'is not-white' is related to 'is white', so is 'can not-walk' related to 'can walk' and 'knows the not-good' to 'knows the good'. He shows that these are related to one another in the same way by taking it that 'is knowing of the good' is equivalent to 'knows the good' (since the 'is'

white' and 'is not-white', since in this case the 'is' is first in position

- 35 is included in 'knows'), and 'is capable of walking' is equivalent to 'can walk'. So, as it is with 'is knowing of the good' and 'is knowing of the 398.1not-good', and 'is capable of walking' and 'is capable of not-walking' in all these antitheses the 'is' is first in position – so too it is with 'is

in both; therefore, they are related similarly to one another with 5 respect to the position and order of 'is'.

However, in the case of 'can walk' and 'can not-walk' and of 'knows the good' and 'knows the not-good' there is no contradictory antithesis, since 'can not-walk' is not the negation of 'can walk' and 'knows the not-good' is not the negation of 'knows the good'. An indication of this is that 'can walk' and 'can not-walk' are true at the same time. For this is the way it is with capability. And 'knows the good' is related in the same way to 'knows the not-good', at least if the knowledge of contraries is one and the same. But it is impossible for negations to be true together with affirmations. Therefore, 'is notwhite' is not the negation of 'is white'.

He assumes as a hypothesis that just as in their case there is <only> an apparent opposition, so too in the case of these things, if they are related in the same way to one another. And he shows that they are related in the same way to one another because in all of them the 'is' is placed in the same way and <expressions> in which 'is' is placed in the same way are related in the same way to each other. He implicitly adds that therefore all of these <expressions> are related in the same way to each other. And he also shows that 'can not-walk' 20is not the negation of 'can walk' and 'knows the not-good' is not the negation of 'knows the good', because these <expressions> are true at the same time as the affirmations, but opposite <expressions> are not true at the same time. ...²⁰⁴ Leaving out a straightforward proof that 'can not-walk' is equivalent to 'is capable of not-walking' and 'knows 30the not-good' to 'is knowing of the not-good' ('is not-white' is similar to these), he first takes their negations in the strict sense, 'cannot walk' and 'does not know the good', and shows that 'cannot walk' is equivalent to 'is not capable of walking' and similarly that 'does not know the good' is equivalent to 'is not knowing of the good' (He does 35 not lay out this second example on the grounds that he showed it in the treatment of 'cannot walk'). He wishes to show how all the apparent oppositions are related to one another and that they are true together in the same way. (The text is unclear because, having shown that the word 'is' is implicitly included in 'can walk' and 'knowing the good' he next adds 'Consequently neither do their 25opposites' on the grounds that it is better to take these opposites about which he proposed to speak than to take the things which are true together with 'can walk' and 'knows the good' and which, although they are not opposites, produce the impression of being opposites; these latter are 'can not-walk' and 'knows the not-good'.)

Having mentioned negation in the strict sense and shown what it is equivalent to, he next also lays out that which he proposed to discuss, that which itself also seems to be an opposite. When he says, 'is capable of walking and of not-walking', what he says is equivalent to 'These things are equivalent and mean the same thing: "is capable

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- 5 of walking" <and "can walk", and "is capable of not-walking">²⁰⁵ and "can not-walk". He does not also mention negation idly or pointlessly, but in order to show that 'cannot walk' and 'does not know the good' are similar to 'is not white'. For just as in the case of 'is not white'
- 10 what negates is placed before the 'is' and combined with it, so too in the case of 'cannot walk' and 'does not know the good'.²⁰⁶ Consequently, if these are negations of 'can walk' and 'knows the good', 'is not white' (but not 'is not-white') will also be the negation of 'is white', since it is similar to them.
- Having said, 'For "knows the good" does not differ from "is knowing of the good", nor does "can walk" differ from "is capable of walking", and then set down in the middle the fact that 'is' is also contained implicitly in the same way in the negative opposites of these (since 'cannot walk' is equivalent to 'is not capable of walking'), he turns to the other proposition about ability which was included in the analogy,
- 20 namely, 'He can not-walk'²⁰⁷ and shows that 'is' is also contained in this and that 'He can not-walk' is equivalent to 'The same person is capable of not-walking' – and thus he says 'or not-walk' without adding 'can'. Indeed, this itself ['He can not-walk'] is also equivalent to 'He is capable of not-walking'. For in this way it will be shown to be similar to 'It is not-white'. When he has shown this he adds 'These
- 25 hold of the same thing at the same time',²⁰⁸ which is equivalent to 'However, these things, being able to walk and being able to not-walk, can hold of the same thing at the same time, and so, again, can knowing the good and knowing the not-good'. And he lays out the reason why these things hold at the same time when he says, 'And
- 30 the knower of the good is also the knower of the not-good'. To make the proposition 'These can hold of the same thing at the same time' credible he adds to it another proposition, 'But an opposite assertion and negation do not hold of the same thing at the same time'. From these two propositions it follows in the second figure that the previously mentioned propositions are not opposed to one another as
- 35 assertion and negation. He does not add this conclusion because it is well known, but proceeds to the subject under consideration and shows that 'is not white' and 'is not-white' do not mean the same
- 400,1 thing, nor is 'is not-white' a negation at all. And he says, 'So, as "not knowing the good" and "knowing the not-good" are not the same' (for it has been shown that 'knowing the not-good' is true together with the affirmation which asserts knowing the good, but it is not possible
 - 5 for 'He does not know the good' to be true together with the affirmation) 'so too are "being not-good" and "not being good" not the same'. Or 'being not-white' and 'not being white'. For the same argument applies to all things which are similar and have an analogy to one another, since in general 'not being this' is not the same as 'being not-this'. In the case of analogous pairs if one is different, so is the
 - 10 other. But 'knowing the good' and 'knowing the not-good' and 'not

knowing the good', and 'being white' and 'being not-white' <and 'not being white'>²⁰⁹ are analogous, but 'knowing the not-good' is different from 'not knowing the good', since 'knowing the not-good' co-exists with 'knowing the good' in the same thing, but it is not possible for 'not knowing the good' to be true of that of which 'knowing the good' is true. Therefore, also, 'being not-white' is different from 'not being white'.

51b25-8 Nor are 'being not-equal' and²¹⁰ 'not being equal' the same, since there is a subject of one, that is of 'being not-equal', [and the subject is the unequal, but there is no subject of the other;²¹¹ that is why not everything is equal or unequal, but everything is either equal or not equal].

He has also shown, using the analogy with 'can walk' and 'can 20not-walk' and 'knowing the good' and 'knowing the not-good', that 'being not-good' is not the same as the negation 'not being good' and generally that 'being not-this' is different from 'not being this'; now he adds something else by means of which he shows that 'being not-this' and 'not being this' are not the same as one another. For there is a subject of one, that is of 'is not-this'. For the person who says 25'It is not-equal' says that something exists and predicates exists of it, but he says this thing is not-equal. For the person who says 'It is not-equal' posits that something exists and separates equality from it. A predication of this kind is made of something determinate and a subject, since it is not true to predicate 'is not-equal' of what does not exist at all. But there is nothing determinate which is the subject of 30 'is not equal' because it can be said both of what exists and of what does not; for 'is not equal' is not just true in the case of existing things or quantities, such as unequal things, but it is also true of everything which does not exist, since it is true of everything which does not exist that it is not equal. Therefore, 'equal or not equal' divides the true and the false in the case of everything – existing and not existing alike –, since they are a contradictory pair; however, 'equal and unequal' (to 35the latter of which 'is not-equal' is similar) do not divide the true and false in the case of everything, but only in the case of existing things and quantities.

51b28-32 Furthermore, 'is a not-white log' and 'is not a white log' do not hold at the same time. [For if a log is not-white, it will be a log, but what is not a white log does not have to be a log. So it is evident that 'is not-good' is not the negation of 'is

So it is evident that is not-good is not the negation of i good'.]

He also shows that statements which have what negates added to 'is' and those which do not have negation combined with 'is' are not the

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- 5 same and do not mean the same thing on the basis of the fact that they are not true at the same time. And he chooses propositions of the following kind: 'It is a not-white log' and 'It is not a white log'. For the proposition which says that it is a not-white log is true in the case of a log which is not-white, since it posits that the log exists. But the proposition which says that it is not a white log can be true even if a log does not exist. Having shown through these things that 'is not-
- 10 this' is not the same as 'is not this', and that because it is not the same as this genuine negation, 'is not-this' is not a negation either, he infers and shows on the basis of this that everything expressed in this way is an affirmation; he says:

51b31-5 [So it is evident that 'is not-good' is not the negation of 'is good'.] So if an assertion or its negation is true of everything,²¹² then, if it is not a negation, it is clear that it is a kind of affirmation; [but there is a negation of every affirmation, and the negation of 'is not-good' is 'is not not-good'].

What he is saying is this. If every proposition and every assertoric expression is true of something either as an affirmation or as a negation, and things expressed in the way <'is not-good' is> are true of something and not as a negation, it is clear that they will be true as an affirmation. He adds 'a kind of' because these things are not the

- 20 same as affirmations without qualification and in the strict sense. For such affirmations, for example one which says 'It is white' or 'It is good', posit something, but those which are expressed in the other way, propositions by transposition, predicate existence of their subjects and, being affirmations with respect to this subject, they do away with what is predicated of them; and in a way they negate this. Of this kind are 'It is not-white' and 'It is not-good', since they say that the subject *is* not-such-and-such.
- 25 The words 'So if an assertion or its negation is true of everything ...' may also express the following sort of thing. If it is true of every proposition and every assertoric expression that it is either affirmative or negative, but things expressed in the way <'is not-good' is> are assertoric expressions and propositions but are not negations (this was shown; for if they do not negate what is posited by the affirmation, they do not negate anything else either), they will be affirmations. So, since there is a negation of every affirmation, cpropositions> saying 'It is not not-this' will be the negations of things of the form 'It is not-this', 'It is not not-good' of 'It is not-good', and
 - in other cases things which are similarly related.
- 402,1 So Aristotle says that 'Socrates is not white', and not 'Socrates is not-white' is the negation of the affirmation 'Socrates is white'. But there are people who think that not even a proposition taken in this

way is a negation. For they think that one should not just posit what negates before 'is' or before the predicate; rather a negation has what negates placed before the entire affirmation or proposition. And they think that the negation of 'Socrates is white' is 'It is not the case that Socrates is white'²¹⁴ and not 'Socrates is not white'.

They say that 'Kallias is not walking' is ambiguous, and that sometimes the negative particle is added to the whole of 'Kallias is walking' (and this is a negation), and sometimes it is added only to 'is walking' (and they say that this is nonetheless an affirmative expression). They offer as evidence for this that it is possible that both 'Kallias is walking' and 'Kallias is not walking' are false at the same time, but contradictory opposites are never false at the same time; for they say that if Kallias does not exist, 'Kallias is not walking' is no less false than 'Kallias is walking', since in both what is meant is that there is a certain Kallias and that walking (or not-walking) holds of him. However, 'It is not the case that Kallias is walking' is false.

In addition they introduce this kind of evidence that one should not 20form a negation in this way: 'He is walking', 215 'He is not walking', said with reference to a female. For they say that again both propositions are false when taken in this way whether or not what is referred to is walking. And they say that the following kinds of things are similar to these. 'The teacher Kallias is walking', 'The teacher Kallias is not walking', since both of these are false if Kallias is not a teacher. They 25say that the former of these²¹⁶ is defective because of a misrepresentation, the latter because of a false assumption. However, both are no longer false if what negates is placed before the entire proposition.²¹⁷ And they say that the reason why in these cases both the propositions which are antithetical in this way are false is the same since 'He is not walking' says the same thing as 'There is this man to whom I am referring and who is not walking'; and the same, they say, holds in 30 the case of a defective false assumption, since in that case the person who says 'The teacher Kallias is not walking' says the same thing as 'There is a certain teacher Kallias who is not walking'.²¹⁸

Furthermore, they say that if 'Socrates walked' is true, 'Socrates did not walk' is no less true, since he both walked and didn't walk.²¹⁹ But, just as it is impossible for opposites to be false together, so it is also impossible for them to be true together.

However, that what they say is false and that a name in propositions which are taken separately from what negates²²⁰ does not signify that what it names exists, is clear most of all from affirmations which make predications of things which are still coming to be and do not yet exist. For it is true to say of a house which is being built that 'A house is being built' and of a cloak that is still being made that 'A cloak is being woven'. But it is not true to say of the house which is still being built that 'There is a certain house which is being built' 5

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or of the cloak which is still being woven that 'There is a certain cloak which is being woven'. For how could what is coming into existence already exist? For the existence of something is inconsistent with its <still> coming to exist. Consequently a name in affirmations does not signify that the thing exists; and if it doesn't in affirmations, it does not signify this in negations which do not have the negative particle

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placed before the name.²²¹

Furthermore, if the proposition, which we call a negation, 'Socrates is not alive' is false because it means 'There is a certain Socrates who is not alive', the proposition which says that 'Socrates died' will also be false for the same reason, since it will mean 'There is a Socrates who died'. They do not speak correctly when they say that 'Socrates

- 15 died' is ambiguous, and in one sense, which is false, is composed of a name, 'Socrates' and a verb 'died', and in the other, which is true, is inflected as a whole from 'Socrates is dying'. For what are inflected temporally are verbs, but if something does not signify time it is not inflected temporally either; and names are such things. Consequently
- 20 if something is composed of a name and a verb, this will not be inflected temporally as a whole in the strict sense because the name in the composite is uninflected.

Furthermore, if 'Socrates died' were inflected as a whole, it would not be assertoric. In any case 'that Socrates has died'²²² is not an assertoric expression because it seems to involve an inflection of the

- 25 whole expression. But 'Socrates died' is an assertoric expression because one part, the name, remains fixed, and only the other, the verb, is inflected. And so 'Socrates' does not signify the same thing in 'Socrates is dying' and in 'Socrates died', since in 'Socrates is dying' 'Socrates' indicates the existing Socrates, but in 'Socrates died' it is used anaphorically; for in the latter case 'Socrates' signifies this man
- 30 who was Socrates (not who exists). It is for this reason that the proposition 'Socrates died' is true, since the thing which was signified by the name 'Socrates' did die.

'A son will be born to me' is the same sort of thing, since it is not about the person who is my son, but about the person who will be. And so is 'I will possess a house', since with it we are not saying that there is a house which will exist; nor is it inflected from something <as a whole>.

- 35 So, when the subject is taken in this way, each of the propositions we have mentioned²²³ is true. However, in saying the name, the person who utters a proposition, which is taken to hold when the subject term in the proposition is in one condition does not also presuppose that if it is in a different condition the proposition is true.
- 404,1 So if the predicate does not hold of some subject, the subject is in one condition, but if it is clear that it does not exist, it is in another. For when it is uttered just by itself a name does not signify either existence or non-existence. For what is signified by it does not further

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signify non-existence, nor does it by itself signify existence rather 5 than past or future existence; rather it itself is only a sign for the thing. And <the verb> which is combined with it indicates whether the thing is or was or will be. So, in this way, all of 'Socrates was alive', 'Socrates died', and 'Socrates did philosophy' are uttered anaphorically, with what is added to the name indicating that what is signified by the name existed previously. So, since each of these is true, their 10 opposites, 'Socrates did not die', 'Socrates was not alive', 'Socrates did not do philosophy', are false.

Furthermore, 'What exists exists'224 is true, but 'What exists in this respect²²⁵ exists' is unintelligible. But if 'What exists exists' is not equivalent to this, neither will 'What does not exist does not exist' be equivalent to 'What does not exist, which does not exist, exists'.²²⁶ For, in general, an affirmation does not say that that of which such and such holds exists, nor does it do so in cases such as 'What exists exists', 'He is alive', 'He exists', and 'Gods exist', in which the predicate is existence itself. For all of these and their ilk are true when they are said in this way, but they are absurd and unintelligible when they are transformed.227

Furthermore, it is true to say that the word 'exists' exists, but it is absolutely impossible to say that there exists a certain 'exists' of which the word 'exists' holds. And although it is true that it is 20impossible for what is impossible to exist, it is false that there is something impossible of which impossibility of existence holds. And it is necessary that everything which runs moves, but it is not necessary that there be something running, which moves by necessity.²²⁸ And it is necessary that everything which has a wounded heart die, but it is not necessary that there exist someone with a wounded heart. For if the names signify this in propositions, they would also 25signify the same thing when uttered by themselves. And in this way everyone who utters a name would be asserting an affirmative proposition.

Furthermore, if the person who says 'Socrates is walking' is saying something equivalent to 'There is a certain Socrates, and he is walking', then also the person who says 'Socrates does not exist' would be saying something equivalent to 'There is a certain Socrates. and he does not exist', which is unintelligible. And 'Socrates does not exist' is true, but 'There is a certain Socrates who does not exist' is false. And when what is referred to is a female both 'He is walking' and 'He is not walking' are thought <by them> to be false both because of the ineptness of the misrepresentation and because the person who says 'He is not walking' is thought <by them> to be saying something equivalent to 'This man who is referred to by "he" is the one who is not walking'.

The people who say these things would not have said them if they 35understood what a negation means. It means that this does not hold

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of that of which it is said to hold.²²⁹ Furthermore, whether or not the subject exists, this is what negation is in either case; for if the particular thing of which something is said to hold exists, the negation says that it does not hold of the thing, and if the thing does not exist, in the same way the negation says that it does not hold of the thing, without further signifying either that the subject exists or that it does not. Nor is the negation true when said in one case but not

- 5 when said in the other, but, said in either case, it is true if the affirmation is false. So, <the negation is also true> if someone is walking, but walking does not hold of the 'he' of which it is said to hold, if what is referred to is not 'he'. The same thing is true of 'This teacher is walking' if the person is not a teacher. For even if he is walking the <assertion> itself of the affirmation is false, but 'This teacher is not walking' is true, since walking does not hold of that of
- 10 which <the affirmation> says walking does hold. 'Socrates walked' and 'Socrates did not walk' are both true, but not at the same time, and so they are not opposites (since a contradiction is not of this kind). 'Socrates walked' and 'Not-Socrates walked'²³⁰ are no less true at the same time. For someone of whom the indefinite name is said walked.
- 15 And so the objections against the view that what negates should be combined with what is predicated in negations concerning individuals turn out to be unsound.

51b36-9 They have this order in relation to one another. Let A be 'being good', [B be 'not being good', C (which is under B) 'being not-good', and D (which is under A) 'not being not-good'].

He has shown that 'It is not-white' and 'It is not-good' and all 20 <propositions> which are similar to these in having what is predicated be 'is not-this' are different from the negations 'It is not white' and 'It is not good', and generally 'It is not this', and are themselves affirmations, just as 'It is white' and 'It is good' and generally 'It is this' are affirmations; and that there are negations of them, namely 'It is not not-white', 'It is not not-good', and generally 'It is not

- 25 not-this'. (For in general in propositions in which 'is' is co-predicated as a third item, there are two antitheses and two contradictions, simple ones and those by transposition, as he showed in *On Interpretation*.²³¹) And now he describes what order and entailment relation simple contradiction and contradiction by transposition have with respect to one another. And he now proves these things which he
- 30 mentioned in *On Interpretation*, saying that he spoke about their order in the *Analytics*. The text in which he mentioned them starts:

When 'is' is co-predicated as a third item, there are already²³² two kinds of antithesis. I mean, for example, 'A human being is

just'. I say that 'is' is a third component in the affirmation, whether it is a name or a verb,

and proceeds to

These things are ordered in this way, as is said in the Analytics.²³³

Here he teaches the things which he says in On Interpretation were ordered in the Analytics, ordering and describing them.

He posits A. B as the simple contradiction, A as the affirmation 'A human being is good', and B as its negation 'A human being is not good'. And under these he places the contradiction by transposition; he takes C as the affirmation by transposition which says 'A human being is not-good' and places it under B, the negation; and he posits 5 D as the negation by transposition, 'A human being is not not-good' and places it under A, the simple affirmation. And so the negation which is not simple but is said by transposition is placed under the simple affirmation, and the affirmation which is not simple but said 10 by transposition is placed under the simple negation. With this diagram²³⁴ he shows their relation to one another and their entailment relation, and he shows that each of the negations coordinated with an affirmation follows from the affirmation, but that the affirmations do not follow from the negations.

51b39-52a12 Either A or B holds²³⁵ of everything, but they do not hold of the same thing, and either C or D holds of everything but they do not hold of the same thing.

(51b41) And it is necessary that B holds of everything of which C holds [(since if it is true to say that it is not-white, it is also true to say that it is not white since it is impossible for it to be white and to be not-white at the same time or to be a not-white log and to be a white log, so that if the affirmation does not hold, the negation will).

(52a4) But C does not always hold of B since what is not a log at all will not be a not-white log either.

(52a6) Conversely, then, D of everything of which A (for either C or D of A, but since it is not possible to be not-white and white at the same time, D will hold; for it is true to say of what is white that it is not not-white).

(52a9) But A is not <said> of all D, since of what is not a log at all it is not true to assert A – that it is a white log –, so that D is true, but A – that it is a white log – is not true].

One or the other member of a simple contradictory pair (which is what A, B are) <holds> of everything, but both members <hold> of

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nothing at the same time, since it is impossible for the members of a contradictory pair to co-exist. And similarly, again, one or the other member of a non-simple contradictory pair (which is what C, D are) <holds> of everything, and it is impossible for both to <hold> of the same thing at the same time, since this is a contradiction and the nature of every contradiction is the same.

(51b41) And by necessity the simple negation, which is B and under which C is placed (B says 'A human being is not good'), applies to that of which the non-simple affirmation holds and is true. (We have called this affirmation, which is C, 'A human being is not-good', 'by transposition'.) For 'is not white' or 'is not good' is necessarily true of that of which it is true that it is not-white or it is not-good, since it is impossible for something to be white and to be not-white at the

30 same time. But if the simple affirmation A, which says 'is white' cannot be true of C, 'is not-white', its negation B, which says about it that it is not white will be true of it. For it was posited that either A or B applies to everything.

He makes clear that he is taking 'is white' and 'is not-white' not as propositions ['It is white' and 'It is not-white'] but as predicates in a proposition when he says 'It is a not-white log and it is a white log'.²³⁶

- 35 For things of this sort are whole propositions which have a subject term together with a predicate. He usually leaves out the subject term because the subject term in the four propositions set out is the
- 407,1 same, and the difference and the distinctness of the affirmative propositions with respect to one another and of the negations and affirmations with respect to the negations results from the different ways in which the predicate is taken.
 - 5 (52a4) However, C, the affirmation by transposition, does not always follow B, the simple negation. For the simple negation, which says 'is not a white log', can be true both of a log and of a non-log and of everything which is not white; in the same way it can also be true of things which do not exist at all, since these things aren't white either. C, the affirmation by transposition which says 'is a not-white
 - 10 log' is true of determinate things, since it is only true of logs which are not-white. For it posits that there is a log, and it is because of this that it is shown to be an affirmation. Therefore, when the negation is true of a non-log, the affirmation by transposition will not follow from it, since what is not a log at all cannot be a not-white log either, and this is what is signified by the affirmation by transposition, which says 'is a not-white log'.

(52a6) He shows that conversely there is an entailment in the case of A and D, which was placed under A, that is, in the case of the simple affirmation (that is A, which says 'is a white log') and the non-simple negation (that is D, which says 'is not a not-white log'). In the case of

20 B and C, B, the simple negation, always follows C, which was placed under B and is an affirmation by transposition. But C, which was placed under B, does not always follow B as antecedent. On the other hand, in the case of A and D the negation by transposition [D] always follows A, which is the simple affirmation. For D, 'is not a not-white log', is necessarily true of that of which A, 'is a white log' (which is 25only true of a log), is true. The demonstration that D follows A is this. C or D is true of everything, since they are a contradictory pair. Consequently one of C or D is true of A. But it is impossible that C be true of A; for B, the negation of A, follows C, and if C followed A, B, the consequent of C, would follow A, which is impossible; for it is not 30 possible to be white and not to be white at the same time, since a contradictory pair cannot co-exist, nor can they <hold> of the same thing at the same time. Therefore, D, which was placed under A, follows it as antecedent. For not being not-white is true of whatever is white. He has made use of the impossibility that C follows A as being obvious. A was posited as 'being white', C as 'being not-white', 35 but it is impossible for the same thing to be white and to be not-white at the same time.

(52a9) However, it is not the case that necessarily A <is said> of that of which D <is said>. For the negation by transposition D, which says 'is not a not-white log', is true of a non-log. For a wall is not a not-white log, and C, that is 'is a not-white log', cannot be true of it. 5 But it is necessary that either C or D be true of a wall. (He shows that the negation [D] is true using the proof that the affirmation [A] is not true, because what is meant by the negation 'is not a not-white log' is not immediately intelligible.²³⁷) But the simple affirmation A, which says 'The wall is a white log', is not true of that of which the negation 10 by transposition is true (the negation, which says, 'The wall is not a not-white log' is true of a wall).

Therefore, B follows C, and D follows A, but not vice versa. Consequently, the negations will follow the affirmations, the simple negation the affirmation by transposition and the negation by transposition the simple affirmation. But the affirmations do not follow the 15 negations because the negations are true of more things.

52a12-14 But it is clear that A, C do not hold of the same thing, and that it is possible for B and D to hold of the same thing.

He is now talking about the diagonally opposite items.²³⁸ For the affirmation A is diagonally opposite to the affirmation C, and the 20negation B is diagonally opposite to the negation D. He says that it is impossible for A. C to co-exist – these are the simple affirmation and the affirmation by transposition. For it is impossible for the same thing to be white and not-white at the same time. (Not-white is what is signified by the affirmation by transposition C.) He would now be speaking about determinate propositions.²³⁹ For these are what make

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25 a contradictory pair, since nothing prevents any indeterminate proposition from being true together with any other.

Obviousness is sufficient to make clear that the affirmations previously mentioned [A, C] cannot be true at the same time but not to make clear that their contradictory opposites [B, D] can be true at the same time.²⁴⁰ For the negation by transposition [D] follows the simple affirmation [A], so that the affirmation by transposition C and its

30 negation D will be true together. Again, since B, the simple negation, follows C, the affirmation by transposition, the simple affirmation A and its negation B will be true together. But these things are impossible.

However, he says that it is possible for the negations, the simple negation B and the negation by transposition D, to be true of something at the same time. For the affirmation by transposition C is not true of <all> the things of which the simple negation B is true, since

409,1 they do not convert,²⁴¹ but D, the negation by transposition, is necessarily true of these.²⁴² For either C or D is true of everything (since they are a contradictory pair), and C does not follow all B. Again, the simple affirmation A is not true of <everything> of which D, the negation by transposition, is true, since they do not convert, but its

5 simple negation B is true of these, since either A or B is true of everything. Consequently the negations [B, D] are true of some things at the same time. For both the simple negation, which says that it is not a white log, and the negation by transposition, which says that it is not a not-white log, are true of a wall. He also mentions this in *On Interpretation* in the passage²⁴³ which begins:

10 The situation is the same if the affirmation of the name is universal,

and ends:

However, it is not possible in the same way for the diagonally opposite propositions to be true,²⁴⁴ but it is possible sometimes.

For in the case of determinate contradictory pairs, which are contradictory pairs in the strict sense, it is not possible for all the diagonally opposite propositions to be true together, but it is possible for some of them to be sometimes. For, as he has just shown, the negations B, D, 'is not a white log' and 'is not a not-white log' can be true together.

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52a15-17 Privations have the same relation to predications with this arrangement.²⁴⁵ [Let A be equal, B not equal, C unequal, D not unequal.]

He is now speaking about something he mentions in On Interpreta-

tion. For there, having said that in propositions in which 'is' is co-predicated as a third item there are two contradictory pairs and four propositions, he added, 'of which two will be related in the listing 20to affirmation and negation as the privations are, and two will not'.²⁴⁶ And he now shows that the privative contradictory pair keeps the same position with respect to the simple pair in this arrangement and sequence as the contradictory pair by transposition does. He has either used the word 'predications' of the opposed predications and consequents because these things are related similarly to the opposed predications and consequents, or he is using it of the things which 25predicate affirmatively or negatively the simple thing of which the privations are privations, that is, of 'is equal' and 'is not equal'. For if we place the privative contradictory pair under the simple contradictory pair, the affirmation under the negation and the negation under the affirmation, the entailment relations will be the same in arrangement as that in the case of the contradictory pair by transposition set 30 out a little earlier. For the negations will follow the affirmations with which they are ordered, but the affirmations will not always follow the negations. For let 'is equal' be A, the negation of this, 'is not equal', be B, and let C, which is the privative affirmation of equality 'is unequal' ('unequal' is the privation of 'equal'), be placed under B, and 35 let D, 'is not unequal', the negation of the privative, be placed under A. Then the entailments of these things will be the same. For B, the 410,1negation of equality, will necessarily follow C, the privative affirmation. For either 'is equal' or 'is not equal' must be true when 'is unequal' is true: but it is impossible for something to be unequal and equal at the same time: therefore, the negation 'is not equal' is true. 5 But the privative affirmation 'is unequal', which is C, will not necessarily follow the negation B, 'is not equal'. For the privative affirmation C is not true of everything of which the simple negation is true. For a colour or a sound is not equal, but it is not unequal either. For, as he said before,²⁴⁷ the unequal is true of something determinate, 10 since it is true of a quantity.

The entailment relation between A and D is the converse. For D, the privative negation, will follow A, the simple affirmation, since what is equal is not unequal. However, the simple affirmation A will not necessarily follow the privative negation 'not unequal', since 'not unequal' is also true of non-quantities, but 'equal' is not.

52a18-24 And when in the case of several things the same thing holds of some and does not hold of others, the negation is true²⁴⁸ in the same way [because not all are white or because each is not white. But it is false that each is not-white or that all are not-white.

(52a22) In the same way the negation of 'Every animal is

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white' is not 'Every animal is not-white', since both are false, but 'Not every animal is white'].

He also shows that 'is not-this' and 'is not this' do not mean the same
thing on the basis of the fact that in the case of things in the same species of some of which a thing holds, of other of which it does not hold, these things²⁴⁹ are not true together. For if some human beings are white and others are not, 'Not all human beings are white' and 'It is not the case that each human being is white' are true, but 'All humans are not-white' or 'Each human is not-white' is not true. For the latter two mean the same thing as 'No human being is white', which is false.

(52a22) Furthermore if some animals are white and some are not, then the negation of the universal affirmative 'Every animal is white', which is false, is not 'Every animal is not-white' (This is false in the same way that 'Every animal is white' is since it says that no animal is white); rather 'Not every animal is white' is its negation, and it is

30 true. If this is so, then 'Every animal is not-white' does not mean the same thing as 'Not every animal is white'. And if it does not mean the same thing, it is not the same thing.

52a24-34 Since it is clear that 'is not-white' and 'is not white' mean different things, [and one is an affirmation, the other a negation, it is evident that they are not proved in the same way. For example, that whatever is an animal is not white or cannot be white²⁵⁰ and that it is true to say that it is not-white; for this is to be not-white. But 'It is true to say that it is white (or not-white)' is proved in the same way, since each is proved positively through the first figure. For 'is true' is ordered in the same way as 'is', since 'It is true to say that it is not-white'; rather 'It is not true to say that it is white 'is not true to say that it is white 'is not true to say that it is white' is not true to say that it is white 'is not true to say that it is white' i

- 35 He has shown through several considerations that 'is not this' and 'is not-this' do not mean the same thing, and that 'is not this' is a negation and 'is not-this' is an affirmation, and he infers as a conse-
- 411,1 quence of what has been shown what he was saying before, namely 'It makes some difference in establishing or refuting whether one supposes that "not being this" and "being not-this" mean the same thing or something different'.²⁵¹ That is to say, each of the two are not proved in the same way, but the negation is proved through <one>
 - 5 affirmative premiss, the affirmation from two affirmatives, and the affirmation is proved in the first figure, the negation in the second and the first.²⁵² He teaches us how this happens as he proceeds. What he has proposed to show is of this kind. It is also useful for the

analysis of syllogisms, since each of them will be analyzed in the same way as it is proved.

The text is unclear because neither the affirmative nor the nega-10 tive propositions have been taken in the customary way. For having said that they are not proved in the same way and wanting to set down the propositions and show that the manner of proving negations is one thing, that of proving affirmations another, he says, 'For example, that whatever is an animal is not white or cannot be white and that it is true to say that it is not-white; for this is to be not-white'. 15 He takes the example negatively²⁵³ as 'Whatever is an animal cannot be white', since the words 'cannot be white' are connected with 'whatever is an animal'. These propositions are equivalent to 'No animal is white' and 'No animal can be white', the first being universal negative unqualified, the second being universal negative 20necessary.

As I have said, one should supply 'whatever is an animal' before 'cannot be white' and the proposition becomes equivalent to 'No animal can be white'. In this way the proposition will be a negation, but if it is separated from 'whatever is an animal', it is also an affirmation ['It is possible that it is not white'].²⁵⁴ It is possible that 'It is possible that it is not white' is given as an example of an affirmation by transposition (just as what comes after it, 'and that it is true to say that it is not-white' is) and is equivalent to 'It is possible that every human being²⁵⁵ is not white'.

Whether he posits that proposition as negative or as an affirmation by transposition, the argument and proof is similar. In the case of the affirmation by transposition he uses 'It is true to say that it is not-white', and he explains what 'It is true to say that <it is notwhite>' means by adding 'For this is to be not-white', since 'It is true to say <that it is not-white>' is the same as 'It is not-white', and, as has been proved, this is affirmative. For he posits 'It is true to say that' instead of 'It is', as he will also make clear as he proceeds. For the modalities play the same role in propositions as 'is' does as far as producing an affirmation or negation. And 'true' is a modality.

And again this proposition might be 'It is true to say of whatever is an animal that this is not-white'; and this is equivalent to 'Every animal is not-white'.

So he says that negations, such as 'No animal is white' and 'No animal can be white' (if we may also understand this proposition as a universal negation) and the affirmation 'Every animal is not-white' will not be proved in the same way. However, the affirmations 'It is true to say that every animal is white' and 'It is true to say that every animal is not-white' (This is what is meant by 'or not-white'), which are respectively equivalent to 'It is white' and 'It is not-white', will be proved in the same way as each other. He sets down 'is white' alongside 'is not-white' in order to indicate that the latter, like the

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former, is an affirmation, so that their proofs will be the same. For since both of them are affirmations, they will be proved 'positively' –

- 10 that is, affirmatively in the first figure, since the universal affirmative is proved only in this figure. And one should understand 'It is true to say that it is white' and 'It is true to say that it is not-white' as universal, since what is missing from them is 'every animal', as he makes clear in what comes next.²⁵⁶ Having said that problems of this kind are affirmative and come to be in the first figure and through it.
- 15 he explains why the proposition which says 'It is true to say that it is white' is an affirmation and what it means. He says, 'For "is true" is ordered in the same way as "is" '. So 'It is white', which is an affirmation, is equivalent to²⁵⁷ 'It is true that it is white'. Or perhaps, since this is an affirmation, he reminds us again that 'It is true to say that it is not-white' is not a negation, but 'It is not true to say that it is
- 20 white' is, and 'It is true to say that it is not-white' is an affirmation, as is 'It is true to say that it is white'. Therefore they will be proved in the same way and through the same figure. And again, reminding us of what he has explained and explaining what 'It is true to say that it is not white' means, he adds that the proposition which says 'It is true to say that every animal is not white' is not a negation without
- 25 qualification or the negation of the proposition which says that every animal is white the negation of this being 'It is true to say that not every animal is white' or 'It is true to say that no animal is white'.²⁵⁸

52a34-7 If it is true²⁵⁹ to say that what is a human being is cultured or is not-cultured, one should take it that what is an animal either is cultured or is not-cultured, [and it has been proved].

- 30 Having said that one should prove a simple universal affirmation and a universal affirmation by transposition in the same way, through the first figure, he now describes how we can produce a proof and syllogism for each of them. What he says is the following. If we wish to prove that every human being is cultured or that every human being is not-cultured, we proceed as follows. The proposition 'It is true to
- 35 say that what is a human being is cultured' means 'Every human being is cultured', and 'It is true to say that what is a human being is not-cultured' means 'Every human being is not-cultured'. He says that in the proof of each of these one should take animal as the middle
- 413,1 term. And if we wish to prove that every human being is cultured we should take it that cultured is the major extreme predicated affirmatively of every animal and that human being is the last and minor term of all of which animal is predicated. Then the propositions will be 'Every human being is an animal', 'Every animal is cultured', and, what was the proposed conclusion, 'Therefore, every human being is
 - 5 cultured'. (One should not demand that the premisses which he uses

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be true, since he is using an example and a sketch of the formulation of how 'Every human being is cultured' and 'Every human being is not-cultured' are proved through two affirmative premisses.)

If it were proposed to us to prove that every human being is not-cultured, let there be again the same middle term, animal, let not-cultured the major, also be predicated affirmatively of animal, and let the last term be human being; and the propositions will be 'Every human being is an animal', 'Every animal is not-cultured' (This is also an affirmation), and 'Therefore, every human being is not-cultured'.

If 'Every human being is not-cultured' were a negation, this conclusion would not only be proved in the first figure, but also in the second when the <alleged> universal negative proposition 'Every human being is not-cultured' is converted.²⁶⁰ But as it is, it is proved only in the first figure.

It could be proved that 'Every human being is not-cultured' is not a negation from the fact that it does not convert. For although the proposition which says 'Everything lifeless is not-perceptive' is true, the proposition which says 'Everything which is not-perceptive is lifeless' is not true, but the particular proposition which says 'Something which is not-perceptive is lifeless' is true. As a result 'Every human being is not-cultured' is proved only in the first figure, and the clearest indication that the proposition by transposition is not a negation is that it does not convert.

52a37-8 And that what is a human being is not cultured is proved negatively [using the three modes we have discussed].

Having proved the affirmative 'Every human being is not-cultured' 25 only from two universal affirmatives in the first figure, he now shows in turn how and through what premisses the universal negative is proved. For 'What is a human being is not cultured' is equivalent to 'No human being is cultured'. He says that this is proved using the modes we have discussed. There are three of them. 30

There is one in the first figure, since the second mode in the first figure implies a universal negative, for example:

Every human being is an animal; no animal is cultured; no human being is cultured.

Or (if it were proposed to prove that no human being is lifeless):²⁶¹

Every human being is an animal; no animal is lifeless; no human being is lifeless. 15

35 In the second figure there are the first two modes, which consist of a universal negative and a universal affirmative, since both prove a universal negative conclusion. For example:

> Nothing lifeless is an animal every human being is an animal no human being is lifeless.

414,1 Or again:

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No human being is a horse every horse is prone to neigh no human being is prone to neigh.²⁶²

For again through these premisses a universal negative 'No human being is prone to neigh' is proved in the second figure.

52a39-b4 Without qualification when A and B are so related 5 that it is not possible for them to <hold> of the same thing at the same time, [but necessarily one or the other of them <holds> of everything, and likewise again C and D, and A follows C and does not convert with it, then D will also follow B and not convert with it. And it is possible for A and D <to hold> of the same thing, but not possible for B and C to].

He has turned back again to what he proved previously about the entailment relation of propositions, both those which contain a simple contradiction and those which contain one involving transposition. And he now proves in a more general way the entailment relation which he proved for such propositions; and he does not give the proof in terms of material content but only in terms of letters, with which it is his custom to give universal proofs.

- But he changes the diagram of the terms that he uses, so that he seems to be speaking of something different.²⁶³ For before A was first in position and D was placed under it, with B being the negation of A, and C the affirmation corresponding to D; and then B followed C and D followed A. Now he takes A, B as a contradictory pair, as before,
- 15 since 'it is not possible for them to <hold> of the same thing at the same time, but necessarily one or the other of them <holds> of everything' is true of a contradictory pair. Similarly C, D are also a contradictory pair, which he then took as a contradictory pair by transposition, but now he no longer places C under B, but under A, and he places D under B, since as they are arranged, a member of one contradictory pair will always follow a member of the other. And so then he took the negation in the contradictory pair by transposition

to be under the affirmation in the simple contradictory pair, and 20again he took the affirmation in the pair by transposition to be under the negation in the simple pair. But now he simply takes two contradictory pairs without distinguishing what they are, and in terms of them proves universally that if one member of a second contradictory pair follows one member of a first contradictory pair which is under consideration and does not convert with it, then the other member of the first pair will follow the other member of the second and not 25convert with it, since the entailment relation is converse. For either the affirmation follows the affirmation or the negation follows the negation or the affirmation follows the negation or vice versa; and the entailment relation of the remaining members of the contradictory pairs will be reversed, as he shows. For he simply hypothesizes that A, a member of the contradictory pair A, B, follows C, which is also a 30 member of the contradictory pair C, D, and he proves that conversely D, a member of the contradictory pair C, D, follows B,²⁶⁴ without further adding whether D is an affirmation or a negation or whether D is placed under B or not under it but under A or whether one contradictory pair is by transposition, the other simple, as was the case with the things proved a little while ago. And he proves that if the pair of consequents are true together, the pair of antecedents 35can<not>²⁶⁵ be true together – this was also proved in the case of the earlier contradictory pairs.

He says that universally (this is what is meant by 'without qualification') if two contradictory pairs, for example A, B and C, D, are taken, if one member of one contradictory pair follows one member of the other, for example, if A follows C, and does not convert with it so that C also follows A, then conversely the other member of the primary contradictory pair will follow the remaining member of the other, lower pair and will not convert with it. For D will follow B, but B will not follow D, if A follows C and does not convert with it.

As I have said, these things are what he proved earlier in the case of a simple contradictory pair and a contradictory pair by transposition, and similarly in the case of the privative and the simple contradictory pairs. But there he gave the proof in terms of a determinate material content, and now he gives a universal proof. And that is why he changes the arrangement of the letters. For B will no longer follow C, nor will D follow A, as he proved to be the case a little while ago, but universally whatever member and whatever sort of member of one contradictory pair one member of the other contradictory pair follows, if it does not convert with it, then, in turn, the remaining member of the other pair will follow the remaining member <of the first pair> and not convert with it.

But he has also proved what he says next, that some diagonally opposite things will sometimes be true together with one another, and others will not, since the antecedents [C, B] which the remaining two [A, D] follow will never be true at the same time. For otherwise a negation will be true together <with what it negates>, as has been proved a little while ago. But nothing prevents what follows these things from being true at the same time.

52b4-12 First, then, it is evident from the following that D follows B. [Since D is necessarily different from all of the Cs and it is not possible for C to <hold> of that of which B <holds> (because <C> brings A along with it and it is not possible for A and B to <hold> of the same thing), it is evident that D will follow .

(52b8) Again, since C does not convert with A, and C or D of everything, it is possible for A and D to hold of the same thing.

(52b10) But it is not possible for B and C <to hold of the same thing>, since A follows C, and something impossible results.]

He now proves what he put forward. He shows that when it is assumed that A follows C, D follows B; and he shows it in such a way that if it were assumed that C follows A and does not convert with it, conversely B would follow D.²⁶⁶ Here is the proof. Since C, D are a contradictory pair, it is also necessary that one of them hold of everything. But it is not possible for C to be true of that of which B is true, because A follows C. For A would follow B, and A and B would be true of the same thing at the same time, which is impossible. So it remains that D follows B.

(52b8) Again, since it is assumed that A follows C and does not
convert with it (since C does not follow A) and C or D <is said> of
everything, if C does not follow A because there is no conversion, then
D will follow <A>,²⁶⁷ so that A and D will be true at the same time.

If conversely C followed A and did not convert with it, B would also follow D and not convert with it, and the things which are true together would be C, B, and not A, D.

35 (52b10) But if A, D were true together, B, C would not be true of the same thing at the same time because A follows C and D follows B.²⁶⁸ And if B, C were true at the same time and it were assumed that

416,1 D follows B,²⁶⁹ C, D would be true at the same time. Similarly too, if B were assumed to follow C,²⁷⁰ A, B <would be true at the same time> (since A follows C), which is impossible, since A, B are a contradictory pair.

52b12-13 And it is evident that B does not convert with D either, [since it is possible for D and A to hold at the same time].

5 Having shown that D follows B if A follows C and that A, D can sometimes be true at the same time, if they are negations,²⁷¹ but B, C cannot be, if they are affirmations, he now proves the remaining item

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among the things which he proposed, namely that because A, C do not convert, B does not convert with D either. For it is not possible that B follows D. For since it has been proved that it is possible that D, A sometimes be true at the same time, if B followed D, then A, B would 10 be true at the same time when D, A were both true. For if B converted with D and followed it, both <B and A> will be true when D is. For B is true of something at a time when D is true of it, but it was assumed that A was true together with D at that time. Therefore A, B would also be true, but it is impossible for A, B to be true at the same time 15 – this was assumed.

52b14-34 It sometimes happens that one is misled in this sort of arrangement of terms because one does not take the opposites (of which it is necessary that one or the other hold of everything) correctly.

[(52b16) For example, if it is not possible for A and B to hold of the same thing at the same time, but it is necessary that one of them hold of anything of which the other does not hold, and likewise again for C and D, and A follows everything of which C holds. For it will result that B holds by necessity of that of which D holds, which is false. For let F be taken as the negation of A, B and, again, H as the negation of C, D.²⁷² It is necessary that either A or F holds of everything, since either the assertion or the negation holds. And again either C or H, since they are assertion and negation. And A is assumed to hold of everything of which C holds. Consequently H holds of everything of which F holds. Again since one or the other of F, B holds of everything, and likewise one of H, D, and H follows F, B will also follow D (for we know this). Therefore, if A follows C, B follows D.

(52b28) But this is false, since the implication relations were the converse in the case of things related in this way. For it is presumably not necessary that A or F holds of everything or again²⁷³ that F or B holds of everything, since F is not the negation of A; for 'not good' is the negation of 'good', since 'not good' is not the same as 'neither good nor not good'.²⁷⁴

(52b33) Similarly in the case of C, D, since two negations were taken.] $^{\rm 275}$

He has shown what the entailment relations of two contradictory pairs are, showing at the same time that if one member [A] of one pair [A, B] follows one member [C] of the other [C, D] and does not convert with it, then, in turn, the remaining member [D] of the other pair [C, D] will follow the remaining member [B] of the contradictory pair [A, B] the other member [A] of which followed the remaining member [C] of the other contradictory pair [C, D]²⁷⁶ and will not convert with it; for if A, B and C, D are two contradictory pairs and A follows C, but

30 C does not follow A, D will follow B and not convert with it, since B does not follow D. He now says that if the antitheses and contradictory pairs are not taken correctly in such a way that both members are not true of the same thing and one or the other is not necessarily true of everything, one might think that since A follows C B also follows D (this was shown to not be the case). ...²⁷⁷

(52b16) For if someone were to assume two contradictory pairs, A, B and C, D and assume that A follows C and does not convert with it, he might think that B follows D because of not making the antitheses correctly. For suppose he were to take F to be the negation of both A

- 417,1 and B at the same time, and similarly H to be the negation of both C and D; and suppose he then were to think that F is the negation of both A and B together and of each and make a contradictory pair with respect to each of them, both with respect to A by itself and with respect to B, and similarly for H with respect to C and D; and suppose
 - 5 he were to assume that, since A and F are a contradictory pair, one or the other of them necessarily <holds> of everything, and again that, since C and H are a contradictory pair, one or the other of them necessarily holds of everything; but it was assumed that A follows C; therefore H, the remaining member of the contradictory pair C, H, will follow F, the remaining member of the other contradictory pair
 - 10 A, F. For if A, F and C, H are contradictory pairs and A follows C, it remains that H follows F, as was proved a little while ago. These things being this way, again, since F, B and H, D are contradictory pairs, one or the other of each pair will necessarily hold of everything that is taken. But it is assumed that H follows F. Therefore, the
 - 15 remaining member of the contradictory pair F, B (this is B) will follow the remaining member D of the other contradictory pair H, D. Consequently, if it is assumed that A, which is the opposite of B, follows C, which is the opposite of D, B also follows D. But it was proved that when things are this way D will follow B, and B will not follow D.

(52b28) Resolving this and showing the source of the proof of the falsehood, he says, 'For it is presumably not necessary that A or F holds of everything or again that F or B holds of everything'. With

- 20 these words he says that the negation of both propositions together was incorrectly taken to also be the negation of each of them specifically. For F was taken to be the negation of things contradictorily opposite to one another. For A, B were 'good and not good',²⁷⁸ of which the negation F is 'neither good nor not good', and this is not the negation of either 'good' specifically or of 'not good'. For the negation
- 25 of 'is not good' is 'is not not good',²⁷⁹ not 'is neither good nor not good'. And these differ from one another. Consequently A, F and C, H were not properly taken as contradictory pairs. Similarly if A and B were 'equal' and 'not equal', their negation would be 'neither equal nor not equal'.

(52b33) The same argument also applies to C, D. For H was not the

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negation of each of these specifically, but of both together. For if <C, D> were 'unequal and not unequal', their negation would be 'neither 30 unequal nor not unequal'; and if they were 'noble and not noble' their negation would be 'neither noble nor not noble'; and if they were 'is not white and is not not white', their negation would be 'neither is not white nor is not not white'. For there are two negations in 'neither good nor not good' and similarly in 'neither equal nor not equal' and 418,1 in 'neither unequal nor not unequal'. But two negations cannot be the negation of one proposition or affirmation.

It could also be proved that such things are not contradictory pairs on the basis of the fact that the negations of both [A, B or C, D] are $\mathbf{5}$ always false together with one of the members of the contradictory pair. For the negation of both is always false of everything, since it is not possible for something to be not good and not not good at the same time. So whichever member of the contradictory pair is true, the negation of both together with the contradictory of the true one will always be false. Furthermore, if the negation of both is false of everything, when some one thing is antithetical to and makes an 10antithesis with each member of the contradictory pair of both of which it is the negation, each of them, both the affirmation and the negation, will be true.²⁸⁰ But if this is so, the contradictory pair will be true together, but also false together. For if 'good' and 'neither good nor not good' are a contradictory pair and 'being neither good nor not good' is false of that of which 'being good' is false, the contradictory 15pair will be false of the same thing at the same time. ...²⁸¹

He has laid out these things in a universal way to indicate that it is necessary to take antitheses and contradictory pairs precisely, since those who do not take them carefully will think that some things can be other than what they have been demonstrated to be.

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Notes

1. For a discussion of this chapter see section 4 of the Introduction to Mueller (2006).

2. 340,13-21 are Text 97 of Theophrastus: Sources.

3. Primarily in ch. 28.

4. Reading the *poiein* of the Aldine instead of the *poiei* printed by Wallies.

5. Alexander suggests that Aristotle also brings in the case in which the major rather than the minor premiss is left tacit. In the next paragraph he gives a rather strained exegesis of the words 'the premisses through which they are inferred' to support this suggestion. Starting at line 30 he gives a more plausible account of what Aristotle means and why he might have left out the case in which the major is tacit.

6. A quotation mark is missing in Wallies' line 11.

7. Here and in the next line Alexander uses *kath' hekasta* in a way in which he would usually use *en merei*, perhaps because he is thinking of premisses with an individual subject such as 'This person is a dandy'.

8. Reading hauté paraléphthéi; Wallies prints hauté paraleiphthéi, and reports the Aldine auté paraléphthéi.

9. On these reasons for adding premisses see An. Pr. 1.25, 42a22-4 with Alexander's comments at 278,26-280,8.

10. See An. Pr. 1.1, 24b20.

11. This argument comes from Plato *Phaedrus* 245C5 ff. The premiss which Alexander says is superfluous is a virtual quotation of C5-7.

12. The next lemma (at 346,7) includes all the words of this passage through the first occurrence of 'assumed'. See the notes on that lemma for two textual issues. The discussion after that lemma is of a more standard kind. Here Alexander is concerned with the 'unsystematically conclusive' arguments discussed by the Stoics. The lemma and Alexander's entire comment are Text 1092 of Hülser.

13. cf. 47a33-4 (347,15).

14. Alexander is thinking of the kind of case in which one infers, e.g., that all comedians are human from

All comedians laugh; all humans laugh.

This is not a valid syllogism, but for Alexander the conclusion follows necessarily because laughing is a *proprium* of human beings.

15. Alexander's discussion is marred here because he runs together the notions of having common parents and having a common father.

16. The word dokoun is troubling here, since Alexander believes that unsys-

tematically conclusive arguments do depend on the unstated universal premiss. Hülser translates as 'allem Anschein nach'.

17. Translating the *sullogizesthai* of the Aldine, our texts of Aristotle, and the lemma at 344,7, rather than the *sullelogisthai* of B, which Wallies prints here.

18. At 346,30 Alexander cites these words with a ti (components of something), not found in our texts of Aristotle. In another citation at 347,6 he does not have the ti.

19. Alexander clarifies Aristotle's eniôn as ep'eniôn.

20. Alexander quotes the second of Epicurus' 'Principal Doctrines' (Diogenes Laertius [Marcovich (1999)], 10.139).

21. In his commentary on the *Physics* (*CAG* 9, 115,11-13) Simplicius ascribes this formulation of Parmenides' argument to Theophrastus, but he mentions Alexander as the source of his information. Alexander discusses this argument again at 357,1-10.

22. Reading the *ti de kai* of the Aldine for the *to de ti* printed by Wallies.

23. The lemma has an *ara* which is not in our texts of Aristotle.

24. Wallies inserts the bracketed words on the basis of the text of Aristotle. Alexander cites them at 348,14-15.

25. This paragraph and all but the last two paragraphs of Alexander's commentary on the lemma are Text 1194 of Hülser.

26. See ch. 33 with Alexander's commentary (350,9-353,7) and ch. 41, 49b14-28 with Alexander's commentary (375,1-378,8).

27. At An. Pr. 1.1, 24b9; see also 350,11-18 below.

28. Here 'hypothesized' means something like 'assumed in a hypothetical form', e.g., as 'being a human being, it is necessary for it to be an animal'. With Alexander's remark see also 350,16-18.

29. See 47a10-12 (341,5 ff.).

30. Wallies prints a first *kai (kai katêgorêi kai katêgorêtai)*. It is found in B, but not in Aristotle or the Aldine.

31. I have moved the following paragraph from its position in Wallies' text immediately after the next lemma because it seems more relevant to what Alexander has been saying than to what he will go on to say.

32. An. Pr. 1.1, 24b19-20. The full formula is tethentôn tinôn heteron ti tôn keimenôn ex anankês sumbainei tôi tauta einai. Here the last three words are omitted, and in the next sentence Alexander paraphrases them with tôi tauta keisthai.

33. see 343,21-2.

34. cf. 348,29-32; Wallies' quotation mark in line 18 should be moved before the $t\hat{o}i$.

35. At 47a31-2 in the previous chapter (347,15). On the two proper names in this lemma see Ross ad loc. 351,27-8 shows that Alexander had no notion of who Mikkalos was. The problems involved in what Aristotle says in this lemma are well set out by Bäck (1987), 131-5. I discuss Alexander's treatment of Aristotle's two examples in section 4 of the Introduction.

36. At 47a31-5 in the previous chapter (347,15).

37. i.e. any Aristomenes can be thought at any time.

38. Alexander quotes 47a28-9 in the previous chapter (347,15). In that case the argument was turned into a categorical demonstration by adding a suppressed universal premiss, but in the present case the appropriate universal premiss is false.

39. Reading the *eilêptai* of the Aldine rather than the *eilêphthai* printed by

Wallies. In addition to that change I propose the following insertion in the text of the sentence:

di' hupotheseôs gar eilêptai kai to mê phtheiresthai <haplôs aurion Mikkalon kai to phtheiresthai> aurion mousikon Mikkalon kata to apoballein aurion tên mousikên.

40. This case does not seem to fit with the others discussed by Alexander; perhaps Alexander is supposing that we can't say that every animal is a genus.

41. On this chapter see section 5 of the Introduction.

42. The brackets are supplied by Wallies. The word *sumpeseitai* occurs in the Aldine and our text of Aristotle, but not in B.

43. Alexander apparently ignores Aristotle's words 'it is possible that A holds of no B'.

44. Alexander refers discretely to the controversy over first-figure combinations with a necessary major premiss and an unqualified minor. See also 355,18 and 356,22-4.

45. To make the premiss 'Sickness holds of every human being'.

46. See Alexander's remarks just above at 353,24-33.

47. For these words Ross prints en de tôi tritôi skhêmati kata to endekhesthai sumbainei to pseudos. The lemma stops with endekhesthai. At 355,35-6 Wallies prints sumbainei to pseudos after skhêmati. There the Aldine has the same order as Aristotle.

48. Alexander does not comment on this sentence, but Philoponus (CAG 13.2, 332,1-6) does. The reference appears to be to the alleged validity (cf. An. Pr. 1.20, 39a14-19) of Darapti₃ with two contingent premisses and a contingent conclusion, e.g.:

It is possible that health holds of every human being;

it is possible that sickness holds of every human being;

therefore, it is possible that health holds of some sickness.

There is, of course, no problem here if health and sickness are construed in terms of things corresponding to states.

49. Reading the *anomoion* of the Aldine for the *homologoumenon* printed by Wallies. Alexander is saying that in the third figure we do not have a case with an apparently necessary major premiss and a non-necessary conclusion, as in the first two cases considered by Aristotle.

50. Reading *epi keimenôi* rather than the *epei keimenôi* of B printed by Wallies (the Aldine has *epikeimenôi*), and retaining the *ho* bracketed by him.

51. Reading to with the Aldine rather than the $t\hat{o}i$ printed by Wallies, following B.

52. On this formulation of Parmenides' argument see the note on 346,19.

53. The two occurrences of 'all' marked with an asterisk are printed by Wallies following B; they are omitted by the Aldine, and do not seem necessary. The point made here is that, although what is other than substance is not nothing, what is other than all kinds of being is nothing; but the latter does not enable one to infer that being is one.

54. The argument which follows appears to be a representation of reasoning ascribed to Melissus of Samos; cf. Aristotle *SE* 5, 167b13-17 and 6, 168b35-40.

55. B and the Aldine have *ouk estai* where Aristotle has *ou keitai*. B has *onomasia* where Aristotle and the Aldine have *onoma*. Wallies prints the lemma of B.

56. I take Alexander's point in this example and the next to be that there are no names, so that looking for names is a distraction from analyzing the argument. Certainly there would be no difficulty in making up names.

57. Ross prints this difficult phrase as *hoti tôn amesôn esti sullogismos* ('that there is a syllogism of propositions for which there is no middle term'); at line 15 Alexander cites these words as *hoti tôn amesôn ho sullogismos*, and I have attempted to translate his words.

58. Here I adopt the suggested translation of a very helpful anonymous reader and retain the *tois boulomenois* of line 13, deleted by Wallies.

59. Bracketing the word monon in line 16.

60. Here B has a lacuna of c. 8 letters followed by $e \log os$. The Aldine has a lacuna of c. 18 letters followed by $\log ou$. It seems clear that the lacuna supplied the transition to the proof that every triangle has its angles equal to two right angles which Alexander gives.

61. cf. Elements 1.13.

62. Reading BG instead of the BGA printed by Wallies.

63. Filling a lacuna with *phaneron*, as suggested by Wallies.

64. The argument is the same as that of *Elements* 1.32, and seems to rely on the same figure. I repeat Alexander's argument here, putting clarifications in square brackets:



ABC is taken as a triangle, and the straight line BC is extended to E, and it is proved that the external angle C [=ACE] of the triangle is equal to the two angles [ABC, BAC] interior and opposite to it. For if CD is drawn through the point C parallel to BA, since AB and CD are parallel and a straight line AC has fallen on them, the alternate angles ACD and CAB are equal [*Elements* 1.29]. Again, since AB, CD are parallel and the straight line BE has fallen on them, the external angle [DCE] at C is equal to the internal and opposite angle B [Elements 1.29]. Therefore the whole angle C [=ACE], which is external to the triangle, is equal to the angles A and B of the triangle which are opposite to it. <It is evident> that if the angle [ACB] consecutive to the external angle C = ACE of the triangle is added in common to both the external angle [ACE] and to the angles opposite to it [A and B], the three angles of the triangle are equal to the two consecutive ones [ACB and ACE]. But the consecutive angles are equal to two right angles [Elements 1.13]. Therefore the three angles of the triangle are also equal to two right angles.

65. On this chapter see section 6 of the Introduction.

66. The lemma has a *te* where Aristotle has a *de*. Also the lemma has *ton prôton* and *touton* where Aristotle has *to prôton* and *touto*. I wish to record here my great indebtedness to a very careful and insightful reader of my translation of the next 20 pages.

67. ptôseis. This paragraph shows Alexander's assimilation of the standard Greek nomenclature for grammatical cases. In An. Pr. Aristotle does not use the

word ptosis in this specific sense until the end of this chapter (48b39 and 49a2 (364,20)). See the note on 366,3.

68. In this paragraph Alexander uses the terminology kath' hupokeimenon and en hupokeimenon derived from ch. 3 of Aristotle's Categories.

69. In the lemma and at 361,5 and 366,17 Alexander has *eipein touto* where Aristotle has *eipein auto touto*. In the latter passage Alexander also omits a *sêmainein* found in our text of Aristotle.

70. For following Alexander's discussion it is important to bear in mind that Aristotle is interpreting 'There is one knowledge of contraries' (tôn enantiôn esti mia epistêmê) as a matter of one knowledge holding of contraries. Alexander will take the terms of this proposition to be 'there is one knowledge' (mia esti epistême) and 'contraries' (ta enantia), where the term 'contraries' has to be in the genitive case in the proposition.

71. Alexander has an \hat{e} where Aristotle has a *kai*, but at 366,19 Alexander has *kai*.

72. The word 'knowledge' $(epist\hat{e}m\hat{e})$, which is found in most manuscripts of Aristotle, is excised by Ross, but Alexander clearly read it, and offers several weak explanations for its inclusion. A proper example would be the one resulting from Ross's excision:

(i) Wisdom is knowledge (i.e. knowledge is predicated of wisdom);

(ii) wisdom is of the good (i.e. has the good as its object);

(iii) therefore knowledge is of the good.

Here 'knowledge' is the major term, 'wisdom' the middle, and 'good', which is in the genitive case in the minor premiss and conclusion, the minor. At 361,29-31 (cf. 362,2) Alexander says that the example 'he' lays out is:

(ii') The understanding of the good is wisdom;

(i) wisdom is knowledge;

(iii') therefore the understanding of the good is knowledge.

'He' should mean Aristotle, but the example is not Aristotle's, and it would not ordinarily be taken as a case in which one of the terms ('wisdom', 'knowledge', 'understanding of the good') is in the genitive case. Perhaps the insertion of 'understanding' (gnôsis) is analogous to my explanation of 'wisdom is of the good' just given. (The reader of this portion of my translation has suggested that Alexander's point may be that 'the addition of *epistêmê* at 48b12 shows that a nominative/nominative predication is "discoverable" even when the term is in the genitive'.)

73. See the note on the next lemma.

74. Alexander devotes his first sentence to this remark, which really goes with the previous lemma.

75. cf. 360,3-7.

76. cf. 48b1 with 360,15-16.

77. Wallies prints de where our texts of Aristotle have $d\hat{e}$.

78. It is, I think, unfortunate that Alexander writes oukh huparkhein (here translated 'does not belong to' instead of the usual 'does not hold of') rather than oukh esti ('is not') because huparkhein takes the dative in any case and to A huparkhei tôi B can be used when B is A or of A or to A.

79. The lemma has hois where Aristotle has hosois.

80. At 364,26 Alexander says that this means that a negative conclusion is inferred. He wrestles with the word 'genus' starting at 364,33.

81. klêseis tôn onomatôn; see 365,36-366,4 with the note.

82. That is, 'needed' (deôn) and 'required' (ôphelimos) are synonyms.

83. In ch. 2 at 16a32-b1: "Of Philo" and "for Philo" and things of this kind are not names but cases of names.' However, at the end of the present lemma Aristotle indicates that the nominative is a case of a name, and Alexander, relying on more fully developed accounts of grammatical case, does the same in his comment here, while trying to represent Aristotle as holding a consistent position.

84. At 48b2-4 at the beginning of the preceding chapter.

85. Wallies prints the perfect *epeskephthai*, indicating that it is a correction by the first hand of B for the nonsensical *hepesthai*; *epeskephthai* is also the reading of the Aldine; the perfect could have a present sense, or one might read a present *episkeptesthai*.

86. In ch. 11.

87. 367,7-14 are Text 88 of Theophrastus: Sources.

88. On this chapter see section 7 of the Introduction.

89. See the note on 368,34.

90. Reading tês dikaiosunês for the tên dikaiosunên printed by Wallies.

91. The word hoti can mean either 'that' or 'because'.

92. cf. 49b6-9 in the next chapter (372,25).

93. Inserting $mon\hat{e}$ as in line 6.

94. That is, Aristotle's 'Justice is essentially good' means 'Goodness contains justice'.

95. Wallies rightly brackets the word *doxaston* here. It does not occur in the main manuscripts of Aristotle at 49a24, and what Alexander goes on to say suggests that he thought one should understand *doxaston* to be supplied. In his commentary on the *Prior Analytics* (*CAG* 13.2, 345,17-18) Philoponus, who supplies *doxaston* in his interpretation, says it has been left out of the text. The anonymous reader of this part of my commentary suggests that Alexander does not supply the *epistêton* indicated in the translation of the lemma because he thought one could only have opinion, not knowledge in the case of what is not.

96. Reading the *dedeigmenou* of B and the Aldine rather than Wallies' *dedeigmenon*.

97. See lines 4-6 above. The syllogism there runs in Greek:

ho tragelaphos mê on to mê on mê on hêi mê on tragelaphos ara mê on hêi mê on.

98. Our texts of Aristotle have *tode ti* here. The lemma has *ti tode*, which is what Alexander quotes at 369,34, 371,2, and 372,11.

99. See the preceding lemma.

100. Wallies' suggestion that one read ta in place of to seems correct.

101. The discussion in the remainder of this paragraph is made unnecessarily obscure by Alexander's constantly switching the terms he uses as examples. These two examples, in the first of which good is co-predicated or predicated in addition, in the second of which it is also duplicated, would suffice to illustrate everything Alexander says:

The choiceworthy is known *qua* good; justice is choiceworthy; therefore, justice is known *qua* good. The good is known *qua* good; justice is good; therefore, justice is known *qua* good.

It is to be noticed that Alexander substitutes 'X is known qua Y' for 'Of X it is known that it is Y'. This makes formal representation of the arguments simpler. Alexander discusses our passage as if there were no difference between the two formulations.

102. Not translating the words *en toutois tois sullogismois* ('in these syllogisms') which reduplicate in an awkward way the preceding 'in those conclusions'.

103. I add ê mê ton auton on the basis of line 13; cf. 369,15-24.

104. Alexander inserts a *hoper* which is not in the lemma, so that what Aristotle is saying is that one should transform 'What is judged is not the genus of what is believed' with the terms 'what is judged' and 'genus of what is believed' into 'What is believed is not essentially what is judged' with the terms 'what is believed' and 'essentially what is judged'.

105. This sentence and the last paragraph of the discussion of the present lemma constitute Text 1085 of Hülser.

106. At the beginning of ch. 35 (357,18).

107. I take Alexander to be saying that one who says that pleasure is good takes good to have a greater extension than pleasure, but one who identifies pleasure and goodness is saying that the things in the (alleged) greater extension are also pleasant.

108. This paragraph is difficult to render in English. Alexander is distinguishing between ho anthrôpos zôion ('Man is an animal', i.e. 'A man is a member of the species animal'), which is true, and ho anthrôpos to zôion ('Man is animal', i.e. 'Man (or a man) is identical with the species animal'), which is false. In the same way he distinguishes between the true $h\hat{e}$ khiôn leukon ('Snow is white') and the false $h\hat{e}$ khiôn to leukon ('Snow is whiteness'). My phrase '"animal" without the definite article' renders haplôs to zôion, and '"animal" with the article' renders to zôion.

109. This paragraph is Text 1198 of Hülser.

110. On this chapter see section 8 of the Introduction.

111. cf. An. Pr. 1.1, 24b28-30.

112. Alexander imagines the two formulations 'A holds of that of all which B holds' and 'A holds of that of some of which B' as major premisses in a first figure combination.

113. That is, as 'A holds of that of some of which B holds'.

114. Alexander's point is that Aristotle is not in doubt over whether beauty is true of everything white (presumably it isn't); he is only saying that B may not hold of all C when it is true that B holds of C.

115. The words 'of some' (*tini*) occur here in the lemma and in Alexander's citation at 376,34, but not in our text of Aristotle.

116. The words 'of C' (toi G) occur in none of the main manuscripts of Aristotle and are not printed by Ross.

117. A closing quotation mark is missing after *katholou* in line 36 of Wallies' text.

118. This paragraph relates to the next lemma, on which see the note.

119. The lemma agrees with our text of Aristotle in having *hou* ('of that of which B is truly said') here. But Alexander's discussion at lines 377,6-12 implies that Aristotle wrote *hotou*, which is what I have tried to translate.

120. In the words just preceding the lemma.

121. Disregarding a slight change in order, the two formulations are identical except that the first has an *ekeinou* where the second has Aristotle's *toutou*. It is tempting to substitute *kath' hotou* for *kath' hou pantos* in line 10.

122. I have translated:

ei mentoi to A legetai kath' hou an to B legêtai kata pantos, ouden kôluei <ei> tôi G huparkhei[n] to B, mê panti de, to A holôs [ê] mê huparkhein,

where the brackets indicate divergences from Ross's text. Normally the first words of the lemma through *pantos* are translated as 'However, if A is said of that of all of which B is said', but Alexander (377,23-6) reads the words as if *kata pantos* came after *legetai* rather than *legêtai*. After these words Ross's text of Aristotle would be translated:

Nothing prevents B from holding of C and A from not holding of all C or not holding of it at all.

That Alexander read the ei is shown most clearly by 378,4, that he did not have the \hat{e} by 377,28-9 (where Wallies supplies an ei). That he read *huparkhei* in place of the first *huparkhein* is shown by both passages.

123. I omit a few words in which Alexander says that *kath' hou an* differs from *kath' hotou an* just as *kath' hou* differs from *kath' hotou*. Aristotle uses *an* because *legêtai* in the lemma is subjunctive rather than indicative.

124. See the beginning of the chapter, 49b14-15 (375,1).

125. Inserting *tini* after the second 'A' in 378,1. Wallies, following an addition by the third hand of B, inserts *panti*, but this creates a redundancy. It seems that something has to be inserted since Alexander (cf. 375,17-19) thinks 'A of everything of some of which B' is equivalent to 'A of some B'.

126. Not translating Alexander's resumptive en dê tais toiautais.

127. kath' hou to B pantos, kat' ekeinou pantos to A <legesthai>, which Alexander apparently takes to be what Aristotle means by kath' hou to B pantos to A legesthai. In the next sentence he speaks of the difference as a matter of adding kata pantos to B. In the discussion of the next lemma he uses both Aristotle's formulation and what is said to be an equivalent in this lemma, kath' hosôn to B legetai, kata pantôn legesthai kai to A.

128. 378,12-23 and the entire discussion of the next lemma constitute Text 110A of *Theophrastus: Sources*. On prosleptic syllogisms see section 4 of the Introduction to Mueller (2006).

129. i.e. if the major premiss is 'A is said of everything of all of which B is said'.

130. On the difficulty of construing these examples see Smith ad loc; for Alexander's representation see 379,29.

131. Adopting Wallies' suggestion of reading ton noun for B's toutou en (the Aldine has touto).

132. Wallies brackets the words kai toutou elêphthê, hôs ekhei to empsukhon to zôion. kai and the last six of these words are omitted in the Aldine, which I have followed. So I read to d'hôs meros toutou elêphthê.

133. This sentence is difficult. I read *hôste* for *ho* and *hês* for *hôn*.

134. Wallies incorporates these words into the text, but indicates in his apparatus that they are a lemma ('incipit novum lemmation').

135. Alexander struggles to make Aristotle's description of the first figure apply to the other two.

136. The lemma has proskhrômetha where Aristotle has houtô khrômetha.

137. ton manthanonta legontes, the obscure received text of Aristotle, which Ross amends to ton manthanont' alegontes (in the interests of the learner'). There is no question that Alexander had the received text – he quotes it at 381,12-13 and 15-16, but it seems clear that he is more confident that the words mean that visible things are used as aids in the teaching of mathematics than he is about how to construe them.

138. On diagrams in syllogistic see Rose (1968), 133-6.

139. hôsper kai hoi huper tou aisthanesthai ton manthanonta legontes epi toioutôn.

140. This is a curious blend of logical terminology in which in a chain of three arguments, the first argument is called the antecedent, the second the middle, and the third the consequent. Alexander only uses the terminology in this section of the commentary.

141. Given a premiss XY another premiss is added from below if it is of the form XZ or YZ, and it is added from above if it is of the form ZX or ZY. If we have a premiss XY and we want to add a premiss from below to get a first figure syllogism we need to add YZ. But if XY is particular, as it will be if it is inferred in the third figure, adding YZ will not produce a valid first-figure syllogism.

142. Translating Ross's *tetagmena* rather than the *tetagmenon* printed by Wallies.

143. cf. ch. 32.

144. I have so translated *pros* because that is how Alexander understands it; contrast Ross ad loc.

145. Reading < hen > en for the *en* printed by Wallies. The *Topics* reference is to book 1, ch. 4.

146. As the Stoics do.

147. Alexander's syllogism is something like:

Potable holds of no sea; water holds of all sea; therefore, potable does not hold of all water.

148. In terms of the two definitions given Alexander is rejecting the use of first-figure syllogisms such as the following to refute them:

Nothing perishable is a god; every fiery body is perishable; therefore, no fiery body is a god.

No sea is potable; some water is sea; therefore, some water is not potable.

149. Reading $all \hat{o}i$ for the $aut \hat{o}i$ printed by Wallies. The third-figure syllogism envisaged by Alexander is:

Some temperance is not self-control; all temperance is a condition which masters pleasure; therefore some condition which masters pleasure is not self-control.

150. On this chapter see section 4 of the Introduction to Mueller (2006). 151. Alexander quotes this sentence with the plural $sullogism \hat{o}n$ at 386,9 where Aristotle has the singular sullogismou. 152. Aristotle's example is not entirely transparent. For a discussion of it and what Alexander says about it starting at 386,31 see section 9 of the Introduction.

153. An. Pr. 1.23, 41a39.

154. For the example see Plato, Meno 87B2-C7.

155. Again, An. Pr. 1.23, 41a39.

156. Alexander omits the word *kai*, which is in our texts of Aristotle.

157. This sentence is Text 112B of Theophrastus: Sources.

158. I have inserted this lemma to mark the transition from Aristotle's discussion of arguments from a hypothesis in general to arguments from impossibility.

159. See 260,18-261,19 in Alexander's comment on An. Pr. 1.23, 41a26-37.

160. Wallies prints episêmênai with B; Aristotle and the Aldine have diasêmênai.

161. This much of the paragraph is Eudemus Text 20 (Wehrli (1955)). The whole paragraph is Text 111E of *Theophrastus: Sources* and Text 1137 in Hülser. It is discussed in detail by Barnes (1985).

162. Alexander here refers to the five Stoic indemonstrables, for which see section 4 of the Introduction to Mueller (2006).

163. Moving Wallies' period in line 6 to after *proeirêmenôn*. For this suggestion of David Sedley see Barnes (1985), 139 n. 2. In n. 3 Barnes points out that the next sentence would be much easier if the word *protaseôn* were excised.

164. Alexander discusses the first three kinds of hypothetical arguments most explicitly at 262,28-264,31 in the commentary on ch. 23. He briefly discusses syllogisms from the more and the less and the similar at 265,30-266,2 in the commentary on ch. 23 and more fully at 323,17-328,7 in the commentary on ch. 29. At 266,2-3 Alexander says that Aristotle describes these syllogisms as involving quality. Since he nowhere has an explicit discussion of arguments from analogy, he may have only one kind of argument in mind here. However, Alexander does consider Aristotle's argument at 51b5-25 in ch. 46 to be based on an analogy; see, e.g., 397,27-8.

165. This paragraph is Text 1083 of Hülser.

166. The content of this chapter is described in section 10 of the Introduction.

167. The lemma has an where Aristotle has $\hat{e}n$.

168. These two syllogisms, $Baroco_2$ and $Bocardo_3$ are treated in chs 5 (27a37b1) and 6 (28b17-21) respectively.

169. Alexander quotes 47a5-8 of ch. 32 (340,4), omitting its last words hoti houtôs ekhei.

170. dekhetai. At 392,19-20 Alexander cites these words with epidekhetai.

171. At 50b25-30 in the previous lemma.

172. Wallies' period in line 9 should be replaced with a comma.

173. cf. 391,10-15.

174. i.e. 'All A are B' does not convert to 'All B are A'.

175. That is the universal affirmative converts to a particular affirmative, which is at least affirmative.

176. sugkhôrêtheiê is misprinted as sukhôrêtheiê.

177. See the next lemma.

178. The Aldine's *prôton* seems more likely than the *prôtou* printed by Wallies.

179. The lemma omits the word *sullogismôn*, which is in our text of Aristotle.

180. The lemma has anagetai, Aristotle analuetai.

181. Aristotle writes oukoun antistrepsei. At 394,7 Alexander cites these words as oukoun epei antistrephei, which I have translated.

182. Alexander again refers to 391,10-15.

183. The comma in line 15 should be a period.

184. Wallies prints *antestraptai*, where Aristotle and the Aldine have *antistreptea* (should be converted).

185. In the next lemma.

186. See 50b30-2 (392,3).

187. Ross prints todi with all the main manuscripts of Aristotle. The lemma has tode, as does Alexander at 397,15 and 411,3.

188. The lemma omits an \hat{e} which is found in our text of Aristotle and which Alexander has in a citation at 411,3

189. The difference between 'is not white' and 'is not-white' is the difference between *ouk esti leukon* and *estin ou leukon*.

190. Alexander cites this sentence at 399,14-16, where Aristotle's \hat{e} in lines 13 and 15 is replaced by a genitive construction.

191. It appears from 399,3 that Alexander's text was *esti dunamenos* badizein kai mê badizein, which is what I have translated. Aristotle's text reads *esti dunamenos ou badizein* \hat{e} mê badizein, on which see Smith ad 51b18.

192. It appears from 399,22 that Alexander's text had \hat{e} where our texts of Aristotle have kai. I have so translated.

193. At 399,29-30 Alexander cites these words with a ho which is not in Ross's text.

194. At 400,1-3 Alexander quotes these words as hôs (hôsper, Aristotle) oun ou tauton esti to mê epistasthai to agathon (tagathon) kai to (omit Aristotle) epistasthai to mê agathon.

195. In ch. 10.

196. These first two sentences are Text 87A of Theophrastus: Sources.

197. It is an instance of Barbara₁ when the terms are taken as 'imperceptive', 'not-living', and 'stone':

Every stone is not-living;

everything not-living is imperceptive;

therefore, every stone is imperceptive.

198. 'A stone is not-living' being read as the universal negative 'No stone is living' rather than as the affirmative 'Every stone is not-living'.

199. The middle term in the combination given in the note on 397,9 is 'not-living', but if the other combination just involves changing the minor premiss to 'No stone is living', then there are four terms and no middle. However, if we also change the major premiss to 'Everything perceptive is living' we get a valid syllogism with 'living' as middle term and the conclusion (Cesare₂) 'No stone is living'.

200. Alexander excludes cases such as 'It is possible that Socrates is not here', which is not the negation of 'It is possible that Socrates is here', although 'the negative particle is combined with the word "is" '.

201. I have tried to translate the *tôi pro tou 'esti' keimenou* of B rather than the *tôn pro tou 'esti' keimenôn* (something else which is posited prior to the 'is') of the Aldine printed by Wallies. What Alexander is trying to express is clear enough, but with either text how he expresses it is not.

202. Alexander cites an irrelevance here, since it is impossible for Socrates to be good and not-good at the same time.

203. That is, propositions in which the negative particle is attached to the predicate rather than the verb are not negations.

204. Lines 23-9 are a parenthetical interruption which I have translated at the end of this paragraph.

205. The words in angle brackets are inserted by Wallies.

206. The three Greek expressions all begin with the negative particle: *ouk esti leukon; ou dunatai badizein; ouk epistatai to agathon.*

207. In reading this whole chapter and Alexander's commentary, it is important to realize that an expression like *dunatai* $m\hat{e}$ badizein can be rendered by either the phrase 'can not-walk' or the proposition 'He can not-walk'. I have not found it desirable to maintain a uniform translation.

208. Here Alexander appears to cite Aristotle's *tauta ge hama huparxei tautôi* as *tauta ge dê hama huparkhei tôi autôi*, but just below at line 31 he cites the words with *huparxei*.

209. These words are inserted by Wallies.

210. Wallies' lemma omits a to included in our text of Aristotle.

211. This remark of Aristotle's leads Alexander (who takes no account of the fact that equality and inequality are relations) to say that 'is not equal' is true of non-existent things, whereas 'is not-equal' (or equivalently 'is unequal') is only true of existing things which are unequal. He concludes that it is true of everything – existing or not – that either it is equal or it is not equal, but only true of everything which exists that either it is equal or unequal. Aristotle avoids these dark possibilities by shifting in the next lemma from 'equal' to 'white log'.

212. The lemma has *ei oun kata pantos hê phasis ê hê apophasis alêthês*, which is also what Alexander cites at 401,26; Ross prints *ei oun kata pantos henos ê phasis ê apophasis alêthês*.

213. The insertion of an *ou* (not in Wallies) before *leukon* in line 33 is required.

214. oukhi Sôkratês esti leukos. 402,1-405,16 are Text 921 in Hülser. I discuss them in section 11 of the Introduction.

215. houtos peripatei.

216. That is, 'He is walking' and 'He is not walking', said of a female.

217. That is, 'It is not the case that he is walking' is true when said of a female and 'It is not the case that the teacher Kallias is walking' is true if Kallias is not a teacher.

218. The two equivalents are estin ho deiknumenos houtos, hos ou peripatei and esti tis Kallias grammatikos, hos ou peripatei.

219. Presumably at different times.

220. That is, in affirmative propositions.

221. As in the Stoic negations introduced at 402,4-8.

222. to Sôkratê tethnanai. The point is apparently that the verb is tensed and 'Socrates' is in the accusative.

223. That is, the (true) propositions about the future and the past.

224. to on esti. Here Alexander takes to on as a name.

225. kata touto, apparently meaning something like 'given that it exists'.

226. Behind this proposed transformation is perhaps the idea that we can say that what does not exist does not exist only if there is some sense in which what does not exist does exist.

227. Into, e.g., 'Gods, who exist, exist'.

228. That is, the necessity of 'Everything which runs moves' does not mean that something which is running exists.

229. Attempting to translate the to $m\hat{e}$ huparkhein hôi legetai touto huparkhein of the third hand of B. Wallies prints to hôi legetai touto huparkhein $m\hat{e}$ huparkhein. In any case the sentence is obscure and should perhaps be under-

stood along the lines of Hülser's (p. 1171) paraphrase by adding the words 'in the unnegated assertion' to the end of the sentence.

230. Adopting a suggestion of Jacques Brunschwig reported by Hülser (p. 1172) and reading *ou Sôkratês periepatêse* for Wallies' *Sôkratês ou periepatêse*, and taking 'Not-Socrates' to be an indefinite name referring to everyone but Socrates. Aristotle speaks of 'not-man' (*ouk anthrôpos*) as an indefinite name at *Int.* 10, 19b8-9.

231. In ch. 11 Aristotle, however, does not use the word 'transposition' in the way Alexander does.

232. Alexander has an $\hat{e}d\hat{e}$, not printed by Minio-Paluello (1949).

233. Int. 10, 19b19-31.

234. Here is a diagram:

A.	(A human being) is good	В.	(A human being) is not good
	(simple affirmation)		(simple negation)

D. (A human being) is not not-good C. (A human being) is not-good (negation by transposition) (affirmation by transposition)

Alexander says that D follows from A and B follows from C, but not vice versa. 235. Here Aristotle has *huparxei* where the lemma has *huparkhei*.

236. esti xulon ou leukon kai esti xulon leukon. Alexander is apparently referring to Aristotle's words adunaton ... einai xulon ou leukon kai einai xulon leukon, although they are not good illustrations of the difference he is referring to since, for example, esti xulon ou leukon might be rendered 'It is a not-white log' or 'is a not-white log'; see also the note on 399,20.

237. Alexander is bothered by the fact that Aristotle appears to move directly from 'A is not true of X' to 'D is true of X' when, for example, both 'good' and 'not not-good' are false of a bad person. Aristotle should simply argue that, e.g., a wall is neither a white log nor a not-white log.

238. See the diagram in the note on 406,12.

239. That is, propositions with a determinate subject such as this log. 'It is white' and 'It is not-white' can be true together if they are about different 'its'.

240. Alexander proceeds to argue that A and C cannot be true together. For suppose they are. Then since A implies D, C and D can be true together, but they cannot. He gives a similar argument based on the fact that C implies B, and A and B cannot be true together.

241. That is, although everything which is not-A is not A, not everything which is not A is not-A. The arguments Alexander gives may be summarized as follows: (i) some things are B but not C; these things are D since everything is C or D; so some things are B and D. (ii) some things are D but not A; these things are B since everything is A or B; so some things are B and D.

242. That is, D is true of all things of which C is not true.

243. Int. 10, 19b32-6.

244. Alexander has alêtheuesthai with some MSS of Aristotle. Minio-Paluello (1949) prints sunalêtheuesthai.

245. See the diagram in the note on 406,12. Now 'equal' is substituted for 'good' in A and B, 'unequal' for 'not-good' in C and D.

246. Alexander quotes and paraphrases *Int.* 9, 19b19-24. In the next sentence he points out that 'is unequal' and 'is not unequal' are related to 'is not equal' and 'is equal' as 'is not-white' and 'is not not-white' are to 'is not white' and 'is white'.

247. See 51b25-8 with Alexander's comment at 400,20-37.

248. The lemma has *alêtheuei* (so does Philoponus in a citation at *CAG* 13.2, 378,21), our texts of Aristotle *alêtheuoit* an.

249. Reading *tauta* for the *ta auta* printed by Wallies. These things are 'is not-this' and 'is not this'.

250. Aristotle writes endekhetai $m\hat{e}$ einai leukon, which is most simply translated 'it is possible that it is not white'. For Alexander, following what Aristotle says in ch. 12 of *Int.*, this is not a negation like 'It is not possible that it is white', but an affirmation by transposition. Alexander prefers a reading in which the 'it' in 'it is white' picks up 'whatever is an animal' and the whole phrase endekhetai $m\hat{e}$ einai leukon is understood as 'Whatever is an animal cannot be white'. Hence my translation here.

251. That is, Aristotle is now establishing what he asserted at 51b5-7 at the beginning of the chapter (396,31).

252. Alexander takes Aristotle to be talking only about universal propositions.

253. Wallies prints to *†* gar apophatikas and notes Diels' conjecture to paradeigma apophatikôs, which I have translated.

254. See the note on the lemma.

255. Alexander supplies 'human being' as an arbitrary subject replacing 'it'.

256. Alexander appears to be referring to the next lemma.

257. A single quotation mark before *alêthes* in 412,17 is missing.

258. This sentence is curious because it corresponds to nothing in our text of Aristotle at this point; it is also tempting to bracket the words \hat{e} ouden $z\hat{o}ion$, since 'No animal is white' is not the negation of 'Every animal is white'.

259. The lemma has *estin*, as do all the MSS of Aristotle. Ross prints *estai* (If it is to be true); see his note ad loc.

260. Being understood as 'No human being is cultured'.

261. Alexander is apparently worried about the falsehood of major premiss and conclusion in the first example.

262. This example is incorrect, as can be seen by substituting animal for prone to neigh. The second premiss should be 'Everything prone to neigh is a horse', which yields 'No human being is prone to neigh' (Cesare₂, the mode used in the previous example) or 'Nothing which is prone to neigh is a human being' (Camestres₂).

263. Alexander compares Aristotle's use of letters here with those used in a diagram like that of the note on 406,12. What he points out is essentially that Aristotle has interchanged the assignments to 'A' and 'B', although Aristotle is now speaking in a more general way.

264. The morion hepomenon of the Aldine is easier than the hepomenon morion printed by Wallies.

265. An *ou* has to be inserted here, as the end of the lemma and the passage to which Alexander refers $(52a12-14 \ (408,17))$ show.

266. That is, Aristotle could prove in the same way that 'when A and B are so related that it is not possible for them to hold of the same thing at the same time, but necessarily one or the other of them holds of everything, and likewise again C and D, and C follows A and does not convert with it, then B will also follow D and not convert with it'. (See also 415,33-4.) The proof which follows might be stated more clearly in this way. Anything which is B must be C or D (because anything must be C or D); but it cannot be C because anything which is C is A and nothing can be A and B; therefore anything which is B must be D.

267. That is, something which is A but not C will be D, since it must be C or D.

268. The argument is not well stated. The point is that B, C cannot be true together because B implies D and C, D cannot be true together.

269. Wallies prints 'B follows C', of which I cannot make sense. With my change we have a second argument that B, C cannot be true together.

270. A better formulation would be 'if B and C were true at the same time'.

271. Alexander's talk of negations and affirmations goes back to the less general presentation of this material starting at 51b36 (405,17), and is inappropriate here.

272. Aristotle is here introducing a false assumption that F is the negation of A and of B, and H the negation of C and of D; see Alexander at 416,39. At 418,6 Alexander points out what Aristotle never mentions, namely that F and H are each true of nothing.

273. In a citation at 417,19 Alexander has *ê palin* where our texts of Aristotle have *oude*.

274. What Aristotle says in this example makes sense only if *ouk agathon* is taken to correspond to 'is not good' and not to 'is not-good', since the former is and the latter is not the negation of 'is good'.

275. The lineation of p. 416 in Wallies' edition is incorrect. Lines 25-39 should be 20-34, but I shall use the incorrect lineation for ease of reference.

276. Retaining the *tês heteras antiphaseôs* bracketed by Wallies and inserting before it *tôi kataleipomenôi moriôi*.

277. I have not been able to make sense out of the next sentence, which might be translated:

For the simple negation 'not being white' does not always follow 'being not-white', which [most plausibly 'not being white'] always follows it [most plausibly 'being not-white'] as he proved, but it [most plausibly 'not being white'] might be thought to follow if the contradictory pairs were not taken correctly.

The problem is, of course, that 'not being white' does follow from 'being notwhite'. Perhaps an incorrect explanatory gloss has intruded.

278. Again Alexander refers back to 51b36 (405,17).

279. Here *ouk estin ouk agathon* is not the negation of 'is not-good' but of 'is not good', i.e. it is equivalent to the affirmation 'is good'.

280. The point of this sentence seems to be that since, say, **F** is the negation of both A and B and it is false, both A and B will be true.

281. Following the Aldine in omitting the words *kath' hou de hê antiphasis* (obelized by Wallies).

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Appendix

The Stoics in this Part of the Commentary

Alexander refers to the Stoics as hoi neôteroi three times in this part of the commentary, the first time at 345,13, where he begins to discuss the arguments they call unsystematically conclusive; 344,7-346,6 are Hülser Text 1092. There is parallel material in 347.15-348.23, which constitute Hülser Text 1194, although neither the Stoics nor unsystematically conclusive arguments are explicitly mentioned. At 373,29 Alexander assigns a distinction between 'if A then B' and 'B follows from A' to hoi neôteroi, 'who stick closely to the way things are expressed and not to what the expressions mean'; 373,18-20 and 28-35 constitute Text 1085 of Hülser. At 374.21-35 (Hülser Text 1198) Alexander describes a failed counterexample to the argument involving three conditionals. In 389,31-390,9 (Hülser Text 1137) Alexander discusses hypothetical syllogisms generally, mentioning the indemonstrables of the Stoics. He goes on in 390,9-19 (Hülser Text 1083) to contrast the view of hoi neôteroi with the view that hypothetical arguments are conclusive without being syllogisms. 402,1-405,16 (Hülser Text 921) is a lengthy discussion and criticism of the view of some people that negation is a propositional operator and does not attach to the copula or the predicate.
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Textual Questions

(a) Textual suggestions

I list here places in which I have translated a passage by Alexander using a text different from the one printed by Wallies. In many cases notes on the line in the translation provide more information.

- 340,29 For poiei read poiein.
- 342,11 Insert a quotation mark before moikhos.
- 342,34 For paraleiphthêi read paralêphthêi.
- 346,35 For to de ti read ti de kai.
- 350,18 Move quotation mark from before *tauta* to before *tôi*.
- 351,33 For eilêphthai read eilêptai.
- 351,33 Insert haplôs aurion Mikkalon kai to phtheiresthai after phtheiresthai.
- 355,25 For homologoumenon read anomoion.
- 356,22 For epei read epi.
- 356,23 Retain the ho bracketed by Wallies.
- 356,24 For *tôi* read *to*.
- 358,13 Retain the tois boulomenois bracketed by Wallies.
- 358,16 Bracket the word *monon*.
- 359,3 For BGA read BG.
- 359,10 Insert *phaneron* in the lacuna marked by Wallies.
- 367,36 For tên dikaiosunên read tês dikaiosunês.
- 369, 9 For dedeigmenon read dedeigmenou.
- 370,2 For the first to read ta.
- 371,4 Insert ê mê ton auton after auton.
- 378,1 For the *panti* inserted by Wallies read *tini*.
- 379,34 For toutou en read ton noun.
- 380,13-14 For the bracketed words kai toutou elêphthê, hôs ekhei to empsukhon to zôion read toutou elêphthê.
- 380,21 For ho read hôste.
- 380,22 For hôn read hês.
- 380,24 The words *hôste oude ginetai sullogismos* are a lemma (49b49-50a1).
- 384,28 Insert hen before the first en.
- 385,37 For *autôi* read *allôi*.
- 390,6 Remove the full stop after *sumplokês*. Replace the comma after *proeirêmenôn* with a full stop.
- 392,9 Replace the full stop with a comma.
- 392,33 For sukhôrêtheiê read sugkhôrêtheiê.
- 393,20 For prôtou read prôton.
- 394,15 Replace the comma with a full stop.
- 397,19 For tôn ... keimenôn read tôi ... keimenou.
- 401,33 Insert an *ou* before *leukon*.

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404,36	For to hôi legetai touto huparkhein mê huparkhein read to mê hu- parkhein hôi legetai touto huparkhein.
405,13-14	For Sôkratês ou read ou Sôkratês.
410,21	For ta auta read tauta.
411,16	For gar apophatikas read paradeigma apophatikôs.
412, 17	Insert a quotation mark before <i>alêthes</i> .
414,31	For hepomenon morion read morion hepomenon.
414,36	Insert ou before sunalêtheusonta.
416,1	For <i>B tôi G</i> read <i>D tôi B</i> .
416,28	Retain the bracketed <i>tês heteras antiphaseôs</i> and insert before it <i>tôi kataleipomenôi moriôi.</i>
416,34-7	Bracket the sentence starting <i>tôi gar einai</i> and ending <i>lêphthôsin</i> as an incorrect explanatory gloss.
418,17	Bracket the obelized words kath' hou de hê antiphasis.

(b) Alexander's citations of Prior Analytics 1.32-46

I list here places in which in Wallies' text Alexander appears to cite a passage in *Prior Analytics* 1.32-46 in a form which differs from the text printed by Ross. I do not mention cases in which Alexander cites a passage in more than one form if one of them agrees with our text of Aristotle. I have paid no attention to variations with respect to elision or minor difference in spelling.

Ross		Wallies	
48a18-19	kata to endekhesthai	355,35	sumbainei to pseudos
	sumbainei to pseudos		kata to endekhesthai
48a33	esti	358, 15	ho
48b3	auto touto	361,5	touto (also 366,17)
48b4	sêmainein	366,17	omit
48b12	omit (against the MSS)	362,1-2	epistêmê after the second sophia
49a28	tode ti	369,34	<i>ti tode</i> (also 371,2 and 372,11)
49b21	monon	376, 34	tini monon
49b25-6	legetai kath' hou an to B	377, 23-6	legetai kata pantos kath'
	legêtai kata pantos		hou an to B legêtai
49b26	kôluei	378,4	kôluei ei
49b26	huparkhein	377,29	huparkhei (also 378,4)
49b27	ê	377,29	omit
50a2	ton manthanont' alegontes	381, 12-13	ton manthanonta
	(conjecture)		legontes (also 381,16)
50a18	sullogismou	386,9	sullogismôn
50a27	kai	388, 13	omit
50b31	dekhetai	392, 19-20	epidekhetai
51a4	antistrepsei	394,7	epei antistrephei
51b7	todi	397, 15	<i>tode</i> (also 411,3)
51b18	ou badizein ê	399,3	badizein kai
51b19	kai badizein kai	399,22	badizein ê
51b20	epistêmôn	399,29	ho epistêmôn
51b22	hôsper	400,1	$h \hat{o} s$
51b23	epistasthai	400,2-3	to epistasthai
51b32-3	henos ê phasis ê apophasis	401,26	hê phasis ê hê apophasis
52b30	oude	417,19	ê palin

(c) Alexander's citations of other texts

I list here places where a citation by Alexander of a passage in a text other than *Prior Analytics* 1.32-46 differs from a standard edition of that text. I have paid no attention to variations with respect to elision or minor difference in spelling.

Aristotle, On Interpretation

Minio-Paluello (1949)		Wallies	
19b20	dikhôs	405,31-2	êdê dikhôs
19b36	sunalêtheuesthai	409,11	alêtheuesthai

(d) Lemmas

I list here places where the text of a lemma as printed by Wallies differs from Ross's text of Aristotle. In many cases notes on the line in the translation provide more information. I have paid no attention to variations with respect to elision or minor difference in spelling. I note that the lemmas contain approximately 10% of the text discussed by Alexander.

Ross		Wallies	
47a23	sullogizesthai	346,8	sullelogisthai
47a25	omit	346,30	<i>ti</i> after <i>esti (estin</i> in Aristotle)
47a29	omit	347,16	ara before ontos
47a40	omit	349,1	kai after oun
48a30	ou keitai onoma	357,19	ouk estai onomasia
48a40	de	359,15	te
48a40	to prôton touto	359,15	ton prôton touton
48b3	auto touto	360,23	touto
48b27	dê	363,32	de
48b34	hosois	364,20	hois
49a28	tode ti	369,28	ti tode
49b21	omit	376,18	tini before monon
49b22	omit	376,20	toi G after huparkhein
50a1	houtô khrômetha	381,3	proskhrômetha
50a2	ton manthanont' alegontes	381,4	ton manthanonta legontes
	(emendation)		
50a9	tetagmena	384,2	tetagmenon
50a40	diasêmênai	389,30	episêmênai
50b6	ên	390,21	an
51a1	sullogismôn	393,30	omit
51a2	analuetai	393,30-1	anagetai
51a23	antistreptea	395,2	antestraptai
51b6	ê tauton	396,32	tauton
51b7	todi	396,32	tode
51b25	to mê	400,18	mê
51b32-3	henos ê phasis ê apophasis	401,14	hê phasis ê hê apophasis
51b39	huparxei	406,15	huparkhei
52a19	alêtheuoit' an	410,18	alêtheuei
52a34	estai (emendation)	412,27	estin

English-Greek Glossary

This glossary gives standard Greek equivalents for many nouns, verbs, adjectives, adverbs, phrases, and a few prepositions in the translation. Many Greek words which occur only once are omitted, although an effort has been made to include all logical terms. I have not included very common words, such as *einai*, *ekhein*, and *legein*. The reader will get a better sense of the range a Greek word by looking at the Greek-English Index for the word and ones closely related to it.

able, be (v.): dunasthai able, be (v.): endekhesthai absolutely: haplôs absurd: atopos absurdity: atopia accident: sumbebêkos accusative (case): aitiatikos activity: energeia add (v.): epipherein, proslambanein, prostithenai added, be (v.): proskeisthai addition: prosthêkê admit (v.): epidekhesthai adulterer: moikhos advantageous: sumpherôn advise (v.): parainein affirmation: kataphasis affirmative: kataphatikos again: *palin* agree (v.): homologein, sunkhôrein, suntithenai agree beforehand (v.): prodiomologeisthai agreement: homologia, sunthêkê all, at: holôs always: katholou, pantôs ambiguous: dittos, amphibolos analogous: analogon analogy: analogia analysis: analusis analyze (v.): analuein anaphorically: kat' anaphoran, pros anaphoran angle: gônia

animal: zôion antecedent (n.): hêgoumenon, proêgoumenon antithesis: antithesis antithetical, be (v.): antithesthai appear (v.): phainesthai appropriate: oikeios argue (v.): dialegein argument: logos arrangement: taxis, thesis ask (v.): erôtan assent (v.): sunkhôrein assertion: phasis assertoric: apophantikos assimilate (v.): epharmozein assume (v.): *lambanein* assume in addition (v.): proslambanein assumed, be (v.): hupokeisthai, keisthai assumption: *lêmma* assumption, additional: proslêpsis attend (v.): blepein attention, pay (v.): paraphulattein away with, do (v.) anairein beautiful: kalos below, from: katôthen biped: dipous body: sôma built, be (v.): oikodomeisthai

capacity: dunamis case (grammatical): ptôsis case, in any: pantôs categorical: katêgorikos category: katêgoria cause: aitia, aitios cease (v.): paulan ekhein censure (v.): aitiasthai change (v.): hupallassein change: kinêsis changed, be (v.): kineisthai character, have a (v.): peponthenai choiceworthy: hairetos choose (v.): prokheirizesthai clarity: saphêneia clear, make (v.): dêloun clear: dêlos, enargês, saphês cloak: khlaumus co-exist (v.): sunuparkhein co-predicated, be (v.): proskatégoreisthai coincide (v.): epharmozein color: khrôma combination: sumplokê, suntaxis, sunthesis, suzugia combine (v.): sumplekein, suntassein, suntithenai commensurable: summetros common: koinos compatible, be (v.): epharmozein composed, be (v.): sunkeisthai composite (adj.): sunthetos composite (n.): sunthesis composite, be (v.): sunkeisthai conclusion, reach a (v.): perainein conclusion: sumperasma conclusive: perantikos condition: hexis conditional: sunnêmmenon connected, be (v.): sunaptesthai consecutive (geometric term): ephexês consequent: akolouthia, hepomenon consideration, be under (v.): prokeisthai considered, be (v.): keisthai contain (v.): periekhein, ekhein contingent, be (v.): endekhesthai contradiction: antiphasis contradictory: antiphatikos contradictory pair: antiphasis contrary: enantios contribute (v.): suneispherein, suntelein converse (v.): dialegein converse: empalin

conversely: anapalin conversion: antistrophê convert (v.): antistrephein convey (v.): apostellein cool (v.): psukhein coordinate (v.): suntassein correct (adj.): hugiês correctly: kalôs correspond (v.): hupakouein cosmos: kosmos courageous: and reios credibility: pistis credible: pistos credible, make (v.): pistousthai culture: mousikê cultured: mousikos customary: sunêthês dandy: kallôpistês dative (grammatical case): dotikos deduce (syllogistically): sullogizesthai defective: mokhthêros define (v.): horizein definiendum: horiston definiens: horismos definition: horismos, horos demonstrable: apodeiktos demonstrate (v.): apodeiknuein demonstration: apodeixis deny (v.): apophaskein (Alexander), aparnêsthai (Aristotle) describe (v.): hupographein description: hupographê deserving: axios destroyed, be (v.): phtheiresthai determinate: hôrismenos diagonal: diametros

diagonally opposite: diagônios, kata diametron diagram: diagramma, katagraphê die (v.): apothnêskein difference: diaphora different: alloios, diaphoros differentia: diaphora discover (v.): heuriskein discovery: heuresis discussion: logos disjunction: diezeugmenon disjunctive: diairetikos disposed, way of being: diathesis dissolve (v.): dialuein distinguish (v.): apokrinein, diorizein, khôrizein

divide (v.): diairein division: diairesis draw (v.): katagraphein duplicated: anadiploumenos, epapanadiploumenos duplication: epanadiplôsis earlier: emprosthen, prosthen easy to follow: euparakolouthêtos easv: rhadios encompass (v.): perilambanein entailment (relation): akolouthia equal: isos equivalent: isodunamos, isos equivalent, be (v.): ison dunasthai establish (v.): kataskeuazein establish together (v.): sunkataskeuazein establishing (n.): sustasis establishing: kataskeuastikos even (in number): artios evidence: pistis evidence, offer (v.): pistousthai evident: phaneros examine (v.): epiblepein example: paradeigma example, for: hoion exceed (v.): huperekhein exemplar: paradeigma existing previously: prouparkhôn explain (v.): didaskein, exêgeisthai explanation: logos expression: lexis, phônê external: ektos, exôthen extreme: akros

fallacy: paralogismos false: *pseudos* false assumption: paralêpsis false together, be (v.): sumpseudesthai fault, find (v.): aitiasthai female (adj.): thêlus fiery: purinos figure: skhêma find (v.): heuriskein first: prôtos first and foremost: proêgoumenos follow (v.): akolouthein, hepesthai, parakolouthein, sumbainein, sunagesthai foot (measure): *pêkhus* form (n.): eidos formulation: lexis

fourth: tetartos frequently: pollakis general: katholou, koinos general, in: holôs generation: genesis genesis: genesis genitive (grammatical case): genikos genus: genos give (v.): apodidonai goat-stag: tragelaphos god: theos good: agathos, kalos greater: meizôn guard against (v.): phulassein happen (v.): sumbainein health: hugeia healthful: hugieinos healthy: hugieinos healthy, be (v.): hugieinein heart: kardia heat (v.): thermainein hold (v.): huparkhein holding (n.): huparxis homonymy: homônumia honour: timê horse: hippos house: oikia human being: anthrôpos hypothesis: hupothesis hypothesize (v.): hupotithenai hypothetical: hupothetikos hypothetical, totally: di'holôn hupothetikos

ignorance: agnoia immediate: prosekhês immediately connected: prosekhês immortal: athanatos implication: sunekheia, sunekhes implicitly: dunamei imply (v.): sunagein implying: sunaktikos impossible: adunatos impression: phantasia include: emperiekhein included, be (v.): enkeisthai inclusive, more: epi pleon inconsistent, be (v.): makhesthai indefinite: aoristos indemonstrable: anapodeiktos indeterminate: adioristos

indicate (v.): endeiknunai, ephistanai, dêloun indicating: dêlôtikos indication: endeixis, sêmeion individually: idiai, idiôs induction: epagôgê inductive: *epaktikos* inept: anoikeios infer (v.): epipherein, perainein, sunagein infer (syllogistically) (v.): sullogizesthai inference: sunagôgê inflected, be (v.): enklinesthai inflection: enklisis inquire (v.): zêtein instead of: anti intelligible: gnôrimos, sunetos interior (geometric term): entos investigate (v.): episkeptesthai isosceles: isoskelês

judged: *hupolêptos* justice: *dikaiosunê*

keep (v.): phulassein know (v.): eidenai, epistasthai knowable: epistêton knowlege: epistêmê known: epistêton, gnôrimos

last (adj.): eskhatos laughing: gelastikos laughter: gelôs lay out (v.): paratithesthai learn (v.): manthanein learning (n.): mathêsis leave out (v.): leipein, paraleipein length: mêkos less: elattôn, hêtton letter (of the alphabet): stoikheion lifeless: apsukhos like: homoios likewise: *hôsautôs* liquid (adj.): hugros literate: grammatikos live (v.): *zên* living: *empsukhos* lose (v.): apoballein

magnitude: *megethos* main part: *kephalaion* main point: *kephalaion* maintain (v.): axioun major: meizôn man: anthrôpos manner: *tropos* material content: hulê mean (v.): sêmainein meaning: dunamis member (of a contradictory pair): meros, morion mention (v): mimnêskein method: hodos. methodos middle: mesos minor: elattôn mislead (v.): paralogizesthai misled, be (v.): apatasthai misrepresentation: paremphasis missing, be (v.): elleipein, endein mistake (n.): apatê, hamartêma mistaken, be (v.): apatasthai mixture: mixis modality: tropos mode: tropos more recent thinkers: hoi neôteroi more: mallon motion: kinêsis move (v., transitive): kinein move (v., intransitive): kineisthai moved, be (v.): kineisthai

name (n.): onoma name (v.): onomazein nature, be by (v.): pephukenai nature: phusis necessary: anankaios necessity: anankê needed, be (v.): endein negating: apophatikos negation: apophasis negative: apophatikos next: hexês noble: kalos nominative (grammatical case): euthus nominative (grammatical case): klêsis tôn onomatôn nominative (grammatical case): orthos non-syllogistic: asullogistos

obvious: enargês obviousness: enargeia occur (v.): sumbainein odd (in number): perittos omit (v.): parienai

one's own: idios. oikeios only in one way: monakhôs opportunity: kairos opposite: antikeimenos, apenantios opposite, be (v.): antikeisthai order (v.): tassein order: taxis outside, from: exôthen overthrow (v.): diaballein parallel: parallêlos parallelism: parabolê parent: goneus part: meros, morion partial: merikos particle (grammatical): morion particular: merikos, en merei, epi merous, kata meros, kath' hekaston perceptible: aisthêtos perception: aisthanesthai perception, lack (v.): anaisthêtein perceptive: aisthêtikos perhaps: isôs perish (v.): phtheiresthai perishable: phthartos phrase: logos place (v.): tassein place first (v.): protassein place under (v.): hupotassein placed, be (v.): keisthai pleasure: hêdonê posit (v.): suntithenai, tithenai posited, be (v.): keisthai positing (n.): thesis position: taxis, thesis possible: dunatos possible, be (v.): dunasthai, endekhesthai, eneinai, enkhôrein possible, it is: hoion te potable: potos potentially: dunamei praise (v.): epainein precise, be (v.): akribologeisthai predicate (v.): katêgorein predicated in addition, be (v.): epikatêgoreisthai predication: katégoria predication, opposed: antikatégoria premiss: protasis present (v.): paradidonai presentation: paradosis presumably: isôs previous: proteros

primary: proêgoumenos principal: kurios prior: proteros privation: sterêsis privative: sterêtikos problem: problêma procedure: ephodos proceed (v.): proienai produce (v.): parekhein producing: poiêtikos prone to neigh: khremetistikos proof: deixis proper: oikeios properly: deontôs propose (v.): protithesthai proposed, be (v.): keisthai, prokeisthai proposition: protasis proprium: idion prosleptic: kata proslêpsin prove (v.): deiknunai proving: deiktikos punishment: kolasis put forward (v.): erôtan, proteinein, protithesthai put together (v.): suntassein qualification, without: haplôs quality: poion, poiotês quantity: poson, posotês rather: mallon rational: logikos reality: huparxis reason: aitia, aition recognize (v.): sunidein recognized: gnôrimos

recommend (v.): axioun reduce (v.): anagein reductio ad impossibile: apagôgê eis adunaton reduction: anagôgê refer (v.): deiknunai refutation: anairesis, anaskeuê refute (v.): anaskeuazein, aposterein, elenkhein refuting: anaskeuastikos relation: skhesis remain (v.): hupoleipein, kataleipein, leipein remaining: loipos remind (v.): hupomimnêskein

- required: ôphelimos
- reschematize (v.): metaskhêmatizein

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resolve (v.): luein result (v.): sumbainein reverse: empalin rid of, get (v.): aphairetein right (geometrical): orthos role: khôra run (v.): trekhein salvation: sôtêria same way, in the: homoiôs same: homoios schematization: skhêmatismos schematize (v.): skhêmatizein science: *epistêmê* sea: thalatta search: zêtêsis second: deuteros seek (v.): zêtein select (v.): eklegein selection: eklogê self-control: enkrateia self-moving: *autokinêtos* separate (v.): khôrizein sequence: akolouthia, taxis set down (v.): paratithesthai set out (v.): ektithesthai setting out (n.): ekthesis show (v.): deiknunai sibling: adelphos sick, be (v.): nosein sickness: nosos side: pleura sign: sêmeion signify (v.): sêmainein signify further (v.): prossêmainein signifying: sêmantikos similar: homoios simple: *haplous* simply: haplôs sketch: hupographê smaller: elattôn snow (n.): khiôn sophism: *sophisma* sound (adj.): hugiês sound (n.): phônê species: eidos specific: *idios* starting point: arkhê state: hexis stone: lithos straight: euthus strict sense, in the: kuriôs subject matter: hulê

subject, be a (v.): hupokeisthai substance: ousia substitute (v.): metalambanein subsume (v.): hupagein sufficient: hikanos suitable, be: harmozein superfluous: perittos supply (v.): prosupakouein suppose (v.): hupolambanein swan: kuknos syllogism: sullogismos syllogisms, producing: sullogistikos syllogistic (adj.): sullogistikos synthetic: sunthetikos take (v.): eklambanein, lambanein take away (v.): huphairein take in addition (v.): proslambanein taking (n.): lêpsis teach (v.): didaskein teachable: didaktos teacher: grammatikos teaching (n.): didaskalia temperance: sôphrosunê temple robber: *hierosulos* term: horos terrestial: pezos text: lexis thief: kleptês thing: pragma think (v.): dianoeisthai, hêgeisthai think little of (v.): kataphronein thinkable: dianoêtos third: tritos transform (v.): metalambanein transformation: metalambanomenon, metalêpsis transposition: metathesis treatise: pragmateia, sungramma treatment: pragmateia triangle: trigônon true of more things: epi pleon true: alêthês true, be (v.): alêtheuein true together, be (v.): sunalêtheuesthai truly, speak (v.): alêtheuein try (v.): peirasthai turn, in: palin twice: dis

unclarity: *asapheia* unclear: *asaphês* understand (v.): *akouein* understanding: gnôsis undertaking: pragmateia unequal: anisos unhealthful: nosôdês uninflected: anenklitos universal: katholikos, katholou unqualified: haplous, huparkhôn unsystematically: amethodôs use (v.): khrêsthai, proskhrêsthai useful: khrêsimos

verb: *rhêma* viciousness: *kakia* virtue: *aretê*

walk (v.): badizein, peripatein wall: toikhos want (v.): boulesthai, thelein water: hudôr way: tropos well-known: gnôrimos well: kalôs while ago, a little: pro oligou white: *leukos* whiteness: leukotês, to leukon whole: holos wings, having: ptênos wisdom: sophia wish (v.): boulesthai words: *lexis*, *logos* worth (adj.): axios worthy: axios wound (v.): titrôskein woven, be (v.): huphainesthai write (v.): graphein, sungraphein

yielding a conclusion: sunaktikos

Greek-English Index

This index, which is based on Wallies' text with my emendations, gives the English translation of many nouns, verbs, adjectives, adverbs, and a few prepositions used by Alexander; certain very common words (e.g. *einai, ekhein, legein*) are omitted, as are some words which occur only once. When a word occurs no more than ten times, its occurrences are listed; in most other cases only the number of occurrences is given. Occurrences in lemmas are ignored. There is a separate Index of Names.

- *adelphos*, sibling (example), 344,35-345,11(9); 359,30-1(3)
- *adioristos*, indeterminate, 36 occurrences in Alexander, 0 in Aristotle
- *adunatos*, impossible, 37 occurrences in Alexander, 4 in Aristotle; for other occurrences see *apagôgê eis adunaton* and *di' adunatou*
- *aeikinetos*, moving forever (example), 343,23(2)
- agathos, good (example), 250 occurrences in Alexander, 62 in Aristotle
- agnoia, ignorance, 358,32 and 48a20
- aisthanesthai, perception, 4 occurrences on 381 with 50a2
- aisthêtikos, perceptive, 413,18.19.20
- *aisthêtos*, perceptible, 14 occurrences in Alexander, 1 in Aristotle
- *aitia*, reason, cause, 345,24; 348,7; 353,12; 379,19; 394,2; 395,29; 396,14; 399,28; see also *aitios*
- *aitiasthai*, to find fault, censure, 347,18.20; 358,20
- aitiatikos, accusative (grammatical case), 359,32; 366,7.9
- *aitios* (adj.), reason, cause, 12 occurrences in Alexander, 1 in Aristotle; see also *aitia*
- akolouthein, to follow, 44

occurrences in Alexander, 4 in Aristotle

- akolouthia, entailment or entailment relation (405,27; 406,13; 407,16; 409,29; 410,1.11; 414,7.8.28; 416,25); sequence (348,2.4; 380,30; 409,29); consequent (409,25(2))
- *akouein*, to understand, 392,32; 397,11; 412,1.12
- *akribologeisthai*, to be precise, 352,22; 374,4.21
- akros, extreme, 36 occurrences in Alexander, 7 in Aristotle
- alêthês, true, 277 occurrences in Alexander, 25 in Aristotle
- alêtheuein, to speak truly, to be true, 24 occurrences in Alexander, 2 in Aristotle
- alloios, different, 351,17; 373,23
- *amesos*, having no middle term, 358,9.13.15.23; 359,2 (all with 48a33)
- amethodôs, unsystematically (Stoic term for certain arguments), 345,13.23; 346,3.6; see section 4 of the Introduction to Mueller (2006)
- amphibolos, ambiguous, 373,18
- anadiploumenos, duplicated, 368,1.24
- anagein, to reduce, 47 occurrences in Alexander, 11 in Aristotle

- anagôgê, reduction, 343,5; 349,3;
- 357,24; 386,7; 391,12.19; 395,15 anairein, to do away with, 27 occurrences in Alexander, 4 in Aristotle: see also sunairein
- anairesis, refutation, doing away, 385,23; 386,25; 388,32; see also anaskeuê
- anairetikos, doing away with, 384,30
- anaisthêtein, to lack perception (example), 346,15(2)
- *analogia*, analogy, 390,7; 397,27.28; 399,20; 400,20
- analogon, analogous, 400,8.9.10 (all 3 with 51b24)
- analuein, to analyze, 28 occurrences in Alexander, 15 in Aristotle
- analusis, analysis, 41 occurrences in Alexander, 3 in Aristotle
- Analutika, Analytics, 340,12; 405,30.34 (Aristotle's Analytics); 388,18 (Aristotle's Prior Analytics); 390,2 (Theophrastus' Analytics)
- *anankaios*, necessary, 41 occurrences in Alexander, 11 in Aristotle
- anankê, necessity, 50 occurrences in Alexander, 15 in Aristotle
- anapalin, conversely, 9 occurrences in Alexander, 2 in Aristotle
- anaphora, kat' anaphoran (403,29) and pros anaphoran (404,8) rendered 'anaphorically'
- anapodeiktos, indemonstrable, 358,10.12.13.23.25
- anaskeuastikos, refuting, 384,29; the adverb anaskeuastikôs is translated 'negatively' at 52a38 (413,23)
- *anaskeuazein*, to refute, 384,36; 385,2.3.6; 396,34 (with 51b5); 411,2
- anaskeuê, refutation, 385,32(2).36; see also anairesis
- andreios, courageous (example), 357,25-9(3)
- anenklitos, uninflected, 403,22
- *anisos*, unequal (example), 21 occurrences in Alexander with 4 in Aristotle
- anoikeios, inept, 404,32
- anthrôpos, human being (example), 142 occurrences in Alexander, 14

in Aristotle; translated 'man' 6 times between 374,13 and 17

- anti, instead of, in place of, 21 occurrences in Alexander, 8 in Aristotle
- antikatêgoria, opposed predication, 409,24.25
- antikeisthai, to be opposite, 28 occurrences in Alexander, 3 in Aristotle
- antiphasis, contradiction, (members of a) contradictory pair, 80 occurrences in Alexander, 0 in Aristotle
- antiphatikôs antikeimenon, contradictory opposite, 402,14; 408,28; 417,21
- antiphatikos, contradictory, 398,8
- antistrephein, to convert, 74 occurrences in Alexander, 16 in Aristotle
- antistrophê, conversion, 20 occurrences in Alexander, 3 in Aristotle
- *antithesis*, antithesis, 398,3.8; 405,26.32; 416,32.39; 418,11.18
- antithesthai, to be antithetical, 402,28; 418,11
- *aoristos (onoma)*, indefinite (name), 405,14
- apagôgê eis adunaton, reductio ad impossibile, 10 occurrences in Alexander, 0 in Aristotle (Aristotle uses apagôgê eis to adunaton at 45a24 and apagein eis to adunaton at 50a31); see also di'adunatou
- aparnêsthai, to deny; Aristotle uses this word three times at 47b2-4; Alexander substitutes apophaskein
- *apatasthai*, to be misled, make a mistake, be mistaken, 350,37; 353,7 (both with 47b15); 358,32 (with 48a32); also 47a31 and 52b15
- *apatê*, mistake, 350,25; 353,1.5 (all 3 with 47b38); 352,12.13; 356,28 (with 48a24); 358,8
- *apenantios*, opposite (geometrical), 359,4.9.10.11
- *aphaireteon*, one should get rid of, 343,18.30 (with 47a20)
- apoballein, to lose, 351,31.34; 352,6
- *apodeiknuein*, to demonstrate, 358,14; 418,19; also 50a3

apodeiktos, demonstrable,

- 358,10.25.30.31.33 (all with 48a37)
- *apodeixis*, demonstration, 351,24; 358,25; 381,10; 407,23
- *apodidonai*, to give (an account or definition), 350,12; 384,30.35; 385,2.9.15.31.33.37; 386,1
- apokrinein, to distinguish, 343,32; 350,17
- apokriteon, one should reject, 343,18
- apophantikos, assertoric, 401,17.27.28; 403,23.24.25 apophasis, negation, 140 occurrences in Alexander, 17 in Aristotle
- *apophaskein*, to deny (349,10; 364,6; 385,10); to negate (401,24)
- *apophatikos*, negative, negating, 139 occurrences in Alexander, 1 in Aristotle (51a39), who prefers *sterêtikos*
- *apostellein*, to convey (an impression), 343,6; 397,23
- *apothnêskein*, to die (example), 17 occurrences between 403,13 and 404,24
- *apsukhos*, lifeless (example), 376,27; 413,18.19.20.33.34.35.37; 414,1

aretê, virtue (example), 14 occurrences in Alexander, 0 in Aristotle

arkhê, starting point, 11 occurrences in Alexander, 1 in Aristotle; tên arkhên used adverbially at 341,32 and 374,16; in prepositional phrases such as ex arkhês ('initial'); used in example of syllogism ('beginning') at 357,11-17.

artios, even (in number; example), 389,16.23.28 (with 50a38)

asapheia, unclarity, 368,35; 373,3; 411,10

asaphês, unclear, 362,5; 364,33; 385,13; 398,23

- *asullogistos*, non-syllogistic, 22 occurrences in Alexander, 0 in Aristotle
- asunaktos, not yielding a conclusion, 379,28
- athanatos, immortal (example), 343,24.26
- atopia, absurdity, 389,26

atopos, absurd, 353,33; 355,26; 379,18 (with 49b34); 389,25; 404,18

- *autarkhês*, sufficent, 343,4 *autokinêtos*, self-moving (example), 343,23.26
- *axios*, deserving (342,7.9.10, all in examples); worthy (357,25.29(2), all in examples); worth (390,9)

axioun, to maintain (374,6; 390,17; also 47b28); to recommend (356,25; 367,11; 373,27; 384,19; 385,11)

- *badizein*, to walk (example), 397,20-400,21(48, with 51b11-20(11))
- *blepein*, to attend, 344,9; 350,24; 374,4,22; translated 'look' at 47b12

boulesthai, to wish, want, 15 occurrences in Alexander, 0 in Aristotle

deiknunai, to prove, show (259 occurences in Alexander, 15 in Aristotle); to refer (402,21; 402,23.30; 404,32.34; 405,7)

- *deiktikos*, proving (343,3,7; 348,16; 397,5; 413,37); indicating (368,10)
- deixis, proof, 25 occurrences in Alexander, 0 in Aristotle
- dêlos, clear, 27 occurrences in Alexander, 6 in Aristotle
- *dêlôtikos*, indicating, 12 occurrences in Alexander, 0 in Aristotle

déloun, to make clear, indicate, 36 occurrences in Alexander, 0 in Aristotle

- *deontôs*, properly, 353,13; 385,15; 417,26
- *deuteros*, second, 88 occurrences in Alexander, 2 in Aristotle
- di' adunatou, through impossibility, 388,28; 389,7; Aristotle uses dia tou adunatou at 50a29 and 51b2
- *diaballein*, to overthrow, 351,5; 356,20.22
- diabolê, overthrowing, 374,24
- *diagônios*, diagonally opposite, 408,19(2); 415,17
- diagramma, diagram, 406,12
- diairein, to divide, 9 occurrences in Alexander, 3 in Aristotle

diairesis, division, 357,31; 373,4

- diairetikos, disjunctive, 386,28; 390,5
- *dialegein*, to converse (342,29; 366,28; 367,7); to argue (387,17; 388,22.24, all 3 with 50a20)
- *dialuein*, to dissolve (example), 346,15.17
- *diametros*, diagonal, 389,15.22.27 (all 3 with 50a37); *kata diametron* translated 'diagonally opposite' at 409,11.13
- dianoeisthai, to think (example), 351,2.9; see also dianoêtos
- dianoêtos, thinkable (example), 14 occurrences between 350,32 and 351,29 with 4 between 47b22 and 47b28; see also dianoeisthai
- *diaphora*, difference (348,24; 349,19.20; 352,23; 366,4; 370,10; 380,23; 389,7; 407,1; also 50b1); differentia (366,35; 384,35)
- *diaphoros*, different, 350,29; 373,19; 375,4.6; 390,9; 407,3
- diathesis, way of being disposed, 353,20.23
- *didaktos*, teachable (example), 386,19.20(2)
- didaskalia, teaching, 379,28; 381,14
- *didaskein*, to teach (340,25; 350,31; 359,18; 381,16; 406,1; 411,7); to explain (372,22; 412,25.26)
- dikaiosunê, justice (example), 33 occurrences in Alexander, 4 in Aristotle
- diezeugmenon, disjunction, 390,5
- *dioristeon*, one should distinguish, 367,8 (with 49a10)
- diorizein, to distinguish, 414,22
- dipous, biped (example), 373,5(2)
- *dis*, twice, 348,36; 349,23; 367,17.22; 369,8.17
- dittos, ambiguous, 402,8.15
- *dotikos*, dative (grammatical case), 359,32; 365,33.35; 366,5
- *dunamei*, potentially (342,34; 378,12); implicitly (398,19.25; 399,18)
- dunamis, capacity, 27 occurrences between 386,32 and 389,11 with 5 occurrences between 50a19 and 34; also translated 'meaning' at 365,24; other occurrences under dunamei

- **dunasthai**, to be possible, be able, 89 occurrences in Alexander, 9 in Aristotle; other occurrences under *ison dunasthai*
- *dunatos*, possible, 348,19; 352,7.12; 353,16; 371,5
- eidenai, to know, 340,23; 350,21; 396,35
- *eidos*, species (368,18; 410,21); form (356,36)
- ekkeisthai, to be set out, 359,18; 375,24; 376,1.14; 384,20; 394,6; 407,1; also 48a8
- *eklambanein*, to take, 343,14; 349,3; 357,30; 374,23; also 47a11
- *eklegein*, to select, 340,26; 360,2; 365,29
- eklêpteon, we should take, 348,35
- eklogê, selection, 359,20
- ekthesis, setting out, 14 occurrences in Alexander, 2 in Aristotle; see also ektithesthai
- *ektheteon*, one should set out, 357,23; 359,20
- ektithesthai, to set out, 19 occurrences in Alexander, 4 in Aristotle; see also ekthesis and ekkeisthai
- ektos, external (geometric term), 359,3.8.9.11.12
- elattôn, minor (term or premiss; 64 occurrences in Alexander, 1 in Aristotle); smaller (341,7.11 (both with 46a12)); less (344,24; 379,33; 381,11)
- elenkhesthai, to be refuted, 385,26
- elleipein, to be missing, 346,33 (with 47a28)
- *empalin*, converse, reverse, 342,5; 355,27; 356,2; 407,23; 414,27.28.31; 416,27
- emperiekhesthai, to be included in, 397,36; 398,25
- emprosthen, earlier, 389,18; 396,25
- *empsukhos*, living (example), 14 occurrences in Alexander, 0 in Aristotle

enantios, contrary, 48 occurrences in Alexander, 13 in Aristotle, almost all as an example

enargeia, obviousness, 388,15.20; 408,27

- enargés, obvious (the usual translation), clear, 385,36; 387,29; 388,1.7.17; 407,34
- endeiknunai, to indicate, 352,22; 412,7; 418,17
- *endein*, to be missing (342,38; 412,12); to be needed (346,10)
- endeixis, indication, 412,7; 418,17
- endekhesthai, to be possible, be able, be contingent, 61 occurrences in Alexander, 20 in Aristotle. For the most part Aristotle uses the word with an ordinary sense without the technical overtones of its use in modal logic (where I translate in terms of contingency)
- *eneinai*, to be possible, 355,10; 387,29; 390,32; 391,1
- energeia, activity (as a category), 366,28
- *enkhôrein*, to be possible, 351,35; 360.3; 381,33; also 52b13
- enklinesthai, to be inflected, 403,17-34(7)
- enklisis, inflection, 403,24
- *enkrateia*, self-control (example), 385,34.38(2); 386,1.2
- entos, interior (geometric), 359,4.8
- epagôgê, induction, 388,9.19
- epainein, to praise (example), 359,33
- *epainetos*, to be praised (example), 388,34.35; 389,2.4
- epaktikos, inductive, 343,16
- epanadiplôsis, duplication, what is duplicated, 367,15; 369,26; also 49a26
- epapanadiploumenos, duplicated, 18 occurrences in Alexander (all with 49a11); see also anadiploumenos; see section 8 of the Introduction
- *epharmozein*, to assimilate (353,1); to be compatible with (375,14; 377,3); to coincide with (377,30)
- *ephexês*, consecutive (geometric), 358,27(2).29; 359,12(2).13
- ephistanai, to indicate (344,11); to make focus (381,18)
- ephodos, procedure, 391,17.18
- *epi pleon*, more inclusive (344,13; 350,26; 370,25; 380,12.34;

381,1(2)); true of more things

- (408,16); at greater length, 367,13
- epiblepein, to examine, 341,15
- epiblepteon, one should examine, 350,4
- epidekhesthai, to admit, 392,20-29(4); see the note on 50b31 (392,3)
- epikatêgoreisthai, to be predicated in addition, 369,13.15.17.23.24.32; 371,21(2), all related to 49a25; see section 8 of the Introduction
- epipherein, to add (8 occurrences in Alexander), infer (11 occurrences in Alexander)
- episkepteon, we should investigate, 367,7 (with 49a9)
- *episkeptesthai*, to investigate, 343,27; 367,12; also 50a40
- epistasthai, to know. The verb occurs 6 times in various forms in 51b5-25 and 47 times in Alexander's comment on it from 396-400; here are the translations: epistasthai, knowing (knows); epistamenos, knowing (is a knower); epistatai, knows
- epistêmê, knowledge, science, 79 occurrences in Alexander, 22 in Aristotle, almost all in examples
- *epistêmôn*, knower (example), 399,29 (with 51b20)
- *epistêton*, knowable, known, 30 occurrences between 368,23 and 372,15 with 4 between 49a23 and 30 in examples
- erôtan, put forward, ask, 12 occurrences in Alexander, 3 in Aristotle
- eskhatos, last, 360,12.15.19 (all with 48b1); 362,23.27(2); 371,18; 413,2.11; also 47b5
- *euparakolouthêtos*, easy to follow, 381,7.10
- *euthus* (adj.), nominative (grammatical case; 48 occurrences between 359,21 and 368,14); straight (line; 358,28(2); 359,6; 379,29.30(2) (all 3 with 49b35))
- euthus (adv.), straight away, 348,27 (with 47a36); 350,24
- ex huptheseôs, from a hypothesis, 38

occurrences in Alexander, 10 in Aristotle exégeisthai, to explain, 365,23; 411,30; 412,14 exôthen, external, from outside, 343,11.28; 369,12 gelastikos, laughing (example), 377,14-19(6); 380,5.6 gelôs, laughter (example), 364,16.17 (both with 48b32.33) genesis, generation (340,22 (with 47a2); 360,30); genesis (364,12-15(5) with 48b31-2(3), in an example) genikos, genitive (grammatical case), 359,30; 361,17.34; 362,9.32; 364,24; 366,7 genos, genus, 37 occurrences in Alexander, 6 in Aristotle, some in examples gnôrimos, known, well-known, recognized, intelligible, 15 occurrences in Alexander, 0 in Aristotle gnôsis, understanding 340,31; 361,30.32; 362,2.11.12.13.14 (all but the first in examples) goneus, parent (example), $344.32 \cdot 345.2(5)$ gônia, angle (example), 358,17-359,10(15) grammatikos, literate (example, 361,6-14(5)); teacher (example, 402,24-405,9(8)graphein, to write, 342,28 (with 47a16); 365,17; 366,28 hairetos, choiceworthy, 341,33; 342,1; 370,33.34.36; 371,1.23.24.32 (always used as an example) hamartêma, mistake, 365,17; 374,19 haplôs, without gualification, simply, absolutely, 37 occurrences in Alexander, 6 in Aristotle; see also haplous haplous, simple, unqualified, 97 occurrences in Alexander, 0 in Aristotle; see also haplôs harmozein, to be suitable, 361,20; 363,35; 364,32; 366,3.11 hêdonê, pleasure (example), 20

occurrences in Alexander, 5 in Aristotle

- hêgeisthai, to think, 358,25; 374,4; hêgoumenos is translated 'primary' at 415,6; otherwise forms of hêgoumenon are translated 'antecedent' at 374,27.32; 383,3.5.12.13.17.23.29; 407,22.33
- hepesthai, to follow, 89 occurrences in Alexander, 4 in Aristotle; hepomenon is translated 'consequent' at 340,27; 347,26-9(7); 374,31; 383,4.11.30; 407,30; it is translated 'conclusion' at 348,11; ta hois autoi hepontai is translated 'antecedents' at 340,27
- *hêtton*, less, 385,13 (with 50a13); 390,8; 402,11.15.34
- heuresis, discovery, 373,1; 384,22
- *heuriskein*, to discover, find, 11 occurrences in Alexander, 1 in Aristotle
- hexés, next, 388,27; 394,10; 398,25; 412,13; 415,17; translated 'in the sequel' at 348,22
- *hexis*, state, condition (in examples), 26 occurrences in Alexander, 4 in Aristotle
- *hierosulos*, temple robber (example), 342,7.9
- hikanos, sufficient, 408,26
- *hippos*, horse (example), 364,2; 376,5.7; 380,9; 414,1(2)
- *hodos*, method, 349,26
- *hoion te*, it is possible, 24 occurrences in Alexander, 1 in Aristotle
- holos, whole, 26 occurrences in Alexander, 3 in Aristotle; other occurrences under hupothetikos, di'holôn
- **holôs**, in general, at all, 18 occurrences in Alexander, 5 in Aristotle
- *homoios*, similar, like, same, 30 occurrences in Alexander, 0 in Aristotle; see also *homiôs*
- *homoiôs*, similarly, in the same way, 85 occurrences in Alexander, 17 in Aristotle
- *homologein*, to agree, 356,24; 357,9 (both with 48a21); 388,33; also

50a25; translated 'be consistent' at 47a8

- homologia, agreement, 386,15; 387,16.23; 388,26; 389,7.9.13.31; see also sunthêkê
- homônumia, homonymy, 357,16
 horismos, definition (20 occurrences in Alexander, 1 in Aristotle); definiens (385,27.28.30.32; see horiston)
- horiston, definiendum, 385,27.29(2).31.38; see horismos

horizein, to define, 365,27; 384,33; 385,3.24.33; hôrismenos translated 'determinate' at 378,16.18; 400,28.30; 407,10; 410,10; 415,11

horos, term (144 occurrences in Alexander, 25 in Aristotle); definition (348,30 and 10 times between 384,30 and 385,36, these 10 with 50a12)

- *hôsautôs*, likewise, 5 occurrences in Aristotle, 0 in Alexander
- *hudôr*, water (example), 385,15-29(6, with 50a14.15)

hugeia, health (example), 43 occurrences in Alexander, 6 in Aristotle

hugieinein, to be healthy (example), 23 occurrences in Alexander, 2 in Aristotle

hugieinos, healthful, healthy (example), 25 occurrences in Alexander, 3 in Aristotle

- hugiês, sound, correct, 345,14; 368,17; 384,32; 385,26; 403,18; 405,15; 416,39; 417,20
- hugros, liquid (example), 385,16.20(2) (all with 50a15)
- *hulê*, subject matter, material content, 344,29; 345,22; 379,20.25; 380,22.26; 414,9; 425,10
- hupagein, to subsume, 356,36
- hupakouein, to correspond, 361,2
- *hupallassein*, to change, 414,11; 415,12
- *huparkhein*, to hold, 114 occurrences in Alexander, 65 in Aristotle; translated 'be' at 47a40; *huparkhôn* translated 'unqualified' 8 times
- *huparxis*, holding, reality, 366,21; 375,7; 397,18

- huperekhein, to exceed, 348,6-9 (5, example); 381,1
- huphainesthai, to be woven (example), 403,5-7(3)
- *huphairein*, to take away (example), 342,2.4
- hupographê, description, sketch, 380,25; 413,6

hupographein, to describe, 10 occurrences in Alexander, 0 in Aristotle

hupokeisthai, to be a subject, be assumed, 49 occurrences in Alexander, 2 in Aristotle

hupolambanein, to suppose, 358,11; 379,18; 397,5.10 (both with 51b6); 411,2

hupoleipein, to remain, 415,5.16; 417,9.13.14; see also kataleipein, leipein, loipos

- *hupolêptos*, judged, 373,11-15 (4; with 49b6-9(3))
- *hupomimnêskein*, to remind, 396,26; 412,18.24
- *hupotassein*, to place under, 11 occurrences in Alexander, 0 in Aristotle
- hupothesis, hypothesis, 13 occurrences in Alexander, 1 in Aristotle; other occurrences under ex hupotheseôs
- hupothetikos, hypothetical, 386,28; 388,26; 390,4.11.17; 397,27; other occurrences in the next entry
- hupothetikos, di' holôn, totally hypothetical, 348,12; 350,16

hupotithenai, to hypothesize, 10 occurrences in Alexander, 1 in Aristotle

- *idiai*, *idiôs*, individually, 367,9; 417,4.21.24.29
- *idios*, specific, one's own, 371,16.18.22.26 (all with 49a36); *idion* translated *proprium* at 344,30; 366,35; 379,25
- *isodunamos*, equivalent (said of expressions), 346,34; 373,30

ison dunasthai, to be equivalent to, 344,18; 347,3.4; 353,2; 372,31; 373,27; 379,10; 399,1.4; 411,18; 412,5; *to auto dunasthai* at 372,27 (with 49b3)

- *isos*, equal (69 occurrences in Alexander, 10 in Aristotle, usually in an example); equivalent (45 occurrences in Alexander, 0 in Aristotle); see also *isodunamos* and *ison dunasthai*
- *isôs*, perhaps, 376,13.14 (both with 49b20); presumably, 387,28; 388,13 (both with 50a27); 417,19 (with 52b29)
- isoskelês, isosceles (example), 358,16.17.19 (all with 48a34); 369,35; 370,1
- *kairos*, opportunity (example), 365,22.23.27.30 (all with 48b35-8(3))
- *kakia*, viciousness (example), 324,31.32
- *kallôpistês*, dandy (example), 342,11(2)
- *kalos*, noble, beautiful, good (example), 30 occurrences in Alexander, 0 in Aristotle
- *kalôs*, well, correctly, 353,9.34 (both with 48a1.8); 355,13; 356,7; 416,32
- *kardia*, heart (example), 404,24(2)
- *katagraphê*, diagram, 379,14.29; 381,8.9.12; 414,11
- katagraphein, to draw, 379,31.33
- *kataleipein*, to remain, 414,28; 415,15; 416,7.27.28; 417,8; see also *hupoleipein*, *leipein*, *loipos*
- *kataphasis*, affirmation, 98 occurrences in Alexander, 4 in Aristotle
- *kataphatikos*, affirmative, 111 occurrences in Alexander, 0 in Aristotle
- kataphronein, to think little of (example), 357,26.27.28
- *kataskeuastikos*, establishing (adj.), 343,7.9
- kataskeuastikôs, positively, 412,9 (with 52a31)
- kataskeuazein, to establish, 389,10; 396,31.34 (both with 51b5); 411,2
- *katégorein*, to predicate, 154 occurrences in Alexander, 14 in Aristotle
- *katêgorêteon*, one should predicate, 367,4
- katêgoria, predication (27

occurrences in Alexander, 1 in Aristotle); category (366,14.18.20.23.32; 367,4 (all with 49a7))

- *katêgorikos*, categorical (345,15.20; 346,5; 348,30; 378,19; 386,14; 388,14; 390,8); affirmative (50b22.30.36.39; 51a16); see also *kataphatikos*
- *kath' hekaston*, particular (342,16.17, on which see the note); 405,16
- *katholikos*, universal (said of a proof), 414,10; 415,11
- *katholikoteron*, more universally, 360,18; 369,15; 414,9
- katholou, universal(ly) (168
 occurrences in Alexander, 13 in Aristotle); general(ly) (361,26;
 397,14; 400,8; 400,23;
 405,21.23.25); always (343,27;
 346,21; 356,25)
- *katôthen*, from below, 383,14.16.23; see the note on 383,14
- *keisthai*, to be assumed, be posited, be placed, be proposed, be considered, 79 occurrences in Alexander, 2 in Aristotle
- *kephalaion, to*, main part (340,21); main point (367,12)
- *khiôn*, snow (example), 367,2; 374,20(2); 376,28
- *khlaumus*, cloak (example), 403,4-6(3)
- khôra, role, 365,2; 411,34
- *khôristeon*, one should distinguish, 343,20
- *khôrizein*, to separate, 343,32; 396,35; 400,28
- *khremetistikos*, prone to neigh (example), 414,1.2.3
- khrêsimos, useful, 340,31; 411,8
- khrêsteon, one should use, 366,11
- *khrêsthai*, to use, 357,3; 360,25; 364,36; 368,22; 380,4.10.22; 381,19; 407,35; 411,29; see the note on 381,3
- *khrôma*, colour (example), 356,30.31(2).38(2); 359,26; 410,9
- *kinein*, to move (transitive, example), 343,24; 357,34(2)
- kineisthai, to move (intransitive,

404,22.23); to be moved (343,24);

- to be changed (364,8), all examples *kinêsis*, motion (example, 343,25); change (example, 364,12-14(4)
- with 48b31(2)) *kleptês*, thief (example), 342,3-9(4)
- *koinos*, common, general, 21 occurrences in Alexander, 0 in Aristotle
- *kolasis*, punishment (example), 342,6-10(3)
- kosmos, cosmos (example), 357,12.14 kuknos, swan (example),
- 356,30-35(5); 375,29-376,2(4) *kurios*, principal, 343,32; 349,2
- *kuriôs*, in the strict sense, 343,20; 360,6; 386,14; 392,23; 398,33; 399,1; 401,20; 403,21; 409,12
- *lambanein*, to take, assume, 258 occurrences in Alexander, 15 in Aristotle
- *leipein*, to leave out (344,34; 347,1.7; 350,13; 387,27); to remain (415,29; 417,10); see also *hupoleipein*, *kataleipein*, *loipos*
- lêmma, assumption, 383,4
- *lêpsis*, taking, 356,21; 357,23; 376,9; 379,17.19.21
- *lêpteon*, one should take, 11 occurrences in Alexander, 9 in Aristotle
- *leukos*, white (example), 179 occurrences in Alexander, 45 in Aristotle; translated 'bright' at 367,2.3
- *leukotês*, whiteness (example), 356,33-6(4); *to leukon* translated 'whiteness' at 374,21 (example)
- *lexis*, text (362,5; 364,33; 365,17; 387,27; 390,10; 398,24; 405,31; 411,10); expression (360,37; 373,20.21.28.29.30; 374,3(2).5(2)); words (361,4; 372,29; 373,16.17.19); formulation (373,33; 378,19; 413,6); *têi lexei monon* translated 'in name only' at 356,19 and *kata tên lexin* translated verbally at 48a9
- lithos, stone (example), 397,7.9.11
- *logikos*, rational (example), 10 occurrences in Alexander, 0 in Aristotle

- logos, argument (51 occurrences in Alexander, 4 in Aristotle; the word 'argument' occurs often in angled brackets because, for example, what I call 'argument from a hypothesis' is in Greek ho ex hupotheseôs); account (350.12; 356,19; 371,24; 385,1.2; 386,1 (all 3 with 50a13)); discussion (381,28; 393,17; 397,14); phrase (357,20-358,2(5, with 48a30); 358,13,26; 359,1 (all 3 with 48a38); 372,28-373,27(14, with 49b4-8(5))); expression (401,16-403,25(6)); words (381,11); explanation (51b10)
- *loipos*, remaining, 349,3; 404,36; 414,24.25; 415,18; 416,28; see also *hupoleipein*, *kataleipein*, *leipein luein*, to resolve, 417,17
- *makhesthai*, to be inconsistent, 373,24; 403,7
- *mallon*, more (348,13; 350,5; 364,35; 390,8; 405,13); rather (371,27; 404,5)
- *manthanein*, to learn, 381,10-25(5, all with 50a2)
- mathêsis, learning, 381,14
- megethos, magnitude, 357,13.15
- *meizôn*, major (premiss or term; 79 occurrences in Alexander, 1 in Aristotle); greater (10 occurrences in Alexander, 2 in Aristotle)
- *mêkos*, length, 373,3; 385,14 (with 50a14)
- *merikos*, particular (341,16; 372,12.17 (all in comparative)); partial (385,22)
- meros, part (19 occurrences in Alexander, 4 in Aristotle); member (of a contradictory pair; 414,23.24(2); 415,3; 416,26; 418,5); some prepositional phrases: en merei, particular, 9 occurrences in Alexander, 12 in Aristotle; epi merous, particular, 72 occurrences in Alexander, 0 in Aristotle; kata meros, particular, 51a1; see also morion
- *mesos*, middle (term, figure), 102 occurrences in Alexander, 28 in Aristotle

- *metalambanein*, to transform (347,1.10; 354,19; 355,13; 362,14; 372,24.27.32; 373,6.8 (all 5 with 49b3); other occurrences under *metalambanomenon*); to substitute (355,13; 48a9.25)
- *metalambanomenon*, transformation (386,13.22.30; 388,14); transformed (404,18)
- *metalêpsis*, transformation, 373,9.13.22(2).28.31; 374,4; see also *metlambanein*
- *metalêpteon*, one should substitute, 48a27
- *metaskhêmatizein*, to reschematize, 360,35
- *metathesis*, transposition. Alexander uses the phrase *ek metatheseôs* ('by transposition') to refer to expressions involving predicates such as 'not-good' 39 times starting at 401,22; it appears from 397,2-3 that this phrase is synonymous with Theophrastus' *kata metathesin* ('involving transposition'), which Alexander uses once at 414,8
- *methodos*, method, 340,5.6.9.11.15.17.20.25
- *mimnêskein*, to mention, 363,5; 390,2; 399,1.6; 405,29; 409,9.18
- *mixis*, mixture, 353,31; 355,18; 382,34
- *moikhos*, adulterer (example), 342,7-12(4)
- mokhthêros, defective, 402,26.31
- *monakhôs*, only in one way, 349,33.35; 350,2
- *morion*, part (341,11); particle (grammatical; 397,17; 402,10; 403,11); member (of a contradictory pair (*antiphasis*; 18 occurrences, starting at 406,18)); see also *meros*
- *mousikê*, culture (example), 351,21.23; 352,7
- *mousikos*, cultured (example), 40 occurrences in Alexander with 9 in Aristotle
- *neôteroi, hoi*, more recent thinkers, 345,13; 373,29; 390,17

nosein, to be sick (example), 353,10-355,8(18, with 48a11.12)

- nosôdês, unhealthful (example),
- 386,35-388,8(17, with 50a22.23) nosos, sickness (example),
 - 353,12-355,17(28, with 48a3-18(6))
- oikeios, one's own, proper, appropriate, 30 occurrences in Alexander, 0 in Aristotle
- oikeiotês, appropriate or specific relation, 340,28; 379,23; 380,19
- oikia, house (example), 403,4.5.33.34
- oikodomeisthai, to be built (example), 403,4.5.6
- oligou, pro, a little while ago, 351,20; 373,24; 414,34; 415,13; 415,20; 417,11
- onoma, name, 51 occurrences in Alexander, 9 in Aristotle; on the phrase klêseis tôn onomatôn (366,1, with 48b41), translated 'nominatives' see the note on 366,3
- onomazein, to name, 403,1
- ôphelimos, required (example), 365,25.27.28 (all with 48b37)
- orthos, right (of an angle; 12 occurrences in Alexander with two in Aristotle); nominative (grammatical case; 359,28.29); correct (416,36 (with 52b15))
- ousia, substance, 51 occurrences in Alexander, 7 in Aristotle, most in examples
- *palin*, again, in turn, 59 occurrences in Alexander, 14 in Aristotle
- *pantôs*, always, in any case, 19 occurrences in Alexander, 0 in Aristotle
- parabolê, parallelism, 381,19
- *paradeigma*, example, 34 occurrences in Alexander, 0 in Aristotle; translated 'exemplar' at 381,18; the word 'example' appears frequently in the translation as a representation of *hoion*
- paradidonai, to present, 340,10.12
- paradosis, presentation, 379,15
- *parainein*, to advise, 365,36; 366,9; 384,28
- parakolouthein, to follow (mentally), 379,24; 380,1

- *paraleipein*, to leave out, 341,21-343,29(20, with 47a17.19); 345,27; 369,1; 398,29; 406,36
- paralêpsis, false assumption, 402,26.31
- parallêlos, parallel, 359,5.6.7
- paralogismos, fallacy, 374,15
- paralogizesthai, to mislead, 357,1
- *paraphulakteon*, one should pay attention, 383,32
- *paraphulattein*, to pay attention, 343,10; 374,10; 375,4
- *paratithesthai*, to lay out, set down, 16 occurrences in Alexander, 0 in Aristotle
- parekhein, to produce, 373,3; 398,28
- *paremphasis*, misrepresentation, 402,26; 404,33
- parienai, to omit, 341,21-350,16(13)
- paulan ekhein, to cease, 343,24.25
- *peirasthai*, to try, 342,12; 350,22; 357,4; 358,24; 360,27; 386,5; also 47a10
- *peirateon*, one should try, 348,26 (with 47a36); also 50a6
- *pêkhus*, foot (measure, example), 348,6-7(3)
- pephukenai, to be by nature, 349,29
- *peponthenai*, to have a character, 341,13; 365,2
- *perainein*, to infer, to reach a conclusion, 15 occurrences in Alexander, 7 in Aristotle
- *perantikos*, conclusive, 373,34; 390,17.19
- periekhein, to contain, 342,35.36; 368,13.18(2).22; 399,17.21; 'contain' often translates the Greek ekhein
- *perilambanein*, to encompass, 371,3; 378,17
- *peripatein*, to walk (example), 402,34-5(4); 405,11-14(5)
- *perittos*, superfluous (343,6.30.33; 343,37; 346,11; 368,3); odd (in number; example, 389,22.28 (both with 50a38))
- pezos, terrestial (example), 373,5(2)
- phainesthai, appear, 340,8; 380,24
- *phaneros*, evident, 16 occurrences in Alexander, 18 in Aristotle
- *phantasia*, impression, 343,6; 397,23; 398,28

- *phasis*, assertion, 399,32.34 (both with 51b20); 401,26 (with 51b33); also 52b23(2)
- **phônê**, expression (375,7); sound (410,9)
- *phthartos*, perishable (example), 351,5 (with 47b25.29); 369,7.10.12 (with 49a24); 385,3.9
- *phtheiresthai*, to be destroyed, to perish (example), 21 occurrences in Alexander, 4 in Aristotle
- *phulassein*, to guard against (350,20.21; 357,16); to keep (357,5.31)
- *phusis*, nature, 361,3; 373,7; 406,22
- *pistis*, credibility (396,28); evidence (402,20)
- pistos, credible, 341,2; 388,9
- *pistousthai*, to make credible (342,18; 399,30); to offer evidence for (402,12)
- *pleonakis*, more than once, 349,21 (with 47b8); 350,5
- *pleura*, side (example), 389,22.27
- *poiêteon*, one should make, one should do, 359,22; 360,21; also 50a8
- *poiêtikos*, producing (example), 385,34.35; 387,2.4
- *poion, to*, quality, 362,33.34(2); 363,2.4.6 (all with 48b17 and 19); see also *poiotês*
- poiotês, quality, 352,33(2); 356,33.34; 359,26; 366,27; 390,7; see also poion, to
- *pollakis*, frequently, 344,28; 357,20 (with48a30); 379,20; 380,23; 381,16; 388,14; 397,4; also 47b15.40
- *polu*, many, 19 occurrences of positive, comparative, and superlative in Alexander, 5 in Aristotle; other occurrences under *epi pleon*
- *poson, to*, quantity, 400,32.37; 410,10.14
- posotês, quantity, 366,26
- *potos*, potable (example), 386,16-30(8, with 50a15(2))
- pragma, thing, 360,5; 366,20; 404,6
- *pragmateia*, treatment (340,22); undertaking (340,31); treatise (345,16)

problêma, problem, 27 occurrences in Alexander, 5 in Aristotle

- *prodiomologeisthai*, to agree beforehand, 389,19, citing 50a36; also 50a33
- proégoumenos, primary, first and foremost, 372,32; 373,19; 386,27; proégoumena translated 'antecedents' at 414,36
- *proeipein*, to have said, 342,19; 372,19; 388,25; 391,18; 410,9
- *proeirêkenai*, to have said, discussed, mentioned, spoken, described, called, stated (previously), 23 occurrences in Alexander, 4 in Aristotle
- *proienai*, to proceed, 391,15; 393,12; 411,33
- prokeisthai, to be proposed, be under consideration; the term to prokeimenon is very common in Alexander, sometimes with a complement, e.g., deixai ('to prove') or sumperasma ('conclusion'), but where it stands alone, as it usually does, I have often provided a complement (e.g., 'what it is proposed to prove' or 'the proposed conclusion'), 30 occurrences in Alexander, 0 in Aristotle
- *prokheirizesthai*, to choose, 348,4; 401,5
- *prosekhês*, immediate, immediately connected; 366,18; 370,20.29.37; 371,14.22; 372,18.23
- proskatêgoreisthai, to be co-predicated, 17 occurrences, 2 quoting or paraphrasing Aristotle, *Int.* 9, 19b19-24; see section 7 of the Introduction
- **proskeisthai**, to be added, 29 occurrences in Alexander, 0 in Aristotle
- *proskhrêsthai*, to use (340,9; 381,7.14; see the note on 381,3); to make further use of (379,21.31.33 (all 3 with 49b34))
- *proslambanein*, to assume or take in addition, to add (as a premiss or term), 23 occurrences in Alexander, 0 in Aristotle
- proslêpsis, additional assumption, 388,21; 390,4.14.15; kata

proslêpsin translated 'prosleptic' at 378,14 and 26; see also proslambanein

- prossêmainein, to further signify, 404,5; 405,3
- *prosthêkê*, addition, 369,32; 370,7.12; 372,11; 374,21
- *prosthen*, earlier, 384,24; 409,30
- prostheteon, one should add, 343,29
- *prostithenai*, to add, 38 occurrences in Alexander, 0 in Aristotle
- *prosupakouein*, to supply (words in a text), 411,22
- *prosupakousteon*, one should supply (words in a text), 377,6
- *protasis*, premiss, proposition, 251 occurrences in Alexander, 17 in Aristotle
- *protassein*, to place first in position, 398,4.5; 414,12
- *proteinein*, to put forward (a premiss), 342,14.15.30 (all with 47a15.16); 350,28
- *proteros*, previous, prior, 340,32 (with 47a6); 388,18; 391,20; 404,10; also 47b16 and 47b35
- *protithesthai*, to propose, put forward, 411,8; 415,23; 416,7; see also *prokeisthai*
- prôtos, first, 143 occurrences in Alexander, 29 in Aristotle
- prouparkhôn, previously existing
 (example), 345,10.11
- pseudos, false, 62 occurrences in Alexander, 10 in Aristotle; to pseudos translated 'mistake' at 355,35 (with 48a19) and at 48a16
- *psukhein*, to cool (example), 387,3(2)
- *ptênos*, having wings (example), 11 occurrences in Alexander, 0 in Aristotle
- ptôsis, (grammatical) case, 57 occurrences in Alexander, 2 in Aristotle; see the note on 366,3 numinoa fiory (overallo), 285-2, 24(4)
- *purinos*, fiery (example), 385,3-24(4)
- *rhadios*, easy, 346,27 (with 47a22); 349,3.30; 373,1 (with 49b5); 380,1; 384,20
- rhêma, verb, 403,16-26(4); 405,33

saphêneia, clarity, 343,17; 379,28

- *saphês*, clear, 344,10; 367,24; 375,28; 386,31
- sêmainein, to mean, signify, 74 occurrences in Alexander, 7 in Aristotle
- *sêmantikos*, signifying, 368,5; 403,19 *sêmeion*, sign, indication
- (364,16-17(4; repeating an example of Aristotle at 48b32-3); 368,14; 371,16.18.22.27 (all 4 with 49a36); 379,26.32; 398,10; 404,6; 413,21); (geometric) point (359,5)
- *sêmeiôteion*, it should be pointed out, 356,28; 368,7
- **skhêma**, figure (of a syllogism), 215 occurrences in Alexander, 31 in Aristotle; translated 'appearance' at 397,1
- skhêmatismos, schematization, 360,37
- skhêmatizein, to schematize, 359,20; 366,22
- skhesis, relation, 11 occurrences in Alexander, 0 in Aristotle
- *sôma*, body (example), 352,33-4(3); 359,29; 385,2-24(4)
- sophia, wisdom (example), 361,30-362,15(15, with 48b12-14(3))
- sophisma, sophism, 352,4
- sôphrosunê, temperance (example), 385,35.37
- *sôtêria*, salvation (example), 357,26-8(3)
- *sterêsis*, privation, 409,21.26.35 (all with 52a15)
- sterêtikos, privative, 14 occurrences in Alexander, 16 in Aristotle
- *stoikheion*, letter, 379,15-381,23(12); 414,9; 415,11
- sunkhôrein, to assent, agree, 350,29; 353,2.6; 356,23 (all with 47b40); 387,16; 388,35; 389,19 (with 50a36); 392,33
- sullogismos, syllogism, 232 occurrences in Alexander, 41 in Aristotle
- sullogistikos, (adj.), syllogistic, producing syllogisms, implying, 45 occurrences in Alexander, 0 in Aristotle
- *sullogizesthai*, translated in a variety of ways, usually

incorporating the word 'syllogism', e.g., produce a syllogism (or syllogisms), infer or deduce syllogistically, etc., but sometimes just infer, deduce, etc.; 13 occurrences in Alexander, 2 in Aristotle

- sumbainein, to follow, result, happen, occur, 14 occurrences in Alexander, 16 in Aristotle; other occurrences under sumbebêkenai, sumbebêkos
- sumbebêkenai, to belong, 351,15; see sumbainein
- sumbebêkos, accident, 359,27; 367,2; see sumbainein
- summetros, commensurable (example), 389,22.27 (with 50a37)
- sumperasma, conclusion, 144 occurrences in Alexander, 6 in Aristotle
- *sumpherôn*, advantageous (example), 343,35.37; 357,26-9(3)
- *sumplekein*, to combine, 360,27.30; 361,35; 366,3; 367,4 (with 49a9)
- sumplokê, combination (11 occurrences in Alexander, 0 in Aristotle); conjunction (390,6)
- sumpseudesthai, to be false together, 402,36; 418,5
- sunagein, to imply, infer; the passive is frequently translated 'follow', 77 occurrences in Alexander; Aristotle does not use the word in the Analytics
- sunagôgê, inference, 380,3sunaktikos, implying (343,26; 413,32); yielding a conclusion (379,27; 380,23); Alexander uses asunaktikos at 379,28
- sunalêtheuesthai, be true together (with), 15 occurrences in Alexander, 0 in Aristotle
- *sunanairein*, to do away with when one is done away with (as in 'The parts of a substance do away with the substance when they are done away with'), 347,4.10.11.12; see also *anairein*
- *sunaptesthai*, to be connected, 346,25; 362,3.8; 367,34; see also *prosekhês*

- suneispherein, to contribute, 379,32; 380,2
- sunekheia, implication, 374,27 sunekhes (neuter of sunekhês),
- implication, 374,27; 386,27; 390,4
- sunêthês, customary, 373,9; 411,10 sunetos, intelligible, 368,2.7.32 (all with 49a22)
- sungramma, treatise, 390,1
- sungraphein, to write, 342,29
- sunidein, to recognize, 346,10.27
- sunkataskeuazein, to establish together with, 342,21
- sunkeisthai, to be composed; to be composite, 13 occurrences in Alexander, 1 in Aristotle; translated 'to be a component' at 405,33 (Aristotle); note that the word 'composed' often corresponds to the Greek preposition ek
- sunnêmmenon (perfect middle participle of sunaptein; term of Stoic logic), conditional, 374.30.32.33
- suntassein, to combine, put together, 25 occurrences in Alexander, 0 in Aristotle; suntetagmenon translated 'coordinated' at 406,13
- suntaxis, combination, 360,3
- *suntelein*, to contribute, 343,26; 379,27.32
- sunthêkê, agreement, 386,9.12.15; 387,29 (all with 50a18)
- sunthesis, combination, composite, 367,3; 403,22
- *sunthetikos*, synthetic (theorem), 274,20; 278,8; 283,12.14; 284,12
- sunthetos, composite (said of arguments), 17 occurrences in Alexander, 0 in Aristotle
- *suntithenai*, to combine (348,37); to posit (386,16.18); to agree (386,32)
- *sunuparkhein*, to co-exist, 388,16; 400,14; 406,19; 407,32; 408,21
- sustasis, establishing, 343,16
- suzugia, combination (of premisses), 30 occurrences in Alexander; see also sumplokê
- *tassein*, to order, place, 11 occurrences in Alexander, 2 in

Aristotle; *tetagmenos* translated 'determinate' at 50a9

- *taxis*, arrangement (380,31; 409,30; 414,18; 415,12; also 52b14); order (398,6; 405,27.30 (both with 51b36)); position (365,8; 409,23); sequence (of thought, 377,8; 379,5; 382,2)
- *tetartos*, fourth, 391,5; 392,7(2); 393,11; 394,24
- thalatta, sea (example), 385,17-29(3)
- thelein, to want, 394,9; 411,12
- thêlus, female, 402,21; 404,32
- *theos*, god (example), 365,30-36(10, with 48b36-8(3)); 385,2.3.4.9.24; 404,17
- *thermainein*, to heat (example), 387,2.3
- *thesis*, positing (346,24; 350,27 (with 47b17); 369,30 (with 49a27)); position (350,6 (with 47b14); 398,6); arrangement (409,23 (with 52a16))
- *theteon*, one should posit, 348,36; 355,15; 369,26; 370,14; also 14 occurrences in Aristotle
- *timê*, honour (example), 357,25-9(3)
- tithenai, to posit, 56 occurrences in Alexander, 8 in Aristotle; see also keisthai
- *titrôskein*, to wound (example), 404,23.24
- *toikhos*, wall (example), 408,4-11(4); 409,7
- tragelaphos, goat-stag (example), 368,34-369,20(8, all with 49a24); 370,4
- trekhein, to run (example), 404,22.23
- *trigônon*, triangle (example), 20 occurrences in Alexander, 2 in Aristotle
- *trikhôs*, in three ways, 349,35; 350,3; 384,16; 395,11
- tritos, third, 85 occurrences in Alexander, 10 in Aristotle
- *tropos*, way, manner (10 occurrences in Alexander, 3 in Aristotle); modality (397,18; 411,33.35); mode (380,25; 413,30.31 (both with 52a38))
- *zên*, to live (example), 403,12.13; 404,8

zêtein, to seek, inquire, 13 occurrences in Alexander, 3 in Aristotle zêtêteon, one should seek, 370,14

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Index of Names

(a) Ancient

This index includes the names used explicitly by Alexander. For the Stoics, see the Appendix.

Aristotle: 373,28 (always says it is necessary to guard against homonymy); 388,21 (espouses use of equivalent expressions whereas *hoi neôteroi* treat different forms of expression differently); 402,1 (thinks, by contrast with the Stoics, that 'Socrates is not white' is the negation of 'Socrates is white')

Epicurus: 346,14 (his argument that death is nothing to us)

Eudemus: 390,3 (wrote on hypothetical arguments; 389,31-390,3 are Text 20 of Wehrli (1955))

Kallias (example): 16 occurrences between 402,9 and 33

Mikkalos (example): 22 occurrences between 351,25 and 352,26 with 6 between 47b30 and 36

Parmenides: 346,18 (infers that being is one thing from the premiss that what is other than being is what is not); 357,1 (his mistake in making this inference)

Plato (example): 359,32

Socrates (example): 43 occurrences Theophrastus: 340,14 (reduces arguments to the figures in Arguments which have been reduced to the figures); 340,20 (describes the method of analysis in On the Analysis of Syllogisms; 340,13-21 are Text 97 of Theophrastus: Sources); 367,13

(treats issues of composite predication in On Affirmation; 367,7-14 are Text 88 of Theophrastus: Sources); 378,14 (calls propositions such as 'A is said of that of all of which B is said' prosleptic (kata proslêpsin)); 378,20 (shows in On Affirmation that prosleptic propositions are only verbally different from categorical ones); 379,9 (in his On Intepretation takes 'A of that of which B' to be equivalent to 'A of everything of all of which B' (as Alexander does not); 378,12-23 and 378,30-379,11 constitute Text 110A of Theophrastus: Sources); 388,17 (says in the first book of his *Prior Analytics* that the additional assumption in a hypothetical argument is posited either through induction or because it is from a hypothesis, or because it is obvious or through a syllogism; 388,17-20 are Text 112B of Theophrastus: Sources); 390,2 (treats hypothetical syllogisms in his Analytics; 389,31-390,9 are Text 111E of Theophrastus: Sources); 397,2 (refers to propositions in which negation is attached to the predicate as 'involving transposition' (kata metathesin); 396,34-397,4 are Text 87A of Theophrastus: Sources)

(b) Modern scholars

For the Introduction I give a page reference. For the translation I give the line of the note in which the person is mentioned. I do not include editors of texts except where they are invoked for a textual emendation, translation, or interpretation.

Bäck, Allan: 350,9 Barnes, Jonathan: 390,3.6 Brunschwig, Jacques: 405,14 Hülser, Karlheinz: 344,8; 345,25; 347,17; 373,20; 374,35; 390,3; 391,20; 402,8; 404,35; 405,14 Rose, Lynn E.: 381,8 Ross, W.D.: *passim* Sedley, David: 390,6 Smith, Robin: 379,12; 396,31 Stornajalo, Cosimo: p. 20 Wallies, Maximilian: *passim*

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